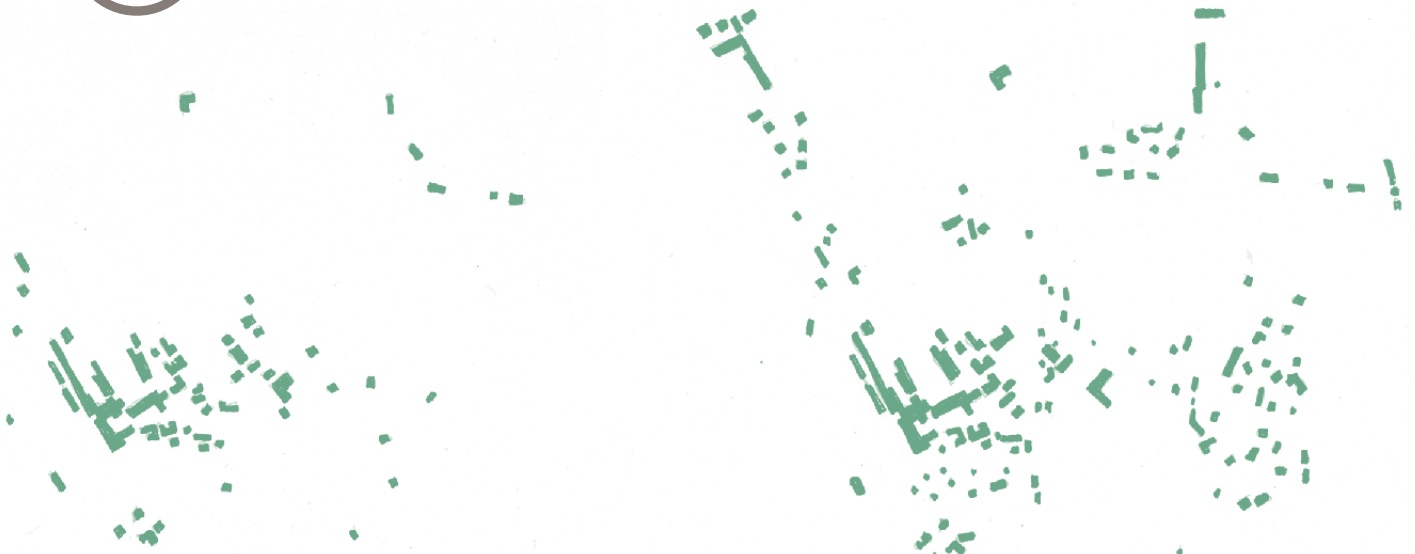




CIPRA



Save land, save soil

What do we need for a turnaround in land management in peri-urban areas?



1950 1978
1995 2012



The project “Saving:Soils – for a trend reversal in the use of land in peri-urban areas” focused on the Alpine countries and is funded by the German Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection within the framework of the European Environmental Protection Initiative (EURENI).

More information on the project at
www.cipra.org/saving-soils

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« J'ai longtemps cru que le problème foncier était de nature juridique, technique, économique et qu'une bonne dose d'ingéniosité suffirait à le résoudre. J'ai lentement découvert qu'il était le problème politique le plus significatif qui soit, parce que nos définitions et nos pratiques foncières fondent tout à la fois notre civilisation et notre système de pouvoir, façonnent nos comportements. »

« I have long believed that the problem of land is legal, technical and economic and that a good dose of ingenuity would be enough to solve it. Slowly, however, I am coming to realise that it is the most significant political problem of all, because our definitions and practices in relation to land underpin both our civilisation and our system of power and shape our behaviour. »

Edgard Pisani, Utopie Foncière, 1977

1

Introduction

Unsealed, healthy soils provide food, ensure biodiversity, offer recreational spaces and mitigate the consequences of the climate crisis. Nevertheless, the Alpine countries are sealing land on a daily basis, especially in urban areas. In addition, they are increasingly building wind, hydropower, biomass and solar plants due to the energy transition. Conflicts of use are pre-programmed. The economical use of land is therefore more important than ever.

Life on earth depends essentially on healthy soils. They are diverse living systems and non-renewable. It takes around 1,000 years for ten centimetres of soil to form. Soils are more than just surface, they fulfil multiple functions:

- ▶ They provide us with food.
- ▶ They filter and purify the groundwater and drinking water.
- ▶ They serve as buffers by binding substances such as CO₂.
- ▶ They are the largest carbon store on earth and thus an important key to mitigating climate change.
- ▶ They are an important habitat and contribute to biodiversity: More living creatures live in one cubic metre of soil than there are people on earth.

Our livelihood soil is in danger

Soil that is sealed or damaged by erosion, compaction and pollution can only fulfil its functions to a limited extent or not at all: less food is produced, no CO₂ is bound from the atmosphere, water no longer seeps away. The consequences are floods and inundations, warming of the air, increased expenditure for the provision of drinking water. Often the damage is irreversible.

We lose large amounts of healthy soil every day. Much of this loss is caused by land use and improper management by humans. The EU report “Caring for Soils is Caring for Life” sets a target that at least 75 % of soils in each EU country must be healthy or significantly improved by 2030 in order to protect soil ecosystem services.

Soils in peri-urban areas are already under severe pressure from housing and transport development, renewable energy infrastructure and industrial land. The Covid-19 crisis has further increased the demand for real estate in peri-urban and rural areas. Conflicts of use on peri-urban land will continue to increase in the future, due also to energy transition projects (wind farms, ground-mounted or agro-photovoltaics, energy crops) and the bioeconomy (cultivation of crops such as raw materials for industry), which also take up land. Land consumption is favoured by current market

mechanisms and tax regulations (real estate and land as investment assets and speculative objects). The instruments of spatial planning or the will to apply them are currently not strong enough to bring about a reduction in land consumption or even a reversal of the trend.

With the project “Saving:Soils – for a trend reversal in the use of land in peri-urban areas”, CIPRA shows which strategic approaches exist at regional, national and transnational level and what concrete implementation can look like at local level. The geographical focus of the observations is on Germany, France, Switzerland and Austria. In terms of content, the project was dedicated to the topics of land use and sealing, where there are already numerous approaches to positive changes. The Alpine countries have so far had little experience in the area of unsealing and have not yet dealt with land use conflicts arising from the energy turnaround, despite high conflict potentials. Securing healthy soils for the future is a task for society as a whole. Therefore, public institutions, but also private companies, agricultural and forestry enterprises and ultimately all landowners are urgently required to quickly and comprehensively address the issue of land conservation.

↳ **Note**

In the text we use phrases such as saving land, land consumption and land use. This is due to the different terms used in different countries, documents and contexts (political language, scientific language). We use these terms to refer to land consumption for settlement and transport purposes, but not to land consumption for agricultural and forestry use. Furthermore, the use of the terms land consumption and land saving is not entirely correct, as the earth’s surface cannot be consumed or saved. Furthermore, in this document we address both quantitative and qualitative soil protection. In the description of strategies and measures, these two goals, which are implemented with different instruments, are not always strictly separated from each other.

2 Overarching strategies for land saving measures

For several years, different solutions and strategies for soil protection and enhancement have been developed at European and regional levels. Political decision-makers now recognise the urgency of the problem. The European Commission has formulated comprehensive soil protection goals in the EU mission “Soil Deal for Europe”. Germany wants to reduce soil consumption to below 30 hectares per day by 2030 and move to a circular economy (net zero target) by 2050. Austria aims to reduce soil consumption from the current 11–13 to 2.5 hectares per day by 2030 and to reach the net-zero target by 2050. The same applies to France and Switzerland.

In this chapter, we show which goals and instruments are currently being applied, what advantages and disadvantages they have and how the current implementation status is to be assessed on the basis of selected strategies at European, transnational and national level.



2.1 European strategies

Soil Deal for Europe

(Heinzelmann, 2022)

The “Soil Deal for Europe” is one of the five EU missions. EU missions are new instruments at the interface between research and practice. They are designed to support and accelerate the application of research findings in practice.

The EU sees a great need for help on the ground:

- ▶ About 60–70 % of all soils in Europe are considered degraded. This is due to farming practices, pollution, urbanisation and the effects of climate change.
- ▶ 2.8 million sites are potentially contaminated and pose a major health risk.
- ▶ Cropland soils lose 0.5 % carbon per year; 50 % of peatlands are drained and lose carbon. This contributes to the climate crisis.
- ▶ 24 % of land has unsustainable water erosion rates.
- ▶ 65–75 % of agricultural soils have nutrient inputs at levels risking eutrophication of soils and water and affecting biodiversity.
- ▶ 25 % of soils in Southern, Central and Eastern Europe were at high or very high risk of desertification in 2017.
- ▶ The costs associated with soil degradation in the EU exceed 50 billion euros per year.



Therefore, the mission “Soil Deal for Europe” pursues the following EU-wide goals until 2030:

- ▶ 25 % of land under organic farming.
- ▶ Reduce the overall use and risks of chemical pesticides by 50 % and the use of more hazardous pesticides by 50 %.
- ▶ Reduce fertiliser use by at least 20 %.
- ▶ Prevent nutrient losses by at least 50 %.
- ▶ Reduce microplastics released into the environment by 30 %.
- ▶ Reduce net greenhouse gas emissions by at least 55 % compared to 1990 levels.

