

Green economy in the Alpine region



Practical guide

Efficient land use in the Alpine region



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WHY? What does efficient land use have to do with the Alps?

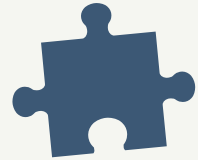
A green economy is synonymous with the careful and sustainable use of all natural resources, whereby non-renewable or non-multipliable resources play a special role. One such resource is land. How we deal with this natural resource – whether at local, regional or international level – plays a decisive role. According to the WBGU's Annual Report 2020¹, land resources are under greater pressure than ever before. The availability of land is key to tackling the three key challenges of the future – food security, climate protection and preserving biodiversity. Efficient and sustainable land use is therefore of key importance.

„Our recommendation to all federal governments was and is to enshrine land use policy goals in legally binding texts. In our trial project, trading in land certificates proved very promising.“

– Prof. Dr. Dirk Messner, President of the Federal Environment Agency

More and more people are advocating the economical use of land so that future generations are not disproportionately impaired in their development opportunities. The issue of land consumption – or more correctly new land use for housing, commercial buildings and transport infrastructures – is also reflected in (sustainability) targets at various government levels, from the United Nations and the European Union to national and regional targets and guidelines, as shown by the following examples.

The UN's Sustainable Development **Goal 11 “Sustainable Cities and Human Settlements”** calls for sustainable land use. This also means limiting the growth of settlement and transport areas.



Another international target for land consumption is the EU's so-called **net-zero-hectare target for 2050**³, which many countries have already adopted in their national targets.

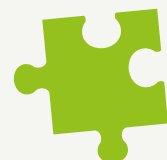


In its protocols, the **Alpine Convention** calls for the economical use of the many different resources of the Alpine region. For example, Article 1 of the Protocol on Spatial Planning and Sustainable Development states “(c) the economical and environmentally compatible use of resources and space” as a goal. Article 9 (3) Settlement Area states that “(a) Appropriate and economical delimitation of settlement areas, including measures to ensure their actual development” are to be included in spatial development plans and programmes. Article 7 (1) of the Protocol on Soil Protection also calls for the economical use of land.



The implementation pathways of the **Alpine Climate Change Target System** address the issue of land use. For example, the action field spatial planning refers to “creating awareness of the link between climate action and spatial planning by emphasizing the benefits of avoiding urban sprawl for mitigating the impacts of climate change.”

In the action field on soil, the priority is on “establishing pan-European guidelines for reducing soil use and sealing”.

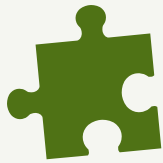


¹ Wissenschaftlicher Beirat der Bundesregierung Globale Umweltveränderungen (2020): Landwende im Anthropozän. Von der Konkurrenz zur Integration. Hauptgutachten. Available online at https://www.wbgu.de/fileadmin/user_upload/wbgu/publikationen/hauptgutachten/hg2020/pdf/WBGU_HG2020.pdf, (last accessed on 01.02.2022).

² <https://www.asg-goe.de/pdf/LR0121-Interview-Messner.pdf> (letzter Zugriff 02.09.2022)

³ Roadmap to a Resource Efficient Europe (COM(2011) 571)

Examples of **targets at national and regional level** include the goal of reducing new land consumption to less than 30 hectares/day by 2030 in the German Sustainability Strategy and net-zero new land use by 2050 in the Climate Protection Plan, as well as the guideline of 5 hectares/day for the state of Bavaria, enshrined in the Bavarian State Planning Act as of 2021.



The Progress Report on the Green Economy in the Alpine Space⁴ recommends the more efficient use of land as a green economy measure that can be directly implemented by a municipality. While such measures must be taken at local level, they can be supported and promoted by higher administrative levels. The report of the Alpine Convention's Working Group on Soil Protection⁵ (Alpine Convention 2020b) deals not only with qualitative soil protection but also with land consumption (= quantitative soil protection), comparing land consumption data with land consumption targets at regional or state level.

