SHERPA
Rural Science-Society-Policy Interfaces

MAP Position Paper

LAND USE & CLIMATE CHANGE

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The Danish members of MAP Denmark

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Find out more about the Danish Multi-Actor Platform!
https://rural-interfaces.eu/maps/denmark

Our warm thanks to all members of the Multi-Actor Platform (MAP) Denmark who have contributed to the work and discussions with valuable input, perspectives, and their time.

The composition of MAP Denmark is dynamic. At its inception, Landdistrikternes Fællesråd (the National Council for Rural Affairs) and the Danish Agriculture and Food Council contributed to the selection of members of MAP Denmark. Later, several MAP Denmark members contributed new member proposals to cover more areas of interest and perspectives.

The organisations represented in MAP Denmark in 2022, by representative group, are as follows:

Research

- Centre for Regional and Tourism Research
- Danish Centre for Rural Research (CLF), University of Southern Denmark (SDU)
- Department of People and Technology, Roskilde University (RUC)

Society

- National Council for Rural Affairs
- Danish Agriculture and Food Council
- Association of Danish Small Islands
- Balance Denmark
- Bæredygtig Herning (Sustainable Herning)
- Collective Impact
- Frej Think Tank
- Danish Society for the Conservation of Nature

Policy

- Danish Housing and Planning Authority
- Danish Agricultural Agency
- Central Denmark Region
- Lejre Municipality

1. Summary and key messages

The Danish Multi-Actor Platform (MAP) discussed the issue of land use in the light of climate change during the spring and summer of 2022, with a particular focus on the implications for Danish rural areas and their development. The members have different backgrounds and represent different positions, all of which are connected to rural district development. In this position paper, they wish to jointly highlight a number of important themes and key messages in relation to land use in Denmark, which politicians, civil servants, planners and local developers, amongst others, should take on board and act upon to the greatest possible extent in order to support and promote a green and sustainable transition, in which land use is central.

Four themes have been highlighted by MAP Denmark members as highly topical in relation to future land use in the light of ongoing and future climate change. These are:

- Renewable energy
- Food production and lowland set-aside
- Public governance and stakeholder consultation
- Land ownership

The main messages from the members of MAP Denmark:

- To successfully achieve a green, sustainable transition, land use must be **multifunctional**. Many agendas affect land use, and since land is a limited resource, these will need to be considered together.
- **Close cross-sectoral collaboration** is essential to achieve the goals. Currently, the members of MAP Denmark experience that the different agendas and sectoral objectives often end up competing with each other, and that public governance is characterised by silo thinking. This creates a battle for the land areas, where we instead need to look at synergies and how we can achieve the best results across agendas. There is thus a need for better cooperation models.
- MAP Denmark proposes an **overarching cross-sectoral collaboration** spanning the Danish Agricultural Agency, the Danish Nature Agency, the Danish Environmental Protection Agency, the Danish Energy Agency and the Danish Housing and Planning Authority, in order to support synergies, avoid land use conflicts, and create inclusive and robust processes to achieve a policy approach that will ensure sustainable development.
- Securing **local ownership** for local citizens and **local value creation** in the processes and development of the affected districts, which are mainly in rural areas, is essential for a successful green transition and the changes in land use that it entails. Rural land development must not be a 'sticking plaster solution' for local areas, but an integral, strategic part of restructuring efforts.
- There is a need to review various **laws and regulations**, which MAP members view as hindering development and contributing to an undesirable situation. Particular emphasis is placed on the Section 3 scheme for conserved nature areas and the influence of the Agriculture Act on who can own agricultural land, as well as the current organisation of the business promotion system.
- The current **funding models** do not sufficiently complement each other at Danish or European level.
- In recent decades, Denmark has focused strongly on urban renewal in cities. With the green transition and the efforts to achieve Danish and international climate targets, which will to a large extent take place in and affect rural areas, there is a need to focus on **village renewal**. The restructuring will offer a wide range of opportunities for rural development and the development of attractive and vibrant villages, if it is approached in an inclusive and multifunctional manner.