These goals are to be achieved through four fields of action:

- ▶ A research and innovation programme (Horizon Europe).
- ▶ The establishment of 100 living labs and lighthouses for the application, demonstration and up-scaling of research results. They are at the heart of the strategy. Each living lab should consist of 10–20 sites working together at local or regional level.
- ▶ A soil monitoring system and harmonised indicators.
- ▶ Communication, training, awareness raising and citizen participation.

EU Biodiversity Strategy for 2030

(European Commission, 2020)

The strategy sets out how Europe can contribute to ensuring that all the world’s ecosystems are restored, resilient and adequately protected by 2050. The strategy addresses the five main drivers of biodiversity loss: land and sea change, overexploitation, climate change, pollution, and invasive alien species. It also sets out an improved governance framework to address remaining gaps. It ensures the full implementation of EU legislation and brings together all efforts in this regard. The biodiversity strategy makes clear that protecting and restoring nature requires more than just regulation.

In particular, Chapter 2, “Protecting and restoring nature in the European Union” focuses on soil. Subchapter 2.2.3 “Addressing land take and restoring soil ecosystems” describes activities that influence soil degradation and how these can be avoided. In addition, the European Commission adopted two updated strategies in 2021 (EU Soil Strategy for 2030 and EU Action Plan: ‘Towards Zero Pollution for Air, Water and Soil’). These address the protection of soil fertility, the reduction of soil erosion and the increase of soil organic matter.

Chapter 2.2.8 “Greening urban and peri-urban areas” delves into the development of land use in urban areas. Urban planning should systematically integrate the promotion of healthy ecosystems, green infrastructure and nature-based solutions to stop the loss of green urban ecosystems. To achieve this, cities in the European

Union should implement urban greening plans by the end of 2021. An EU Urban Greening Platform will facilitate the work of mayors and other stakeholders from 2021 onwards.

In addition to the topic of saving land, subchapter 2.2.5 also contains the important topic of land use conflicts in the context of the energy transition. In 2021, the EU Commission reviewed data on biofuels, highlighted the high risk of indirect land use changes and set out a plan for phasing out these fuels by 2030.

EU soil strategy for 2030

(European Commission, 2021)

The strategy is dedicated to protecting and restoring soils and ensuring their sustainable use thereafter. It includes a vision and sets out targets for healthy soils by 2050 and concrete measures to protect them by 2030. The strategy also announces a Soil Health Law to be developed by 2023. This law should help to ensure a level playing field and a high level of environmental and health protection. The EU Soil Strategy 2030 is part of the EU Biodiversity Strategy (see above) and a building block for achieving the goals of the Green Deal.

Guidelines on best practice to limit, mitigate or compensate soil sealing

(European Environment Agency, 2012)

The European Union published a working document by the European Commission in 2012. It provides information on the extent of soil sealing in the European Union, its impact and examples of good practice.

The authors provide an overview of soil sealing including technical information, current challenges and trends. They outline how soil is affected by the impacts of sealing. They describe about a dozen best practice examples that have been implemented in states, regions and municipalities in the EU: from land use targets and land use planning to water management and the introduction of ecological standards in urban planning.

The report highlights those elements that appear to be the most effective in combating soil sealing. These include:

- ▶ Applying an integrated approach to spatial planning that involves all relevant public authorities and actively involves the public.
- ▶ Regular monitoring using appropriate indicators.
- ▶ Promoting the reuse of existing buildings and redeveloping brownfield sites to avoid further land consumption and soil sealing.
- ▶ Reducing subsidies for private housing and other construction on undeveloped land and green spaces, as they encourage land consumption and soil sealing.

In Chapters 6, 7 and 8, the authors focus on limiting, mitigating and compensating for soil sealing. Since soil sealing is an almost irreversible process, limiting sealing is the first priority, ahead of mitigation or compensation. In terms of mitigation, it is most successful to avoid unnecessary damage to soils that are not directly affected by construction activity (use of areas such as gardens or municipal green spaces). Compensating for soil sealing is about restoring the lost functions of the ecosystem. The report mentions four different ways of compensation: 1. reuse of topsoil excavated during the sealing of a certain area, so that this soil can be reused elsewhere; 2. unsealing of a certain area as compensation for a sealed area; 3. eco-accounts and trade in development certificates; 4. collection of “soil sealing fees” to be used for soil protection projects or for other ecological projects.

The report concludes with a message to raise awareness: The important role that soil plays in our ecosystems is often underestimated. The lack of awareness of the negative impacts of land use is identified as one of the biggest challenges for more sustainable land use and spatial planning policies. The initiatives and activities of the European Union aim to raise awareness of various aspects related to land use and land consumption.



2.2 Alpine Space Strategies

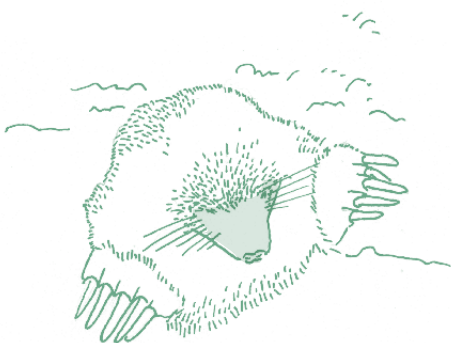
Economical and prudent use of soil in the Alps

(Alpine Convention, 2020)

The report of the Alpine Convention gives an overview of soil use and consumption in the different Alpine countries. It shows quantitative and qualitative targets, solutions and measures to protect soils from further sealing and overuse. Currently, all countries use significantly more land than they have set as a target (see Fig. 1 and Fig. 2). Furthermore, the report makes clear the intergenerational importance of soils: it includes the “Soilutions” resolution drafted by the Youth Parliament to the Alpine Convention in 2018.

The report also shows that the conditions for land use in the Alpine countries are very different. Therefore, a wide range of solutions is needed. The Protocol on Soil conservation (Article 7) and the Spatial Planning and Sustainable Development Protocol (Article 9) of the Alpine Convention form an important basis for the careful use of land.

The last three chapters of the document deal with soil and climate protection, the monitoring of soil consumption and soil in an agricultural context. At the end of the report, the authors point out the importance of local examples of best practice. In addition, it is important to act at regional, national and international level in order to use the soil in the Alps sparingly and carefully.



The consequences of sealing

Sealing the soil means that rainwater does not seep away or does so only slowly. The groundwater, which regulates the water balance, is not replenished. During long periods of heat, streams and small bodies of water can run dry. The soil releases only a little moisture into the air. The result is overheating. Gas exchange between soil and air is also limited by sealing. Soil fertility and soil regeneration are severely impaired, due in part also to the death of soil animals that have no access to air and water.

Figure 1: Exceeding of 2030 land consumption target values based on current consumption values for various Alpine countries

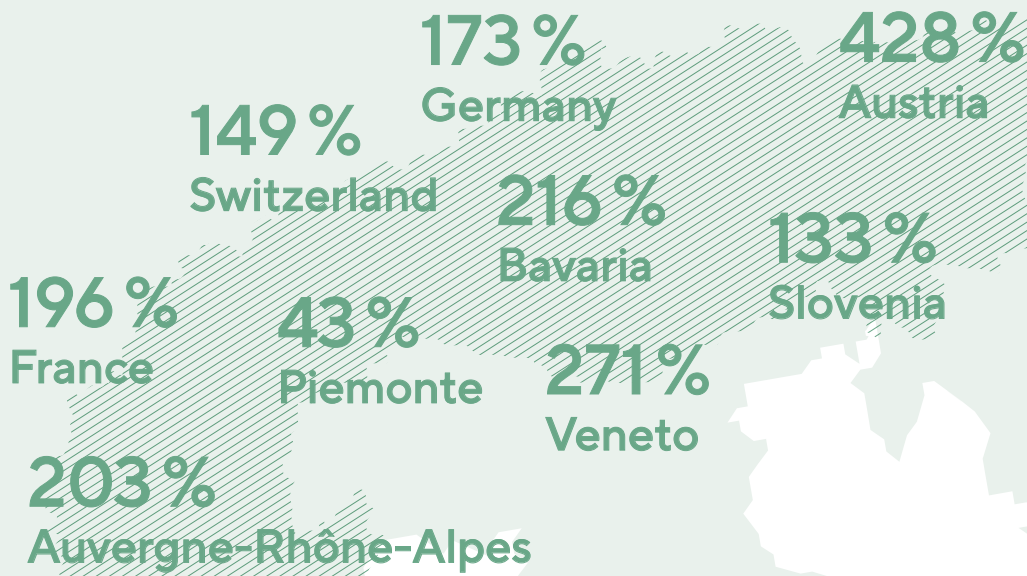
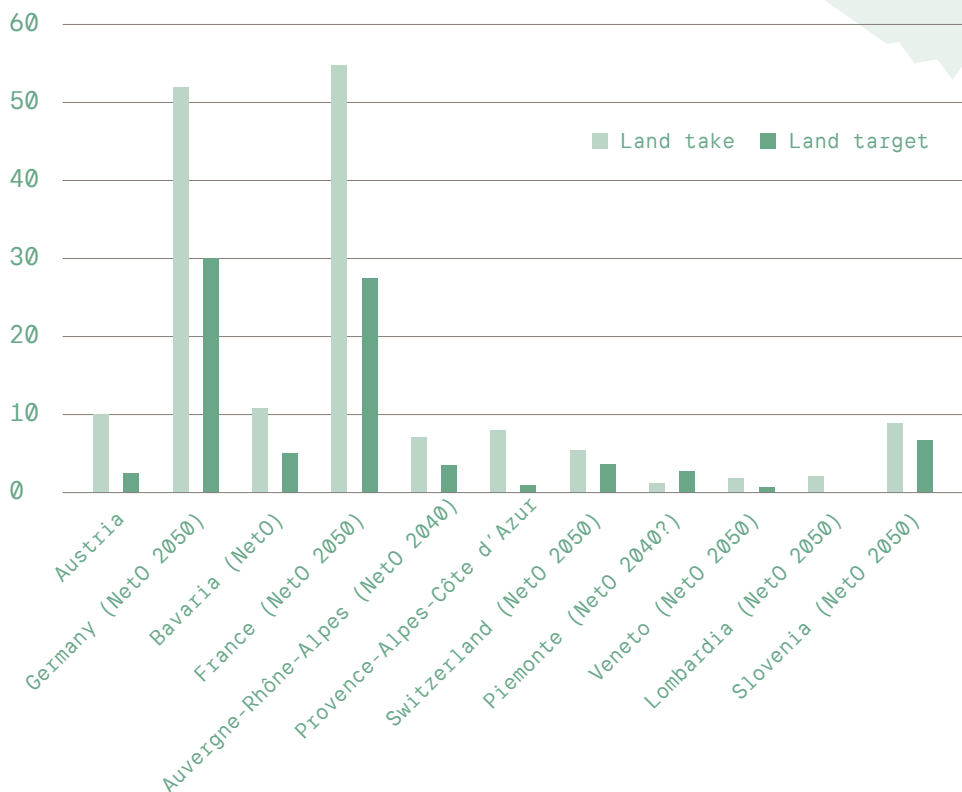