Despite all the objectives at higher political levels, a substantial share of the responsibility for implementation on the ground lies with municipalities, landowners and, generally speaking, with everybody using the land for his or her interests.

This practical guide is therefore intended to show key local players various ways in which a sustainable approach to using limited land can be implemented and where further information and support can be found.



⁴ Alpenkonvention 2020: Green Economy Progress Report. Green Economy in the Alpine Convention.

⁵ Alpenkonvention 2020b: Economical and prudent use of soil in the Alps.

WHAT? The problem of land consumption in the Alpine region

Limited permanent settlement area and land competition

Due to the topography, areas suitable for settlement – so-called permanent settlement areas⁶ – are relatively scarcer in the Alpine region than in the lowlands. Natural hazards such as floods, avalanches, mudflows and landslides as well as climatic restrictions in higher altitudes further limit the areas suitable for permanent settlement. At the same time, the most fertile soils are also located in these permanent settlement areas, leading to competition for land between settlements and transport infrastructure on the one hand and agriculture on the other. Further demand for land comes from the preservation of biodiversity and nature conservation, tourism and recreation, and renewable energy sources. Last but not least, there is increasing demand for land in order to adapt to climate change, e.g., for the construction of dams, flood polders and other structures.

In some cases, however, different uses can be united. Examples include the agricultural use of flood polder areas, open-space photovoltaic parks, or football pitches able to temporarily store rainwater in the event of heavy rain. One solution to this competition for land is thus to cleverly combine such different uses. However, this poses challenges to our traditional planning systems. The German government's Scientific Advisory Council⁷, for example, sees a solution to this competition for land in an integrated approach combining different goals and, where possible, achieving them in one and the same area.

Loss of soil functions

In addition, the resource land is closely linked to the resource soil, which is also very limited and can only be replenished over centuries or even millennia. All demands for land that lead to a degeneration or even loss of soil limit the possibilities for future generations to use the soil. Soil fulfils a variety of functions, such as food production, filtering, storage, CO₂ sinks, habitats and as an archive. Built predominantly on agricultural land, settlement and transport areas in particular result in serious losses of soil quality and soil functions, as a large proportion of the soil is removed, deformed, sealed or built over. For this reason, too, limiting land take is an essential sustainability goal.

6 Cf. "Figure 2.2.2-1 Share of permanent settlement area within the Alpine Convention area per municipal area" in the 6. Alpine Status Report (Alpine Convention 2017): Greening the Economy in the Alpine Region. Report on the State of the Alps. Alpine Signals - Special Edition 6.

7 www.wbgu.de/de/publikationen/publikation/landwende (last accessed on 29.08.2022)

HOW? How can efficient land use be implemented in practice?