2. Introduction

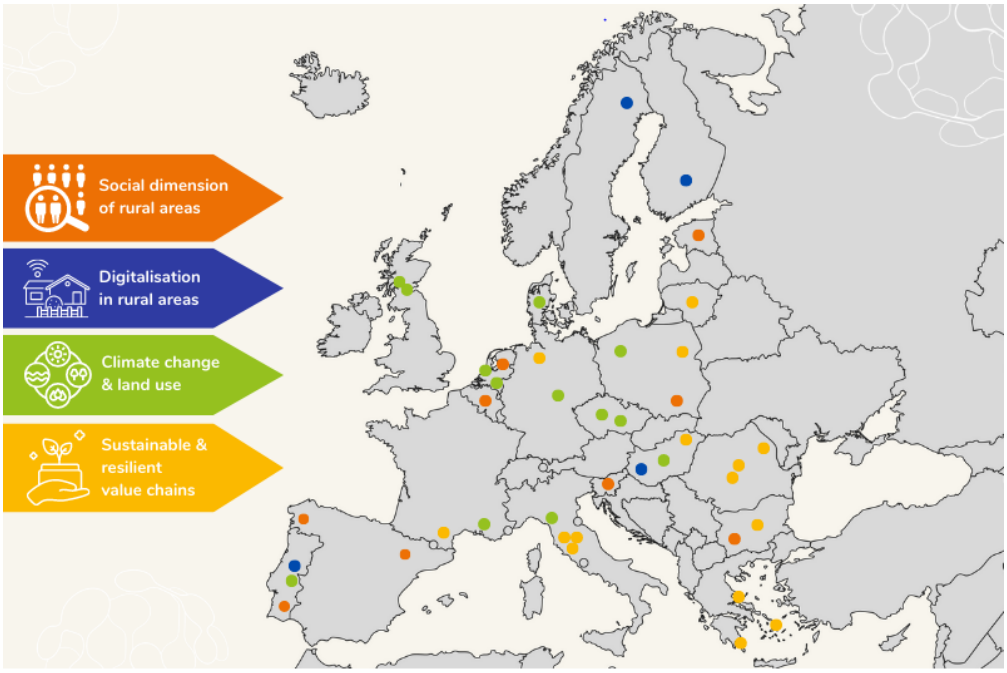
Land is a limited resource, and there are many objectives and needs that will need to be prioritised and met in this area if we as a society are to achieve the green transition and climate adaptation. In the coming years, significant changes in land use in Denmark are thus underway which will have a major impact on rural areas. The Danish MAP sees it as particularly important that land use planning in Denmark is optimised, and that more is done to serve different interests simultaneously, including food production, energy production, improved biodiversity, reduction of CO2 emissions and access to recreational areas. MAP members see great potential for an improvement in the land use process in Denmark and the way in which this links to rural development, but also great challenges to achieving this.

This position paper presents the results of the discussions that took place in spring and summer 2022 in MAP Denmark on the topic of future land use in the light of climate change. The meetings were structured around the following four questions:

1. What are the land use needs of the area encompassed by the MAP, in the light of climate change?
2. What policy initiatives are already in place, and what are some examples of actions taken by local actors to address these needs?
3. What policy initiatives do MAP members recommend to be implemented at local, regional and/or national level? How can the EU support these initiatives?
4. In what areas is knowledge lacking, and what research/research projects are needed?

In total, 13 of the 40 MAPs established across the European Union in the SHERPA project (rural-interfaces.eu) have discussed the topic of future land use in the light of climate change (see illustration below). The main results of the MAP discussions have been collated in a joint SHERPA position paper.

Figure 1: Overview of topic choices in the 40 SHERPA MAPs for the work in 2022.