Figure 2: Land consumption targets and current land consumption in Alpine countries (in hectares)



Source: ifuplan 2022

2.3 National strategies

Germany's National Sustainable Development Strategy

(Federal Government, 2020)

The strategy was adopted in 2017 and has since been further developed by the Federal Government in line with the 2030 Agenda in 2018, 2020 and 2021. It contains goals, transformation areas, a systematic link to the 17 Sustainable Development Goals (SDG), measures and indicators. Particularly noteworthy is the thematic focus on land use. The topics of unsealing and land competition in connection with the energy transition are not prioritised in the strategy.

With regard to the implementation of the 17 SDG and the reference to land use, Goal 11 "Make cities and human settlements inclusive, safe, resilient and sustainable" is in the foreground in the context of the topic of land saving. The German government formulates three main goals in this regard (11.1.a, p. 374):

- ▶ Reduce land consumption to an average of 30 hectares per day by 2030.
- ▶ By 2050: aim for a circular economy, i.e. no net use of additional land for settlement and transport purposes.
- ▶ Reduce the per capita loss of open space.
- ▶ Do not reduce settlement density.

The federal government sets out several activities to achieve these goals. Activities 10 and 14 should be highlighted in connection with the more economical use of land. Activity 10 provides for a budget of 790 million euros, which the federal government will make available to the Länder. Funding is provided for activities such as overall urban development measures with integrated development concepts to promote sustainable cities and municipalities. The details of the measures are not explained. Measures for climate protection or climate adaptation are a mandatory requirement for funding. With the renewal of the Spatial Planning Act (ROG) in 2017, the possibility for quantified targets for the first-time use of open spaces for settlement and transport purposes was (indirectly) enshrined as a spatial regulatory principle. These principles are to be further specified in nationwide spatial plans or regional plans.

Aktionsplan Flächensparen (Action Plan on Land Saving), Germany

(German Environment Agency, 2018)

The document from the German Environment Agency (UBA) is based on the research project of the same name and focuses on "the institutional and instrumental preparation and further development of measures for the reduction of land use

with regard to their implementation in legislation, in administrative enforcement and in the area of private actors in land management” (p. 4). The Action Plan presents the results of the processing and analysis of existing and new instruments and measures to reduce land use. The instruments were divided into instrument bundles and relate to the local (cities and municipalities), regional and national (federal and state) levels.

The Action Plan is based on the federal government’s 30-hectare target for 2020, which the report says could not be achieved. The authors give several reasons for this. They mention that there are sufficient planning and steering instruments available, but that their potential is not fully exploited by decision-makers at local and regional level. As the report shows, the instruments provide too few incentives for land-saving behaviour on the part of land users and owners, mechanisms for inter-communal burden and use equalisation are hardly used, and information on existing land potential is often unknown at the local level. Other reasons for not reaching the 30-hectare target are the high land demand due to local and regional conditions, conflicting goals at the local level as well as overarching framework conditions. The authors use concrete examples to show how existing instruments can be used effectively at local and regional level (p. 96). Whether the 30-hectare target will be reached by 2030 cannot be foreseen at present.



Flächensparoffensive Bayern (Bavaria's land-saving initiative), Germany

(Bavarian Ministry of Economic Affairs, Regional Development and Energy, 2020)

The Bavarian state government's document includes theoretical principles, current figures on land consumption in Bavaria and good examples from the seven Bavarian administrative districts. Currently about 12 % of the total area of Bavaria is used for settlement and transport purposes. Just under a third of the state's area is covered by forest, and about half is used for agriculture.

One of the measures is the anchoring of a guideline value of five hectares per day in the Bavarian State Planning Act. This guideline value stands for the maximum use of land for settlement and transport purposes to be targeted throughout Bavaria by the year 2030. At the federal level, a guideline value of 30 hectares per day is envisaged, which was anchored in Germany's National Sustainable Development Strategy. Three levels of action have been defined in order to reduce land consumption and thus achieve the Bavarian land saving target: The first level comprises regional planning with measures such as a standardised demand statement for new settlement areas. On the second, regional level, the strengthening of regional planning associations or vacancy management are mentioned as measures. At the third level, the focus is on communication. This includes activities such as events, specialist congresses or publicity campaigns.

The district of Cham and the Schweinfurter Land can be highlighted as good examples. The district of Cham operates a new generation of settlement management. Digital tools are used there to identify, evaluate and market vacancies at an early stage. In the Schweinfurt region, the Intermunicipal Alliance for the Upper Werntal Valley has been in existence since 2003 and focuses on inner development. Through various measures, the region has been able to save 50 hectares of building land in recent years.

Finally, the strategy also addresses the financial aspects of land saving. In order to be able to estimate the follow-up costs of building areas, the Bavarian state government provides a follow-up cost estimator as a support for municipalities. It can be used to calculate the initial and follow-up costs that can arise from a new residential area.

Soil Strategy for Austria

(Austrian Conference on Spatial Planning, 2021)

Austria adopted the Austrian Spatial Development Concept ÖREK 2030 in 2021. Based on this, a Soil Strategy for Austria is currently being prepared. The members of the Austrian Conference on Spatial Planning (ÖROK), a multi-level governance body for the national coordination of spatial development issues in the country, have the task of developing a strategy for reducing further land use and soil sealing by 2022 with the following objective: the extent of new sealing of land is to be

significantly reduced by 2030, and sealed land is to be unsealed where possible. Quantitative targets are to be set for this purpose. In this way, agricultural land in particular is to be safeguarded and the importance of soils for climate protection and adaptation to climate change is to be taken into account.

Based on a political decision in the context of the Austrian Spatial Development Concept, the following contents are to be developed for the “Soil Strategy for Austria”:

- ▶ Develop harmonised data bases and data collection methods throughout Austria.
- ▶ Define a target system.
- ▶ Develop a nationwide harmonised monitoring system.
- ▶ Identify and further develop effective instruments and measures for more efficient use of existing potential (inner city development, redensification, activation of gaps between buildings, recycling of brownfield sites, mobilisation of dedicated building land), for the protection and development of natural, green and recreational space.
- ▶ Define an action plan with concrete activities, milestones and target horizons for implementation by 2030.

#mission2030 - the Austrian Climate and Energy Strategy

(Federal Ministry of Sustainability and Tourism, Federal Ministry of Transport, Innovation and Technology, 2018)

In May 2018, the Austrian federal government published its strategy. Its aim is to achieve sustainable and affordable decarbonisation in a cost- and resource-efficient manner in line with growth and employment, to support the innovative capacity of Austrian companies and to shape development towards the use of renewable energies.

The #mission2030 states the implementation of a “consistent decarbonisation path until 2050” (p. 6) with the goal of a “decarbonised energy supply by 2050” (p. 15). Austria’s short-term goal is to reduce its greenhouse gas emissions by 36 % by 2030 compared to 2005. In 2005, Austria’s greenhouse gas emissions were over 55 million tonnes CO₂ equivalent. In the area of land use, the document primarily addresses climate change adaptation measures as well as land use. No measures for unsealing are mentioned.