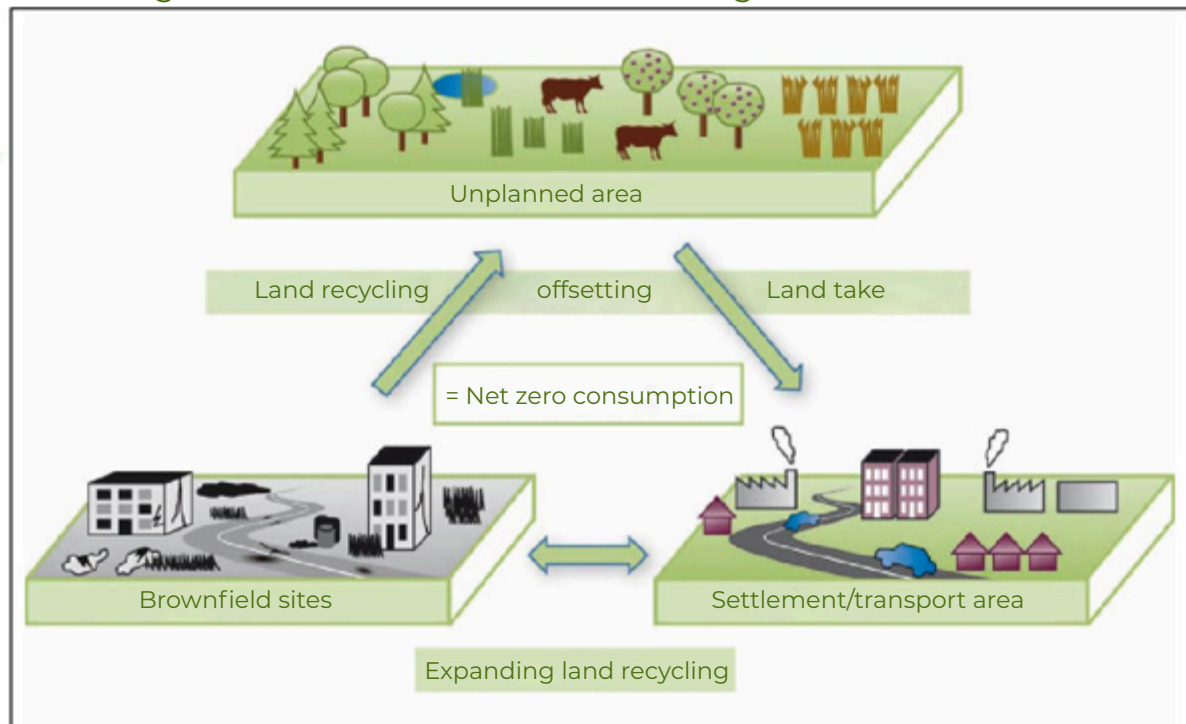
Even though municipalities bear great responsibility for efficient land use, responsibility is shared with other administrations through higher-level regulations and plans. A number of framework conditions can also be changed at these higher levels to make it easier for municipalities to reduce their land consumption.

Establishment of a circular land management system

Achieving the net-zero-hectare target for land consumption by 2050 – a target adopted at higher levels – means establishing a circular land economy: If a location loses its settlement or transport function and thus becomes vacant, it should

preferably be reused instead of developing a greenfield site. If no subsequent use makes sense (e.g., due to population decline, plant closures), buildings can be demolished, with at least part of the soil functions being restored by unsealing and renaturation measures. These redeveloped areas are then included in the land balance as negative values, offsetting land take elsewhere. In this way, the net-zero-hectare target for land consumption becomes achievable. But even in this case, the soil remains impaired, as even restored soil is anthropogenically deformed and not equivalent to unmodified near-natural soil in all its functions.

Reducing land take: the net-zero-hectare target



SRU/UG 2016/Abb. 4-12

Figure 2: Net-zero-hectare target; source: (Sachverständigenrat für Umweltfragen⁸ 2016 S.284)

⁸ Sachverständigenrat für Umweltfragen (2016). Umweltgutachten 2016 Impulse für eine integrative Umweltpolitik. Hg. v. Sachverständigenrat für Umweltfragen.

Land allocation

To provide incentives for municipalities to re-develop and reallocate land, a land quota system could be established. This would limit the amount of land available for new development for settlement and transport purposes, with land only made available for development to a defined extent (though able to be swapped between municipalities according to their demand). This is a meaningful approach on a national or regional level. So far, however, such an approach has only been tested in a simulation game⁹ but not in practice.

Financial incentives and support programmes for inner-village/-town development

Inner-village/-town development requires a high level of (financial) commitment on the part of municipalities, e.g., for the systematic survey of development potential, the development of concepts for handling vacant properties, for advising owners on conversion and subsequent uses, etc. It therefore often seems cheaper for municipalities, at least in the short term, to designate new building land rather than to give built-up land, brownfield sites and vacant properties a new lease of life. Furthermore, greenfield planning is often quicker to implement and requires less effort on the part of administrations and policy-makers than the planning and restructuring of existing sites.

In addition, citizen demand for greenfield plots on which to build new homes is usually greater than for vacant sites, since the costs for owners are easier to calculate than for renovating or converting existing buildings.