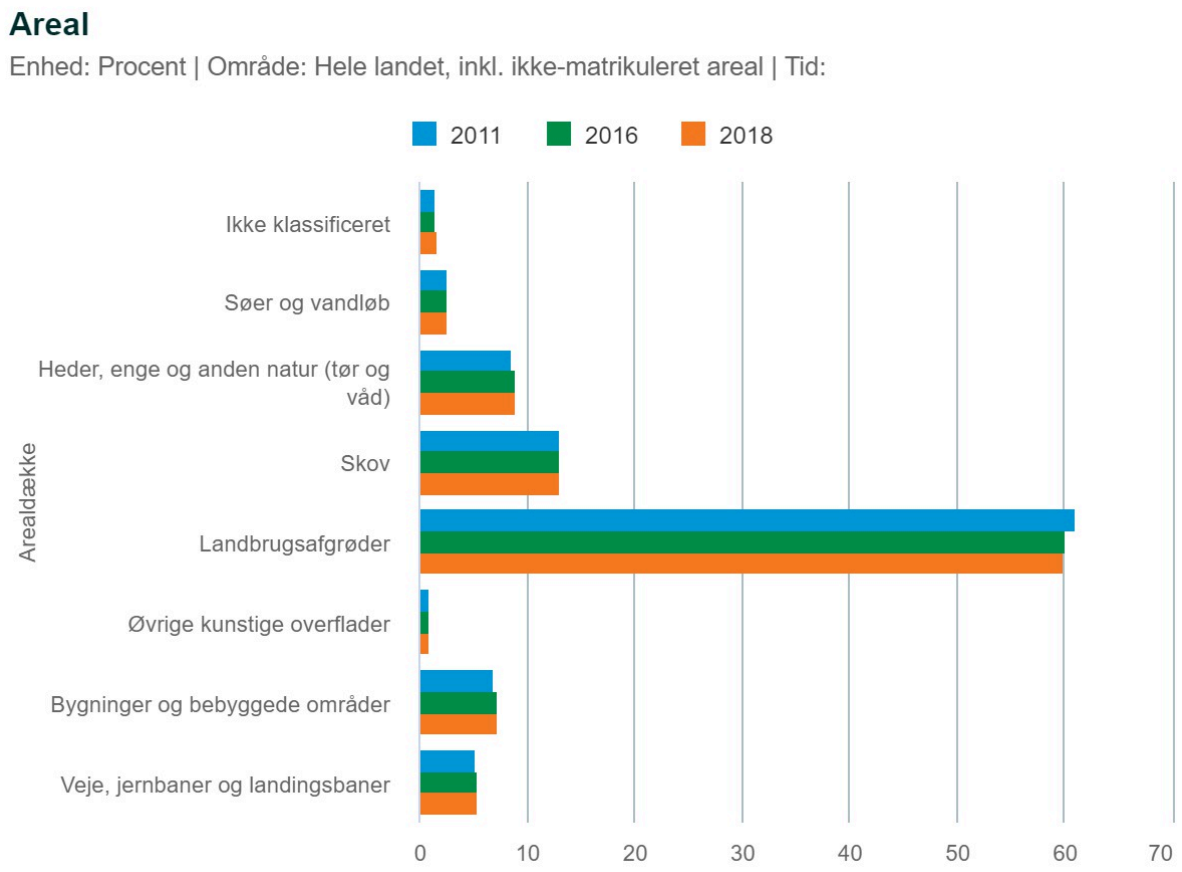


3. Current situation, based on background research

Land use in Denmark

Agriculture accounts for around 60% of Denmark's total land area, making the country a major food-producing nation. Land use by agriculture has decreased since the 1960s, with the largest reduction in annual crops, while the more extensive areas with perennial crops have increased (Statistics Denmark 2020). Forestry accounts for about 13% of land use, and has remained unchanged in recent years, but has doubled in size since 1923 (Statistics Denmark 2017). Built-up areas, roads, etc. cover in total about 13% and have increased over time, while wild nature has also acquired more space (see Figure 2). The distribution of land varies considerably between regions, with, for example, agricultural land in the Capital Region accounting for only 38% and built-up land for 30%. Below, major uses as highlighted by MAP Denmark for food, energy and infrastructure are elaborated to illuminate the complexity involved, including insight into the ownership and geographical distribution of land use in Denmark.