Task 8 (p. 51) deals with climate-friendly land use in urban and rural areas. One of the main goals is to stop urban sprawl in Austria. Buildings are to be erected in existing settlement structures, settlement areas are to be mixed and public transport services are to be made available. Task 8 provides for increased use of housing subsidies and other instruments to steer investments for settlement development and spatial planning. In addition, more focus is to be placed on “smart cities” and the use of natural resources in order to create a climate-friendly urban and rural area.

An entire chapter is dedicated to climate change adaptation (p. 76). In 2012, Austria published a strategy for adaptation to climate change, whose measures have been implemented since then. The report does not go into further details regarding the activities implemented.

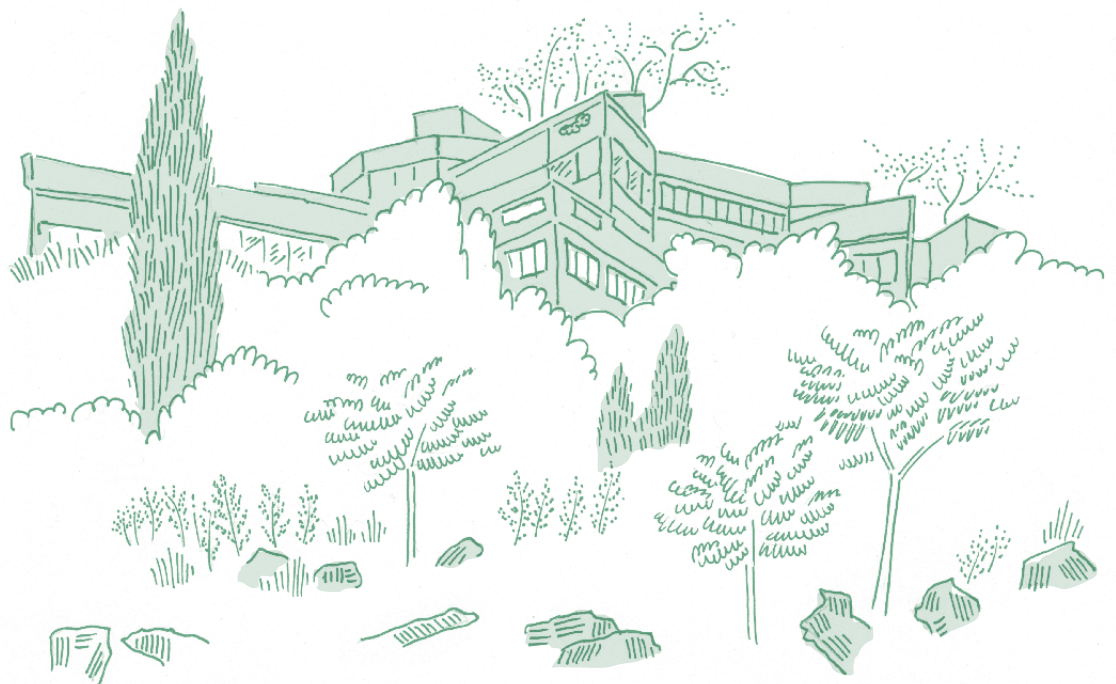
Austria's Climate and Energy Strategy is to be used as a prelude to a longer-term energy policy reorientation. In order to achieve the goals set out in the strategy, instruments such as subsidies or fiscal and regulatory measures are to be introduced. The strategy will first be evaluated by the federal government in 2023, taking into account EU requirements. If it is determined that Austria's target paths cannot be met, further options will be examined and implemented.

"Zero Net Artificialisation", France

(République Française, 2019)

France has set itself an ambitious goal with its net-zero land use. It is part of the biodiversity strategy published in July 2018. The document presents the theoretical basis through a review of the literature. Two decisive factors are at the forefront of achieving the target: the difference in land prices and the under-utilisation of already existing buildings.

On the basis of various statistical principles, the authors show that a reduction in the use of space is possible in the short term. Important factors here are structural densification and the modernisation of existing buildings.



In order to achieve net-zero land use, the authors name four areas of action. Knowledge about the dynamics of land use, the potential and the costs of renaturation should be improved. In addition, regulatory and fiscal tools should be better used to promote urban densification, modernisation and reuse of buildings. Finally, the authors note that sealing should be accompanied by the parallel renaturation of soils. In doing so, they place emphasis on compensation, i.e. that equivalent replacements should be created.

2030 Sustainable Development Strategy (2030 SDS), Switzerland

(Federal Office for Spatial Development ARE, 2021)

The strategy defines the subject areas that require special action and coordination between different policy areas in the implementation of the 2030 Agenda at the Swiss federal level. The goals and political measures relate to the following priority topics: sustainable consumption and production; climate, energy and biodiversity; equal opportunities and social cohesion.

The report identifies the challenges for each priority theme until 2030 and defines goals and strategies for federal policy. However, the document does not address concrete measures. These are determined in the various policy areas within the framework of the usual decision-making channels. In addition, the Swiss Federal Council adopts an action plan with supplementary measures and strategies in each legislative period.

The area of climate, energy and biodiversity in the 2030 SDS is of particular importance for CIPRA's Saving:Soils project. In subchapter 4.2.3 – which focuses primarily on the conservation, protection, restoration and promotion of biodiversity – it is mentioned that by 2030 soil consumption is to be reduced by one third compared to 2020. From 2050 onwards, no more net soil should be lost. The goal is, among other things, to create a functional ecological infrastructure and to use soil sustainably (p. 24 ff.). Concrete measures are not mentioned.

The 2030 SDS will be implemented and further developed in a four-year policy cycle. Monitoring, reviews and reporting as part of the country report, the interim evaluation of the 2030 SDS, its further development and the adoption of future action plans are interlinked and mutually dependent. At the international level, Switzerland participates in the UN's monitoring and review mechanism. Every four years, the Federal Council reports on the status of implementation of the 2030 Agenda in Switzerland in a country report, with the next due in 2022. The country report is addressed to the Swiss population and is submitted to the UN as part of the Voluntary National Review Mechanism. The MONET 2030 indicator system for monitoring sustainable development ensures the measurability of the 2030 Agenda target framework for Switzerland.

Swiss National Soil Strategy

(Federal Office for the Environment FOEN, 2020)

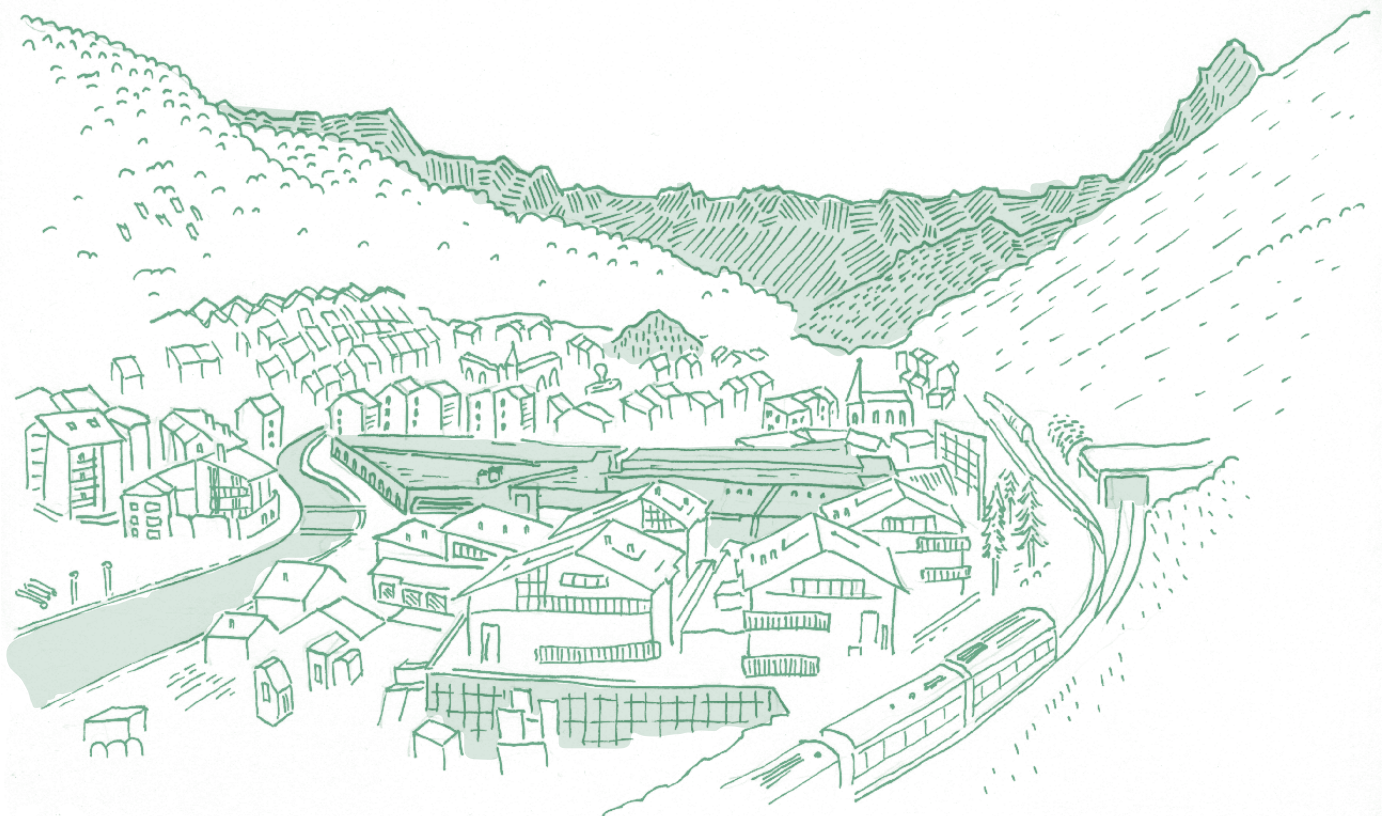
The strategy follows different approaches: it offers overarching goals with a time frame of 20 to 30 years. No net soil consumption after 2050 is one of the goals, which is also included in the Swiss 2030 Sustainable Development Strategy. In addition, the document defines targets in eight soil-specific areas with the greatest need for action. These include the use of soil in spatial planning, in agriculture and forestry, in urban areas and how to deal with polluted soils. In order to achieve the goals defined in the Soil Strategy, strategic guidelines are formulated in the areas of information, awareness-raising, implementation and legislation. The strategy does not address specific implementation measures, which will be dealt with at a later stage.