Financial incentives can help here in establishing at least cost parity between the renovation, conversion or even demolition of properties not considered as candidates for renovation and the development of new greenfield sites. Examples of such support programmes include urban and rural development subsidies in Bavaria.

Reduce negative fiscal incentives

Many German municipalities currently find it lucrative to attract new residents and businesses, as both local business taxes and per capita allocations of tax revenues are a major source of funds for them. If one municipality stops designating building land, while its neighbours continue to do so, the former is at a disadvantage in terms of these revenue sources. Changes in the way municipalities are funded are needed to counteract this.

Intermunicipal cooperation

Individual municipalities wanting to give priority to inner-village/-town development over greenfield development often worry that private investors and commercial enterprises may shift their attention to neighbouring municipalities where greenfield sites remain available. In the interest of efficient land use, it is therefore advisable to cooperate with neighbouring municipalities, actively pursuing inner-village/-town development together and setting common goals. This is also advisable against the background that the total number of private investors and commercial enterprises in a region is limited, at least outside high-growth centres, and cannot be increased at will. Competition between municipalities can also lead to undesirable effects: While one municipality may grow through designating favourable greenfield land, neighbouring municipalities may have to reckon with vacant properties and brownfield sites. However, this first municipality may find itself confronted with higher long-term maintenance costs for technical and social infrastructures, without the guarantee of new settlements and local business tax revenues. It is not uncommon for developed greenfield building plots to be acquired merely as a (speculative) financial investment, remaining unbuilt for longer periods of time and thus not generating any income for a municipality.

⁹ UBA (2019) (Hrsg.): Report in German on the simulation: Modellversuch Flächenzertifikatehandel. Realitätsnahes Planspiel zur Erprobung eines über-regionalen Handelssystems mit Flächenausweisungszertifikaten für eine begrenzte Anzahl ausgewählter Kommunen. Abschlussbericht. UBA Texte 116/2019. Dessau-Roßlau.

Practical example: Intermunicipal Business Settlement (INKOBA) in Upper Austria

Intermunicipal cooperation is a basic spatial planning principle in Upper Austria, which also applies to commercial and industrial sites. The cooperating municipalities form an association that jointly searches for and develops sites, while sharing costs and revenues according to a fixed key.¹⁰ This means that the designation of such sites can be controlled on an intermunicipal basis. Where the designation of new sites is based on demand, greenfield sites may be designated, albeit without each municipality competing with its cooperation partners and preventing an unfillable over-designation of sites.

Qualified support

Inner-village/-town development is complex and requires comprehensive knowledge. This in turn needs to be continuously developed in order to meet new requirements, such as adaptation to climate change. Especially in small municipalities with scarce human resources, regional agencies can provide important support through specialized services (e.g., thematic qualification, guidelines, but also concrete services).

Planning laws

The economical use of land as a resource should also be strengthened through planning laws and higher-level development programmes. There are already many examples of this in the Alpine region: In Switzerland, the Spatial Planning Act was amended to the effect that all municipalities may only stockpile as much designated building land as will be needed in the next 15 years. This requires each municipality to document its building land stock and to calculate the expected demand according to a standardised formula. Both values are checked against each other and, in the event of a building land surplus, the land not required must be redesignated as non-building land.

In Tyrol in Austria, the highest-yielding soils are protected as agricultural areas by planning laws, meaning that they cannot be used for settlement and transport purposes, or only in certain exceptional cases.

¹⁰ <https://standortoee.at/inkoba> (last accessed on 29.08.2022)

AND NOW? What steps can a municipality take to use land more efficiently?

The global, national and regional goals must ultimately be implemented at local level. In this context, conflicts of objectives quickly arise. These concern not only the above-mentioned framework conditions, but also decades-old local habits, from the behaviour of politicians and administrations to the land demands of businesses and the housing requirements of the population.