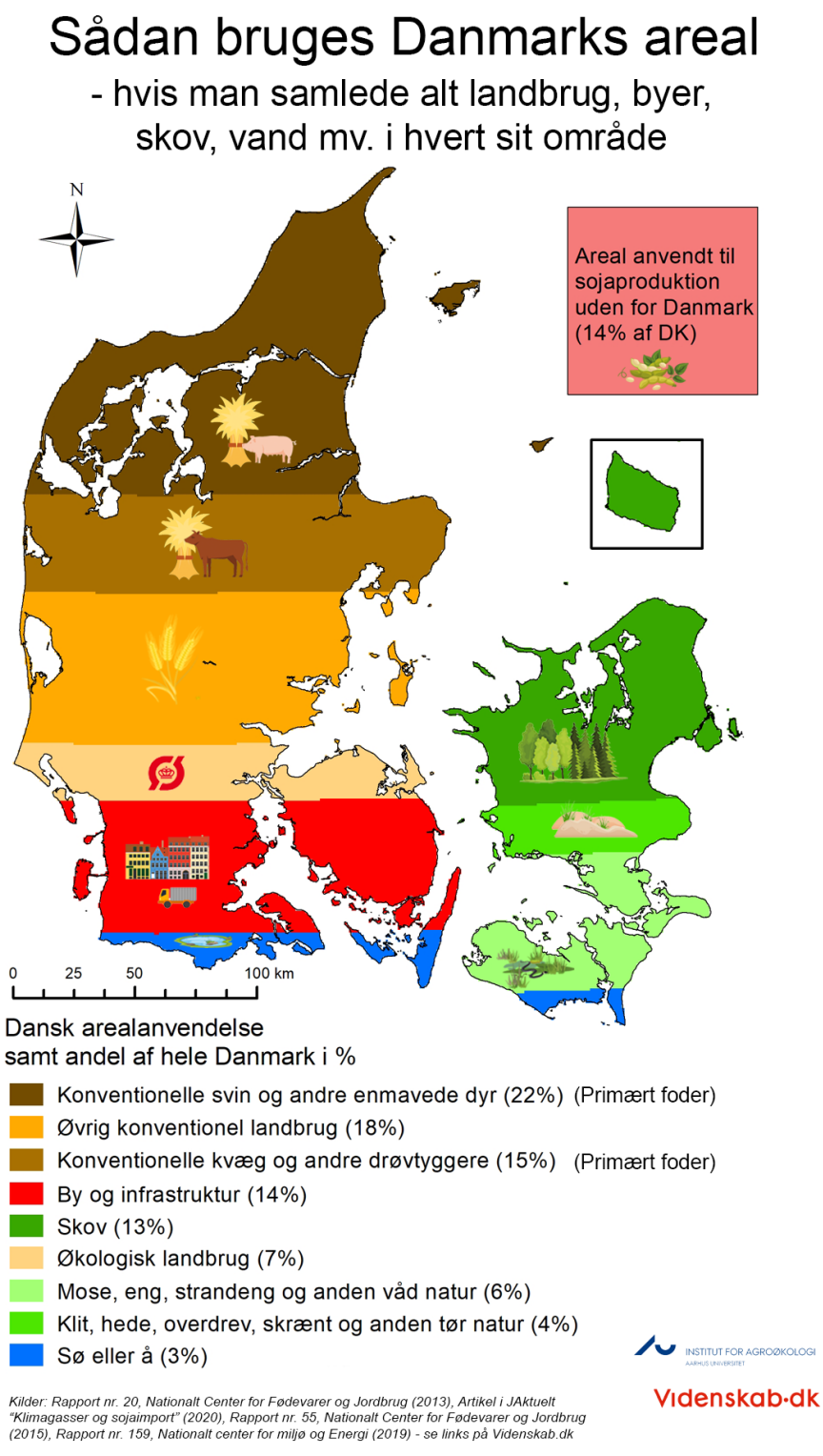
Figure 2: Overview of land use



Source: Statistics Denmark, https://www.dst.dk/da/Statistik/emner/miljoe-og-energi/areal/arealopgoerelser, retrieved 9 August 2022

Figure 3 shows a thought experiment devised by the Department of Agroecology at Aarhus University. It illustrates Denmark's land use if the individual categories were collected in a single area, without showing the actual geographical location (Nielsen 2021). Denmark has a large production of farm animals, and as the map shows, one-third of Denmark's total land area is used to grow animal feed and produce pigs, cattle and other livestock. An area equivalent to 14% of Denmark's total area, about the size of Zealand, is also used outside the country's borders for soy production, which is part of Danish production.

Figure 3: How Denmark's land is used



Source: https://videnskab.dk/kultur-samfund/nyt-danmarkskort-saa-meget-fylder-dansk-landbrug (retrieved 3 August 2022).