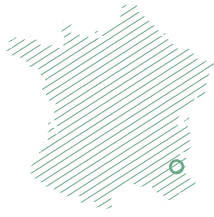
The Soil Strategy attaches great importance to soil consumption and land use. The strategy pursues a vision of soil use that preserves the functions of soils in the long term so that future generations can also benefit from the services provided by soils. The goals and visions mentioned in the document provide a direction in which Switzerland wants to develop further. The proposed measures and strategic directions must now be implemented at local and national level.

3

Good practices at local level

The topic of land saving is not only receiving attention in overarching strategies; practical implementation is also becoming increasingly important. The aim is to minimise further sealing, i.e. to avoid additional land use, to partially or completely unseal sealed areas (brownfields, vacant lots and empty lots) and to restore or improve soil functions. The improvement of soil functions can be achieved by means of soil loosening, erosion control, extensification of cultivation or humus build-up. In this context, the issue of compensation is of great importance. Compensation can mean that land is sealed in one place and unsealed or the site-typical soil functions are improved in another place. A prerequisite for compensation measures are soil information registers in which soil qualities and soil functions are described and classified. This chapter uses various and diverse examples from Germany, France, Austria and Switzerland to show how land saving can work in practice.





Using less soil

Puy-Saint-André in the French Alps has reduced the buildable municipal area by confiscating “ownerless” land, is saving space thanks to community housing projects and promoting the supply of local food by means of pasture associations.

FACT SHEET

What: Reduction of land consumption, promotion of participatory living, densification, participatory expropriation.

Who: Municipality of Puy-St-André/F & Atelier d’urbanisme et environnement CHADO

Where: Puy-Saint-André, France

When: since 2016

Transferability: Active citizen participation, community housing and farming projects, monitoring of land and vacancies can also be implemented in other municipalities.

In 2016, the municipality of Puy-Saint-André/F noticed that more than half of its land had no owners. The municipality then drew up a map of all these plots and, from 2017, began confiscating them on the basis of a “thirty-year rule”: it automatically confiscated plots whose owners had been dead for more than three decades and had no successors. People who wanted to benefit from the plots had six months to become active. Thus, the municipality reduced the buildable area in the local development plan from fourteen to four hectares and thus also significantly restricted land speculation. It implemented this change over two years through participatory meetings. In addition, the municipality is reducing land consumption by densifying housing. Several parties in community housing projects now share the same infrastructure. In addition, Puy-Saint-André/F created a pasture association that manages about 1,000 hectares of land and uses it for agricultural production. In this way, the surrounding villages can supply themselves with local food.

www.puysaintandre.fr



Remain rural and affordable

How the German municipality of Weyarn, close to the city, protects its soil, promotes affordable housing and creates a higher quality of life.

FACT SHEET

What: Land policy, preservation of rural areas, affordable housing, heritable building rights, decentralised trade concept

Who: Community of Weyarn

Where: Weyarn, Germany

When: since 1983

Transferability: The model is easily transferable to other municipalities in Bavaria/D. Legal provisions elsewhere vary.

Forward-looking urban planning, citizen participation, consistent land policy: Weyarn/D, a municipality south of Munich/D, checks with every major building project whether it is in line with the vision of remaining a rural area that was developed together with the population. For example, a petrol station near the motorway slip road was prevented from being turned into a car yard with truck parking. The municipality relies on the German “Erbbau” (heritable building rights) law to promote affordable home ownership for the local population. The right is valid for 99 years and can be extended for another 50 years; the annual leasehold payment for the land on which it is built is about two euros per square metre. This right is applied within the framework of the so-called “indigenous model”. By drawing up allocation guidelines, the municipality has adapted its local residents’ model to the EU legal requirements so as to continue to give priority to local young families and tradespeople. This benefits people who have been living in Weyarn/D for several years, do not yet own a plot of land suitable for building and whose family income does not exceed a certain amount. The municipality also only converts land owned by the municipality into building land and offers it on a leasehold basis so that businesses can settle or affordable housing can be created.

www.gemeinde-weyarn.de





Rebuild instead of build

The Austrian municipality of Zwischenwasser on the edge of the Rhine valley is rebuilding instead of building – and doing so at the highest architectural level.

FACT SHEET

What: Stop urban sprawl, promote architecture, joint design of public space, conversion of buildings

Who: Municipality of Zwischenwasser

Where: Zwischenwasser, Austria

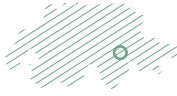
When: since the 1980s

Transferability: Other municipalities can also implement the methods and strategies of Zwischenwasser/A. The participation processes are also transferable.

When the building boom began in Vorarlberg in the 1970s, the municipality of Zwischenwasser/A chose a different path and laid the foundations for long-term orderly development: it corrected the zoning plan. Prospective farmland and building land became freehold areas for agriculture. In this way Zwischenwasser/A prevented urban sprawl and the creation of large built-up areas while introducing an exceptional building culture in the village. With the help of civic engagement, the community realised many renovation and conversion projects. The old alpine dairy was turned into a multi-purpose building, the community centre was renovated in a resource-saving way, and the kindergarten was awarded the “Klimaaktiv Gold” certificate, the highest national award for energy-efficient buildings. Since 1992, Zwischenwasser/A has also had an advisory board consisting of two alternating architects who advise the building authorities. Public design tasks and spatial development models are advertised as competitions and discussed jointly. The municipality has no building ordinance and therefore assesses each building project individually at its respective location. In addition, Zwischenwasser/A has been an energy-efficient “e5 municipality” since 1998, relies on renewable energy and promotes public transport and electric mobility.

www.zwischenwasser.at





Lively mountain village

The village of Valendas in the Swiss canton of Graubünden shows how citizens can revive their village architecturally and culturally.

FACT SHEET

What: Stop rural exodus, village revitalisation, public infrastructure, affordable housing

Who: “Valendas Impuls” Foundation

Where: Surselva, Switzerland

When: since 2007

Transferability: Associations can also initiate revitalisation processes in other mountain villages that are affected by emigration. Financing through a community foundation is also transferable. The legal framework conditions may vary.

In Valendas, Switzerland, a group of citizens has revitalised public infrastructure and village life with innovative concepts for transport, land use and renovation. In 2007, they founded the foundation “Valendas Impuls” and raised money to renovate several buildings. A historic building on the village square was thus converted into a hotel and restaurant and is now a popular meeting place for the community and employers in the village. The project “Faszinatur” also makes it possible to experience the rich fauna and flora from the Rhine Gorge up to the alpine peaks with hiking trails, excursions and an exhibition. All these activities generate direct added value for the local economy. Most recently, the foundation also became involved in the construction of a residential building with seven flats, a stone sculpture workshop and a multi-purpose room. The recipe for success in the revitalisation process was the commitment of people from all generations who developed common ideas and implemented them with determination.

www.archiv.stiftungvalendas.ch



Making vacancies visible

The “Plattform Land” draws attention to vacancies in South Tyrolean pilot communities and shows how they can make good use of empty properties.

FACT SHEET

What: Vacancies, municipal development, land management

Who: Plattform Land / Piattaforma per il rurale

Where: South Tyrol, Italy

When: since 2017

Transferability: The digital registration of vacancies can also be implemented in other municipalities. Participation processes in dealing with vacancies are also transferable.

Since 2017, the “Plattform Land” has been carrying out a pilot project on vacancy management in 19 selected municipalities in South Tyrol/I. In cooperation with the participating municipalities, they record vacant flats and commercial properties and make them visible on a digital map. The local population then has a say in what should happen to the vacant buildings. Through these opportunities for participation, the project creates awareness about how to deal with vacancies. “Plattform Land” is primarily committed to promoting inner-city development and redevelopment. It offers affected owners additional initial counselling sessions. In the future, even more municipalities are to be involved. All these steps serve the goal of reducing land consumption and increasing the attractiveness of the participating municipalities. “Plattform Land” shows that participatory processes are crucial in dealing with vacancy management. Cooperation with partners is particularly helpful.

www.plattformland.org



Shaping the community together

The German municipality of Ingenried shows how local residents and young people in particular can work together to develop a concept for village development.