Create a basis for decision-making – Identify potential and needs

The first and most important step when taking decisions for efficient land use is to conduct a) a systematic survey of all development opportunities within the existing settlement areas, and b) a realistic assessment of future demand. The two are, then compared. Mayors and planning authorities often have a good overview of gaps between buildings or of larger vacant premises. However urban development potential such as infilling within existing developments, farmyards no longer used for agriculture, industrial brownfields and partially vacant premises are less known. It is a good idea to systematically record such potential and to regularly update these surveys. In municipalities where detached houses predominate, the age structure of residents should be analysed, thereby identifying future vacancy risks at an early stage.

Such comprehensive knowledge of (partially) vacant plots and infilling possibilities constitutes a valuable basis for developing an urban development strategy.

Practical example: land management database

In Bavaria, a land management database is available to all municipalities free of charge, enabling them to systematically record and manage their urban development potential. Options include owner surveys, a monitoring tool, a tool for calculating medium-term demand for housing plots, and a tool box for setting up a property exchange.

Make the most of municipal planning sovereignty – from supply-oriented to demand-oriented planning

Out-migration concerns, especially relating to young people and families, but also to companies, lead many municipalities to designate land as reserve plots and to develop them, often at their own expense. This development work often involves land owned by private owners, without the municipality previously acquiring it. Even after the land has been developed, a considerable share of the land thus often remains in the hands of the original landowners. In the past, such privately owned and fully developed plots often remained vacant for decades as the owners had neither a need to develop them nor a willingness to sell. This leads to the so-called building land paradox: there is sufficient developed building land available which is not used for construction while at the same time demand for land exists which municipalities want to meet. This generates pressure to designate new building land, which municipalities usually succumb to.

To counteract such situations in the future, new designations should be demand-oriented and either acquired directly by the municipality – at least on a temporary basis – or issued with a building permit requiring the intended development to take place within a few years. If no development takes place, the permit should be reviewed and the plot redesignated if necessary.

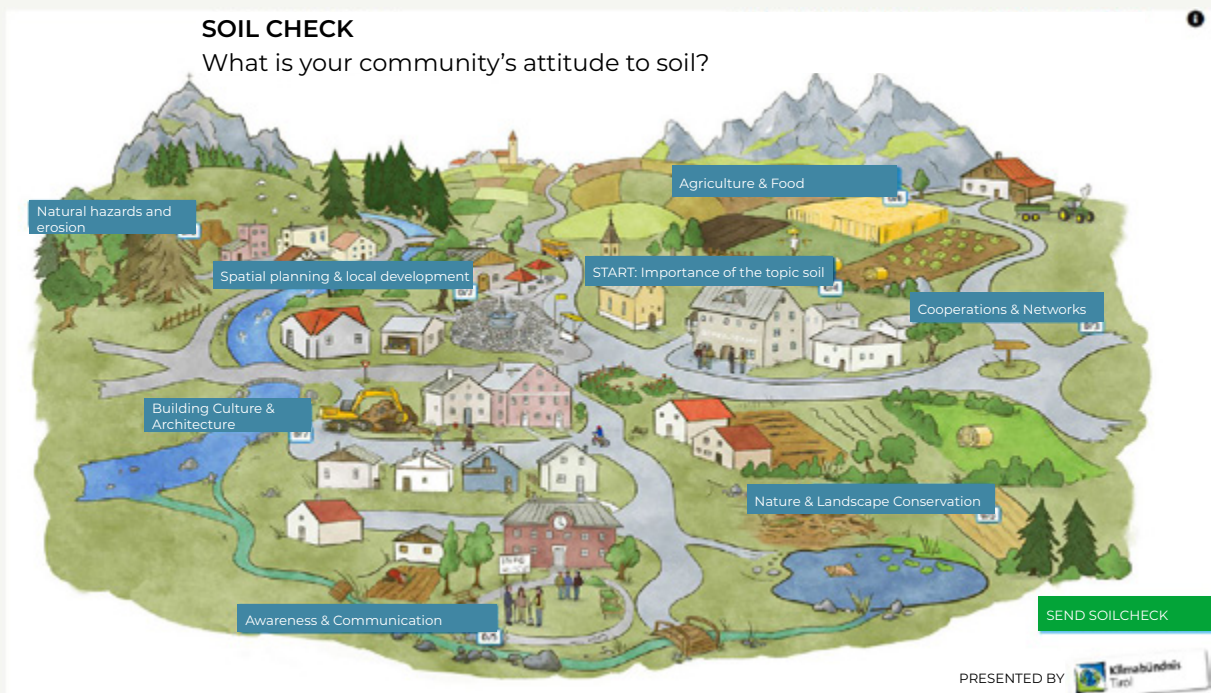
Practical example from Austria: the online tool “Bodencheck”¹¹ and the “Training course for municipal planners and surveyors”

Climate Alliance Austria offers municipalities an online land use check, where participants answer simple questions to assess for themselves where their municipality stands in terms of land saving, spatial planning and the revitalisation of village/town centres, building culture, soil protection and other topics related to soil protection.

Furthermore, an annual four-day training course is offered for municipal planners and surveyors, in which the topics of spatial planning, revitalization of town centres versus extending town limits (urban sprawl), land consumption and cost explosions are handled. Furthermore, the relationship “healthy soil - healthy climate - healthy people” is examined in more detail.

Acquire land and contact landowners

A municipality's scope of action is limited by the property rights of landowners. When a municipality designates land as building land, this is usually associated with an increase in the value of the land in question. If the municipality takes ownership of as much designated land as possible, it can control the development thereof and in turn that of the municipality itself better than if the land remained privately owned. In the past, building land often remained undeveloped, in some cases for decades, because the owners saw no need to develop it, instead regarding it as a capital investment. It is very difficult for municipalities to activate such land without the willingness of the owners. Therefore, a good solution is for a municipality to acquire land prior to planning or in the course of planning and then pass it on to those willing to build. The latter then undertake to build by a set deadline. Further options for activating land in the most resource-saving way possible can be found in the brochure published by the Federal Environment Agency¹².



¹¹ <https://bodencheck.klimabuendnis.at/de/survey/s/bodencheck> (last accessed on 31.08.2022)

¹² UBA (2021): Stadtplanung und Stadtentwicklung als Hebel für den Ressourcen und Klimaschutz. Kommunale Instrumente, Fallbeispiele und Potenziale zur Reduktion der Ressourceninanspruchnahme. 2. Auflage. Dessau-Rosslau.

Where municipal land acquisition has been neglected in the past and undeveloped building land is available, contact should be sought and maintained with the owners in order to designate these areas as building land as quickly as possible. In such cases, but also in the case of vacant properties, systematic owner surveys are a very good way of finding out owners' plans and promoting activation.

Practical Example: Owner Survey Kempten (Bavaria)

In 2020, the Bavarian town of Kempten systematically surveyed potential for urban development. To find out which owners of vacant and empty plots were willing to activate their potential, they were systematically contacted in late 2021. They received a short questionnaire designed to determine, among other things, their willingness to sell or their interest in investing and building. They were also asked whether they needed advice, e.g., on building laws, marketing or ideas for development.¹³

Highlight the advantages of inner-village/-town development

Saving land means keeping a municipality's development within its existing settlement boundaries, i.e., promoting inward development. Alongside its structural significance, such development also promotes a healthy community, preserving cultural landscapes, such as orchards and pastures on the outskirts of villages and offering village centres with housing and shops for all ages.

Practical example: What does my building land cost? Follow-on cost calculator

The development of building land costs money, not only in the short term in the form of technical infrastructure such as utility networks and roads, but also in the long term in the form of maintenance costs. These long-term costs are often not taken into sufficient account. The follow-on cost calculator helps to better estimate these costs. It targets three situations: new housing construction, decommissioning and possible demolition, and changes to existing buildings. The tool is available free of charge from the state of Bavaria.¹⁴

¹³ www.all-in.de/kempten/c-lokales/innenentwicklung-stadt-kempten-befragt-eigentuemer-von-bauluecken-und-leerstaenden_a5137157 (last accessed on 29.08.2022)

¹⁴ www.lfu.bayern.de/umweltkommunal/flaechenmanagement/folgekostenschaetzer/index.htm (last accessed on 05.09.2022)

Making practical examples visible

In almost every village or town, or at least in every region, there are many practical examples of inner-village/-town developments and the subsequent use of brownfield or vacant sites. These examples are not always visible to everyone, although they could serve as local role models. In many cases, no great effort is required to present these examples to the public, for example through a short report in the local newsletter or on the village website. There are also other formats requiring more effort, such as guided tours to successful (housing) projects or a village development day, during which this topic is promoted via a variety of activities.