FACT SHEET

What: Community development, inclusion of youth, temporary use of vacant municipal properties

Who: Municipality of Ingenried

Where: Ingenried, Germany

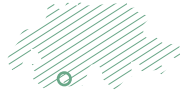
When: 2021–2022

Transferability: The process of citizen participation is also transferable to other municipalities.

Several buildings in the centre of the community of Ingenried/D are standing empty. The residents and the municipality worked out what should happen to them in a broad participation process, with working groups, surveys, meetings and digital participation opportunities. A youth council was founded so that young people between the ages of 14 and 22 could have a say in the local council. Together, all those involved drew up a concept for village development. The aim was to promote inner development, strengthen the village centre, create sustainable urban structures and preserve the village's identity. Among other things, a village park is to be created in the centre of the village. Other activities included an exchange on the topic of housing with students of "Social Innovation" and the local population. In the participatory action "Dorfmacher:in" (Village Makers), citizens submitted ideas for the temporary use of two communal properties. The winners were then able to temporarily use the vacant properties free of charge.

www.dorfentwicklung-ingenried.de





Affordable primary residences

Second homes notwithstanding, the municipality of Zermatt/CH wants to secure affordable housing for the local population.

FACT SHEET

What: Housing cooperative, affordable primary residences, second homes

Who: Municipalities of Zermatt/CH, Täsch/CH and Randa/CH

Where: Zermatt, Switzerland

When: 2014–2018

Transferability: The activities at regulatory and participatory level can also be implemented in other Swiss municipalities. Legal requirements elsewhere vary.

Zermatt/CH is a popular tourist destination and has a high proportion of second homes. Housing prices for primary residences are rising, and many can no longer stay in the region due to rental costs. To break this negative dynamic, the municipality of Zermatt/CH took regulatory measures to strengthen the construction of primary residences and to protect the conversion of existing ones into secondary residences. Complementing this, the neighbouring Swiss municipalities of Zermatt, Täsch and Randa joined forces in the “Model Project for Sustainable Spatial Development 2014–2018” and founded a regional cooperative to improve the supply of affordable housing in the inner Mattertal/CH. They managed existing properties to preserve primary residences and activated additional affordable housing. According to the rental regulations, only households with limited incomes were to benefit, provided they had their main residence in the inner Mattertal/CH and also worked there.

www.gemeinde.zermatt.ch





Climate-fit mountain regions

The “AdaPT Mont-Blanc” project uses a digital toolbox to show what measures are available for adapting to climate change at the spatial planning level.

FACT SHEET

What: Measures for local adaptation to climate change, spatial planning instruments

Who: Espace Mont-Blanc

Where: Savoie and Haute-Savoie/F, Aosta Valley/I and Canton Valais/CH

When: 2017 – 2021

Transferability: The various proposals for measures for local adaptation to climate change in the mountain area can be adopted by other regions. However, the legal framework conditions vary.

The Spatial Planning Toolbox is an online platform that provides mountain communities with tools to adapt to the climate crisis. These are described in detail on information sheets with draft regulatory measures at transboundary and regional level: How do you renovate buildings in the most sustainable and energy-efficient way? What materials can be used to create water-permeable surfaces? How can infrastructures in the high mountains be preserved in the future? The “AdaPT Mont-Blanc” project provides local decision-makers, entrepreneurs and citizens with innovative solutions for the increasing risks to nature and people. The online platform provides a detailed collection of best practices, experiences, scenarios and measures. The processes are also illustrated by four pilot projects in the areas of urban planning, sustainable construction, ski resorts and mountaineering. Interested persons can inform, exchange and advise each other in the digital toolbox. The online platform is constantly being expanded.

www.boiteaoutils.espace-mont-blanc.com



Stop to second homes

The Swiss popular initiative “Stop the rampant construction of second homes!” limits the proportion of second homes in municipalities in order to curb urban sprawl.

FACT SHEET

What: Second homes, urban sprawl

Who: Popular initiative
“Schluss mit uferlosem Bau von Zweitwohnungen!”
(Stop the rampant construction of second homes!)

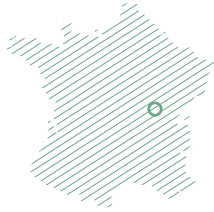
Where: Switzerland

When: 2012

Transferability: It is also possible to introduce new laws into the political agenda in other countries through popular initiatives. However, direct democracy takes different forms in the Alpine countries.

In 2012, the Swiss electorate voted to restrict the construction of second homes. The Federal Act on Secondary Residences (ZWG) has been in force since 1 January 2016. Since then, all municipalities are obliged to draw up an annual inventory of dwellings. In this inventory, they must indicate the number of all flats as well as the number of main residences. Municipalities with a share of more than 20 percent of second homes are generally no longer allowed to approve any new ones. However, there are exceptions: tourist flats in structured accommodation establishments or granny flats as well as second homes in protected buildings are permitted. However, there are no comparable data on second homes, as each municipality records its housing stock differently.

www.are.admin.ch



Ecological and community areas

With its ecological commons zone (“Zone d’écologie communale”, ZEC), the Free Quarter of Lentillères in Dijon/F invents a legal tool to legalise land occupation and thus prevent construction.

FACT SHEET

What: Legalisation of land occupation, new dedication category

Who: Quartier Libre des Lentillères

Where: Dijon, France

When: since 2010

Transferability: Other municipalities and cities can also benefit from the idea of an ecological commons zone.

In 2010, a group of demonstrators occupied, reclaimed and planted nine hectares of land in the city of Dijon/F to prevent it from being built on. Since then, hundreds of people have been using the resulting Quartier Libre des Lentillères. There are several community gardens, farms and small buildings. The residents maintain the public natural space and thus create a place for recreation, knowledge exchange and joint celebrations. Since 2017, they have been threatened with eviction. To prevent this, the residents would like to give the neighbourhood a legal status without losing the special multiple uses of the area. A working group founded for this purpose developed the new “dedication category” for the ecological commons zone (“Zone d’écologie communale”) on the basis of the existing legal foundations. In this area, housing is accessible to people of all social backgrounds, new buildings fit into the landscape and there are no parking areas. This new dedication category is now to be included by cities and municipalities in their zoning plan. A brochure summarises all the information.

lentilleres.potager.org





Roads on a diet

Carinthia/A relies on unsealing and is narrowing kilometres of federal roads. Now they are flanked by green strips and cycle paths.

FACT SHEET

What: Unsealing roads, habitat restoration

Who: Carinthian Road Construction Office

Where: Arnoldstein, Austria

When: since 2015

Transferability: Other regions and countries can also narrow and unseal their roads.

Remove asphalt, loosen soil, apply new soil: in Arnoldstein/A, the road construction office narrowed the B83 federal road by three metres in 2015. Today it is flanked by a green strip and a cycle path. The same has already happened on other roads. In this way, former asphalt deserts can once again absorb water and even serve as habitats. Lower speed limits allow narrower lanes and thus space for unsealing without restricting capacity. By driving at only 80 instead of 100 kilometres per hour, rural roads can be slimmed down by up to 20 per cent and the edges planted. One obstacle is the high cost: between 50,000 and 100,000 euros to unseal one kilometre of road. As the European leader in land consumption, the Austrian government has set itself the goal of reducing the approximately 13 hectares of soil sealing per day to 2.5 hectares by 2030. Unsealing projects like the one in Arnoldstein/A bring the country one step closer to this goal.

www.ktn.gv.at





The best idea wins

Kindergarten, after-school care, flats for senior citizens, surgeries, village shop and family café: how the German municipality of Schwabsoien revived a vacant inn in the village centre with an urban development competition.

FACT SHEET

What: Statute of pre-emption, ideas competition, support by regional management

Who: Municipality of Schwabsoien

Where: Schwabsoien, Germany

When: 2021 – 2022

Transferability: The idea of holding an urban planning competition in rural areas in order to find the best possible concept can be taken up by other municipalities.

The rural municipality of Schwabsoien/D held an urban planning competition to find the best solution for a vacant inn in the centre of the village and for an adjacent open space. For this purpose, the municipality commissioned three architectural firms to prepare building concepts. On the basis of a catalogue of criteria, they decided on a concept that they now want to realise. The design envisages several larger buildings and a central square as a meeting point. The buildings and open spaces should fit into the village structure. The redensification focuses on the social and cultural needs of the local population, such as education, leisure and recreation. A nursing home, a kindergarten, a school canteen, a village shop and a café are to be built. Vital for the success of the competition were the regional cooperation with the Auerbergland e.V. association, the financial and technical support of the municipality and a statute of pre-emption for the area in question.

www.schwabsoien.de

4 Measures and instruments

The following measures and instruments for reducing land use and for a more economical use of soil were identified in the transnational, national and regional strategies in Chapter 2, in the local practical examples in Chapter 3 and within the framework of six project workshops:

Legal measures and instruments

- ▶ Planning law measures: They contain directives and prohibitions for the dedication and use of land. There is a wide range of instruments here, such as land-saving targets, the determination of demand, the definition of settlement boundaries or settlement priority points, the designation of suitability and priority zones, the definition of minimum densities, contractual spatial planning and an active land policy, the definition of land quotas as well as land certificates. Other planning law instruments are local or regional development concepts, development planning and concepts for city centres, individual city quarters and business parks, which determine the number of vehicle parking spaces.
- ▶ Other legal measures that reduce land take include regulations for recreational or second homes and regulations concerning brownfields and vacant buildings.