Practical example: densipedia.ch

“densipedia.ch is the knowledge platform for urban development and densification in Switzerland. It highlights urban development examples assessed by experts and explains technical terms and spatial planning tools used to promote urban development and curb urban sprawl.”¹⁵

This website disseminates knowledge and tools related to urban development, while also presenting good practice examples from Switzerland.



Website that shows good examples and films on inner-village/-town development – The content is offered in German and French.

Jointly strengthen urban development – cooperate with neighbouring communities

Reaching agreement with neighbouring municipalities to cooperate on future urban development helps reduce competition for new businesses and residents. In addition, urban development and land conservation are long-term tasks requiring permanent administrative structures. In the case of small communities, it makes sense to establish these structures together with neighbouring communities, thereby generating synergies. For example, urban development managers can act on a supra-local basis, or the topic can be jointly represented in public.

Attract interest in alternative forms of housing

Even though land consumption is now perceived as an issue outside specialist circles, demand for building plots on the outskirts of towns for construction of new detached houses remains high in many places. In some cases, it has even increased in the wake of the Corona pandemic. Yet forms of housing other than houses offer advantages often less perceived by the public, ranging from cost savings to social inclusiveness.

¹⁵ www.densipedia.ch (last accessed on 29.08.2022)

Practical example Germany: Living differently in Kirchanschöring

The “Anders Wohnen” model project in the Upper Bavarian municipality of Kirchanschöring (population approx. 3,600) is an example of a rural community in which demand for building land is very high due to the attractive countryside and the good rail connections to Salzburg and Munich. To counter growing development pressure and at the same time prevent urban sprawl, new housing concepts and alternatives to detached houses were developed in an intensive citizen participation process aimed at increasing acceptance among the population. As a first step, the municipal council organised an excursion to Vorarlberg in Austria to visit outstanding reference projects. The next step was an in-depth study of the town’s historical development, an inventory of buildings and open spaces, their uses and key statistical data.

With the aim of not further increasing per capita settlement area, urban development scenarios and exemplary test plans for potential areas within the village were developed. These were visualized for local joint building ventures, while the municipality applied for pre-emptive rights for the properties concerned. These plans were accompanied by citizen workshops, intensive building consultations and an Internet platform. As a first reference project, three apartment buildings were built in the centre of the village of Hipflham. The project developer was the municipality. After temporarily acquiring the properties in question, it constructed the buildings. It then sold the apartments to the later owners. The project has since become a model for rural development in Bavaria.



Source: Ländliche Entwicklung in Bayern¹⁶ (2020)

¹⁶ Ländliche Entwicklung in Bayern (Hrsg. 2020): Wohnen in Kirchanschöring.

WHO? Who and what could promote efficient land use?

Efficient land use can be promoted in a variety of ways. In Bavaria, smaller municipalities can receive funding from Rural Development Agencies, e.g., for intra-municipal cooperation or for the systematic initial survey of internal development potential. Cities and larger municipalities receive a variety of subsidies and support through urban development funding. The regional planning offices in Bavaria employ officials tasked with promoting ways of saving land who offer their support to municipalities in the field of urban development. Moreover, the state government of Bavaria offers a website dedicated to spatial planning funding sources¹⁷.

At federal level, Germany's Federal Environment Agency offers an interactive map-based information tool that provides information on past land consumption for each municipality and shows the amount of new land that each municipality can develop in order to achieve the land-saving goals of the sustainability strategy. This information is also available for district, regional and state administrations.¹⁸

¹⁷ www.flaechensparoffensive.bayern/werkzeuge/foerdernavi/ (last accessed on 29.08.2022)

¹⁸ Kommunalen Flächenrechner (uba.de)

WHERE? Where can I get more information and support?

The following links will take you directly to the relevant competence centres, information services and guides that can help you along the way.

International

<https://www.alpconv.org>

<https://alpineclimate2050.org/pathways/spatial-planning/pathway-1/>

<https://www.eea.europa.eu/data-and-maps/indicators/land-take-3>

<https://www.oecd.org/gov/governance-of-land-use.htm>

<https://www.cipra.org/de/news/flaechen-sparen-boden-retteN>

CIPRA- Brochure „Save land, save soils“: https://www.cipra.org/de/cipra/international/projekte/laufend/flaechen-sparen/ftw-simplelayout-filelistingblock/eureni-en-web.pdf/@@download/file/Eureni_en_final.pdf?inline=true

Soil protection in the Alps: <https://alpinesoils.eu/>

Germany

<https://www.umweltbundesamt.de/themen/boden-landwirtschaft/flaechensparen-boeden-landschaften-erhalten>

<https://www.umweltbundesamt.de/daten/flaechen-boden-land-oekosysteme/flaechen/siedlungs-verkehrsflaechen#anhaltender-flaechen-verbrauch-fur-siedlungs-und-verkehrszwecke->

<https://www.bmuv.de/themen/nachhaltigkeit-digitalisierung/nachhaltigkeit/strategie-und-umsetzung/flaechenverbrauch-worum-geht-es>

<https://www.aktion-flaeche.de/>

www.flaechensparoffensive.bayern

<https://www.stmuv.bayern.de/themen/boden/bodenschutz/doc/arbeitssh.pdf>

<https://www.lfu.bayern.de/umweltkommunal/flaechenmanagement/index.htm> Sammlung

Praxisbeispiele: <https://www.stmuv.bayern.de/themen/boden/flaechensparen/bestpractice/index.htm>

<https://www.landesentwicklung-bayern.de/flaechenspar-offensive/>

France

<https://www.cerema.fr/fr/actualites/zero-artificialisation-nette-forts-enjeux-leviers-action>

<https://www.strategie.gouv.fr/publications/objectif-zero-artificialisation-nette-leviers-protger-sols>

Video: <https://youtu.be/wnBlkHJr4hs>

Italy

<https://www.isprambiente.gov.it/it/attivita/suolo-e-territorio/il-consumo-di-suolo>

Austria

<https://www.oerok.gv.at/raum/themen/flaechensparen-flaechenmanagement-und-aktive-bodenpolitik>

https://www.oerok.gv.at/fileadmin/user_upload/Bilder/2.Reiter-Raum_u_Region/1.OEREK/OEREK_2011/PS_Flachsparen/OeROK-Empfehlung_56_Flaechensparen_Internet.pdf

Collection of practical examples <https://www.bodenbuendnis.or.at/leerstaende-good-practice>

Course „Municipal Spatial Planning and Soil Officers“ <https://www.bodenbuendnis.or.at/lehrgang/lehrgaenge>

<https://www.bodenbuendnis.or.at/bodencheck>

Switzerland

Platform for internal development and densification <https://www.densipedia.ch/>

<https://www.wsl.ch/de/landschaft/siedlung-und-raum/siedlungsentwicklung-und-flaechenverbrauch.html>

Impressum

This practical guide was commissioned by the German Federal Environment Agency as part of the project "Implementation of the Action Program "Green Economy in the Alpine Region"" (research code 3719 18 102) and financed by the German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection.

Green Economy in the Alpine space is a topic of the Alpine Convention since 2014 and is addressed, among others, in the 6th Report on the State of the Alps "Green Economy" (2016), in the Green Economy Action Programme (2019) and in the Green Economy Progress Report (2020). Further information is available at <https://www.alpconv.org>.

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Doi: <https://doi.org/10.53197/0002-EL>



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