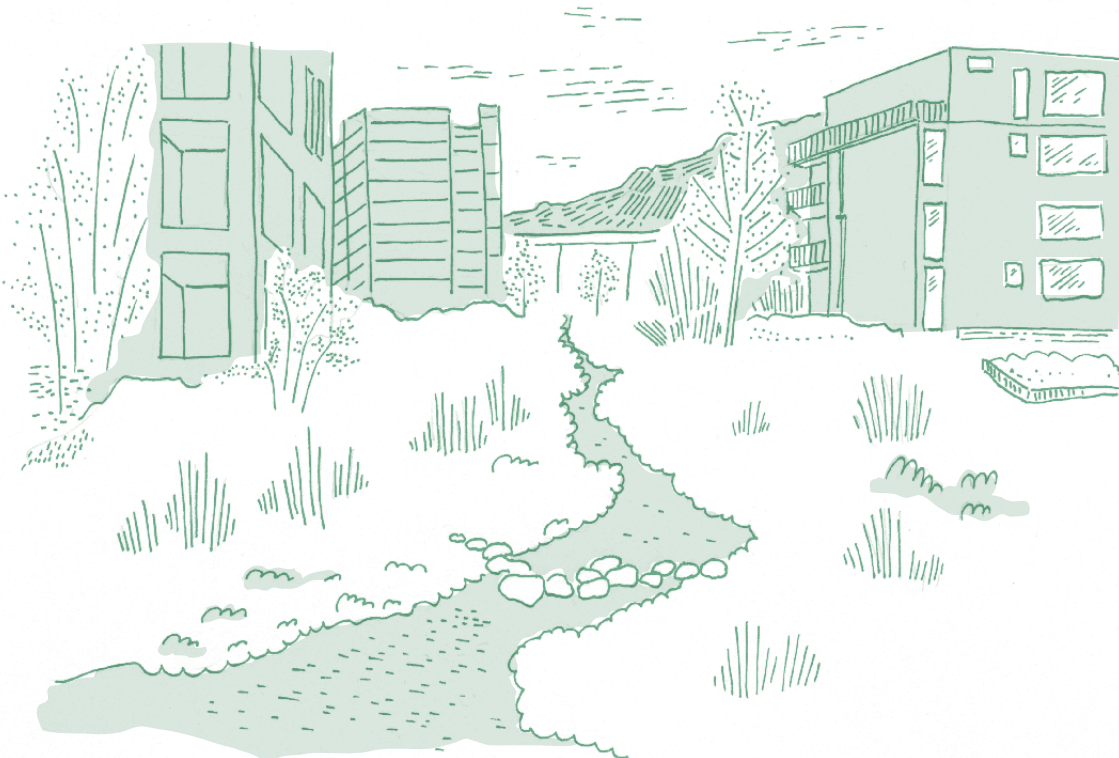
Examples:

- ▶ Demand assessment: the German Building Code (BauGB) prescribes proof of need for development on greenfield sites. In the past, this was not stringently required and was little monitored by the supervisory authorities. Since 2021, Bavarian municipalities are required to prepare a more standardised needs assessment for residential and commercial land as part of the state planning review. (Bavarian Ministry of Economic Affairs, Regional Development and Energy, 2021)
- ▶ Regionalised land use targets/quota: The national and federal land saving targets should be broken down to the regional and municipal level of action and operationalised. Only then can differentiated monitoring and target achievement be ensured. Numerous calculation proposals already exist for the allocation of land consumption quotas that, among other things, take into account population and economic development as well as the functions of central locations. (German Environment Agency, 2018)

- ▶ A possible next step based on this could be tradable land use certificates: the idea is to break down a national land-saving target to regional and municipal levels. Regional and municipal land use rights can either be consumed or traded. The possible advantage of this is that the avoidance of land sealing takes on an economic value. (German Environment Agency, 2019)
- ▶ The initiative “vau | hoch | drei” in Vorarlberg has formulated five demands for spatial development oriented towards the common good: 1. an expiry date for building land; 2. reallocation of undeveloped land with an infrastructure levy; 3. creation of a land fund; 4. municipalities to be given simplified access to land acquisition for exchange purposes in order to facilitate an active land policy; 5. stopping the earmarking of land for future development. (vau | hoch | drei, 2021)

Financial measures and instruments

Financial or fiscal measures and instruments offer incentives to use land more sparingly. These include the taxation of building land that has been dedicated but not built upon; tax incentives or compensation payments in the case of re-zoning; regional financial equalisation models (e.g. for business relocations); financial incentives and subsidies (e.g. support for land-saving building forms, subsidies for the preparation of development plans and for building renovation, as well as the promotion of unsealing projects).

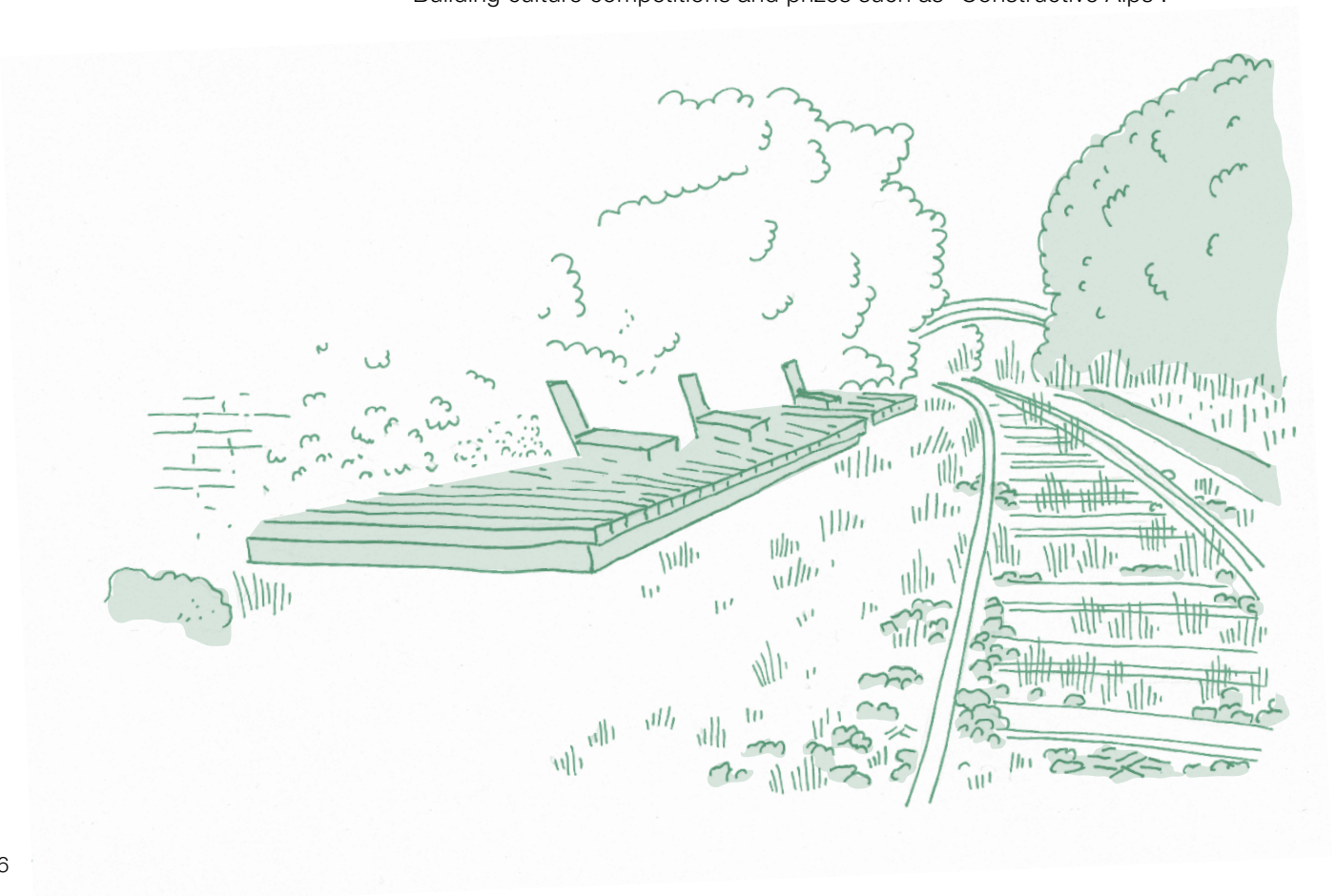


Awareness raising measures and tools

- ▶ Knowledge building and awareness raising: events for education and training of local and regional government staff, planning offices, NGOs, media, experts and the general public.
- ▶ Information and communication: this includes communication strategies for land saving projects and unsealing strategies at local and regional level.
- ▶ Positive framing for the importance of land saving.
- ▶ Good practices: these show that change is possible and provide valuable experiential knowledge.

Examples (Lintzmeyer, 2022):

- ▶ Information and capacity building at the municipal level: this includes a follow-up cost calculator for building projects, a database for land management or the Bavarian land-saving initiative. The latter includes information activities and advisory capacities by land-saving managers at the district governments.
- ▶ Funding and pilot projects, e.g. funding programmes for inner city development of the Urban Development Promotion and the Rural Development Administration (urban development, village renewal), model projects for spatial development (MORO), village core development projects under the EU LEADER programme.
- ▶ Communication with a positive framing: inner development is a characteristic of lively, innovative and responsible municipal policy. Inner development is more climate-friendly, ecological, land-saving and cost-saving than new projects on the outskirts or on greenfield sites.
- ▶ Building culture competitions and prizes such as “Constructive Alps”.



Measures and instruments for management and networking

- ▶ Establish and support organisations and structures that deal with the issue of land saving and unsealing. This also includes vacancy managing.
- ▶ Strengthen cooperation structures in local and regional development, e.g. neighbourhood management or cooperation platforms between administration, businesses and private initiatives.
- ▶ Strengthen cross-municipality coordination in zoning and land use planning to enable cross-municipality business parks.

Monitoring measures and instruments

- ▶ Establish monitoring concepts with appropriate targets and relevant indicators.
- ▶ Collect and harmonise data on land use, desealing, compensation measures, vacancies, changes in suitability and priority zones, use of subsidies.
- ▶ Create soil maps and update them regularly.
- ▶ Assess the effectiveness of individual measures and draw up proposals for their improvement.
- ▶ Strengthen the role of the supervisory authorities in checking whether the legal requirements are being observed.

The effectiveness of the various measures and instruments was assessed in the course of the preparations for Austria's new soil strategy. The highest effectiveness lies with a bundle of measures consisting of a quota system for building land, the setting of upper limits for building land reserves and the introduction of tradable land certificates. The definition of settlement limits coupled with a ban on the expansion of building land is also highly effective (Hiess et al., 2022).

5

Success factors and obstacles

From the analysis of the national and transnational strategies, good practices on land saving and the different workshops in the framework of the project, we can derive the following success factors and obstacles for a more economical use of land (Lintzmeyer, 2022) (Hiess & et al., 2022) (Alpine Convention, 2022):

Success factors

- ▶ There is no patent remedy for successful implementation. Success is often the result of a combination of suitable measures and innovative actors from different fields, which usually only develop their positive effects over a longer period of time.
- ▶ Clear legal frameworks, specifications at a higher level and monitoring of their implementation: if compliance with legal regulations is consistently and uniformly monitored at regional, provincial or state level, municipalities are more likely to make an effort to follow these specifications.
- ▶ Decision-makers at local level as “change agents with persistence”: courageous pioneers such as mayors or those active in civil society are a key success factor in the above-mentioned local and regional examples: They initiate creative rethinking processes, take action and will not let resistance stop them. Examples: Puy-St-André/FR, Hofheim Alliance/DE, Upper Werntal Valley/DE, Schleching/DE, Zwischenwasser/AT. What is particularly striking is that these municipalities have been pursuing the issue of land saving for more than five to ten years.
- ▶ Local engagement and participation processes: in most of the local success stories described above, the local population was actively involved in the projects and thus contributed significantly to the success of the implementation. Initiatives from the population, e. g. in the Quartier Libre des Lentillères in Dijon, France, or Bois de Chambaran (Center Parc project), can also lead to success.
- ▶ High problem pressure or “scarcity creates innovation”: in regions with high real estate prices and scarce building land, the reactivation of brownfields and vacant areas is easier than in areas with low land prices. High problem pressure supports targeted and “sharp” measures.
- ▶ A wide range of measures is needed: a combination of prohibitions and monitoring, (financial) incentives, competence development, cooperation management, awareness raising and communication. Public administration can play a pioneering role here.

- ▶ Success stories as evidence that change is possible, even under difficult conditions.
- ▶ Learning from the neighbours: if the neighbouring region successfully implements far-reaching measures to save land, it is easier to convince decision-makers that this can also be done in their region or municipality.

Obstacles

- ▶ Disproportion between ambitious land-saving goals and weak or non-existent instruments for their implementation: instead of a binding legal framework, the “principle of hope” dominates in many cases. Furthermore, there is a lack of suitable activation instruments with a steering effect, such as corresponding property taxes and building obligations for inner-city areas.
- ▶ Discrepancy between municipal planning sovereignty, responsibility and competence: municipalities enjoy far-reaching, legally anchored autonomy in their decisions on land use. At the same time, many municipalities do not sufficiently meet their responsibilities for the economical use of land resources. They often lack the institutional capacities and technical expertise to use the available instruments appropriately. In the clash between abstract objectives for land saving and individual local desires and constraints, the latter often have the upper hand.
- ▶ Municipal planning practices determine land take: many municipalities still adhere to conventional housing policies. This policy is still oriented towards the single-family house, does not require any building obligation and still designates new building areas outside the current settlement boundaries. In many municipalities, the paradigm shift towards rigorous land saving has not yet arrived.
- ▶ For economic reasons, municipalities are competing with each other to attract residents and businesses. This is clearly in contradiction to the goals of saving land.
- ▶ The real estate boom of recent years is still continuing. As long as investments in real estate are more lucrative than other forms of investment, the pressure on land will continue to increase.
- ▶ Too much space for car traffic: the space requirements for car traffic are not questioned enough at communal level.

6 Conclusions

The current strategies at European and national level as well as the report of the Alpine Convention from Chapter 2 provide a good overview of the overarching goals and courses of action on the topic of land saving. Most of the countries mentioned in the report have set themselves ambitious goals: they want to meet the first intermediate targets by 2030; they aim to reach the net-zero target by 2050. Most of the strategy documents were published between 2018 and 2021. Implementation has therefore only been underway for a short time. It will be important to review the implementations through appropriate monitoring and accompanying evaluations in order to learn from and improve results as quickly as possible.

The local and regional examples from Chapter 3 show that careful use of land is possible. However, they also show that this requires a suitable framework, innovative and courageous actors and a great deal of time. In view of the current climate and biodiversity crisis, we do not have this time.

It must therefore be a matter of speeding up the processes, quickly creating the planning and financial legal framework conditions and vigorously pushing ahead with concrete implementation projects.

Important findings of the project:

- ▶ None of the quantitative targets in the overarching strategies is legally binding. They are merely orientation values without consequences in case of noncompliance or non-achievement.
- ▶ It is striking how little evidence-based the soil debate is. No one can say exactly what effects the individual measures have. There are hardly any analyses of the soil policy of recent years and its overall impact. For this reason, significantly more attention should be invested in the topic of impact assessment.
- ▶ The topic of “land use in the context of the energy transition” has not yet received the attention it deserves, despite the high potential for conflict in the Alpine countries.
- ▶ The topic of desealing is still in its infancy, and implementation projects are still in short supply.

There is a great need for development and action in the aforementioned topics. The key actors in the Alpine Space, from the local level of the municipalities via the regions to the Alpine states and the transnational institutions and cooperation formats (Alpine Convention, Alpine Space Programme, EUSALP and their technical committees and working groups), are called upon to address these issues more robustly and actively support their implementation.

7

Further information

EU Ground Deal for Europe Mission

- ▶ Website: ec.europa.eu/mission-soil
- ▶ Implementation plan: ec.europa.eu/info/files/eu-mission-soil-deal-europe-implementation-planen
- ▶ Factsheet: op.europa.eu/en/publication-detail/-/publication/90779d7a-227c-11ec-bd8e-01aa75ed71a1
- ▶ “Living Labs” Factsheet: op.europa.eu/en/publication-detail/-/publication/90779d7a-227c-11ec-bd8e-01aa75ed71a1/language-en/format-PDF/source-232536601
- ▶ Video: youtu.be/3hPIZqwvhhM

Alpenkonvention

- ▶ Alpine Climate 2050: alpineclimate2050.org
- ▶ The Alpine Soils Platform: alpinesoils.eu

Other

- ▶ EU Platform for Urban Greening: thegreencities.eu
- ▶ I4A Toolbox with information on projects, best practices, laws and publications on soil protection in the Alpine Space: www.impuls4action.eu/de
- ▶ Brochure “Soil wants to breathe – from sealing to unsealing in the front garden”: www.abwasser-beratung.nrw/medien#heading1
- ▶ Infrastructure cost calculator (Office of the Provincial Government of Lower Austria, Regional Planning and Overall Transport Affairs): www.raumordnung-noe.at/index.php?id=148
- ▶ Changements d'utilisation des sols: notre-environnement.gouv.fr/rapport-sur-l-etat-de-l-environnement/themes-ree/defis-environnementaux/limites-planetaires/les-9-limites-ecologiques-de-la-planete/article/changements-d-utilisation-des-sols

8

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