Restructuring of the agricultural and food sector

In the report AgriFoodTure: Roadmap for sustainable transformation of the Danish Agri-Food system by Aarhus University, the Technical University of Denmark (DTU), SEGES Innovation and the University of Copenhagen (Olesen et al. 2021), land use and planning is identified as one of four key areas[1] which, in combination, can provide the solutions to achieve the national and global climate and green transition goals in the agriculture and food sector. The authors stress that the sustainability and emissions reduction goals can only be met through changes in landscape structure, functions, management and associated governance (ibid.:18). Initiatives highlighted in the report include: land distribution reforms, ending wetland drainage, changing drainage practices, afforestation, and the development of new crop and fertiliser systems that focus on biodiversity. Methods such as testing and demonstration centres in the form of Living Labs are seen as key elements to verify the actual effects of the various actions and measures. To achieve climate goals in agriculture and food while reducing environmental impacts and protecting biodiversity, the authors stress that "*this requires substantial changes in land use and agricultural cropping systems as well as development and implementation of new technologies"* (ibid.:p.24). The roadmap presented in the report is based on a joint collaborative effort, with contributions from nearly 300 researchers from Danish universities, and input from industry and stakeholder organisations.

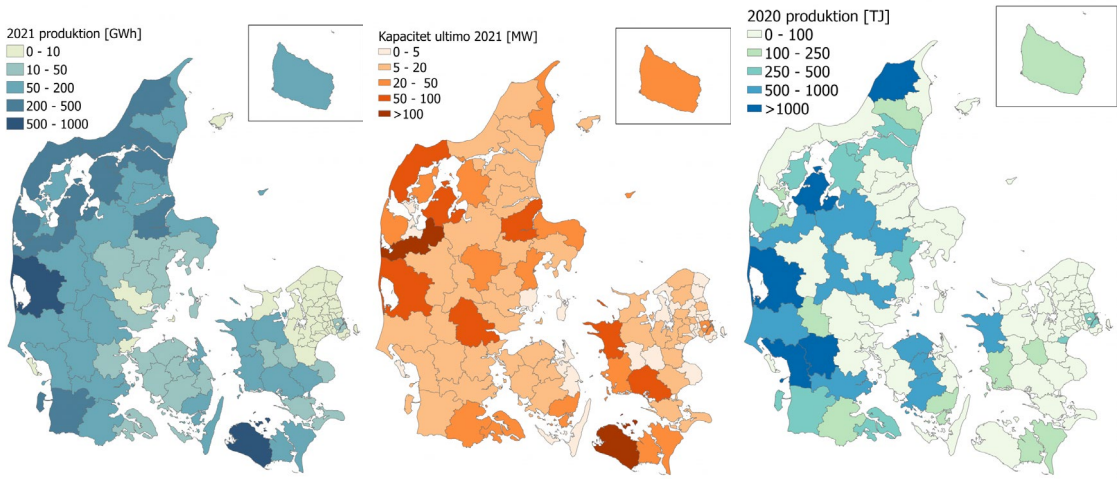
Renewable energy

In 2020 Denmark had an energy self-sufficiency rate of 57%, of which 42% was renewable energy. Looking at electricity supply in isolation, renewables account for 68% of this. The maps below (Fig. 4-6) show onshore wind, solar PV and biogas installations (2021 and 2020). It is clear that production is greatest in western Denmark, especially for biogas, partly due to a close link with livestock production. Wind power production is also greatest in the western municipalities, but is present in most Danish municipalities, albeit in very limited numbers in the north-eastern municipalities, including Copenhagen. Solar PV capacity also varies between municipalities, but is geographically distributed across all municipalities in the country. In the Capital Region, however, solar production is quite modest.

Figure 4: Electricity production per municipality from onshore wind, 2021.

Figure 5: Electricity capacity per municipality in solar PV installations, 2021.

Figure 6: Biogas production per municipality, 2020.



Source: https://ens.dk/service/statistik-data-noegletal-og-kort/download-faerdige-kort

[1] The other three areas are: livestock-based production, crop-based production, and biotechnology-based food production and alternative protein sources.

Mineral extraction

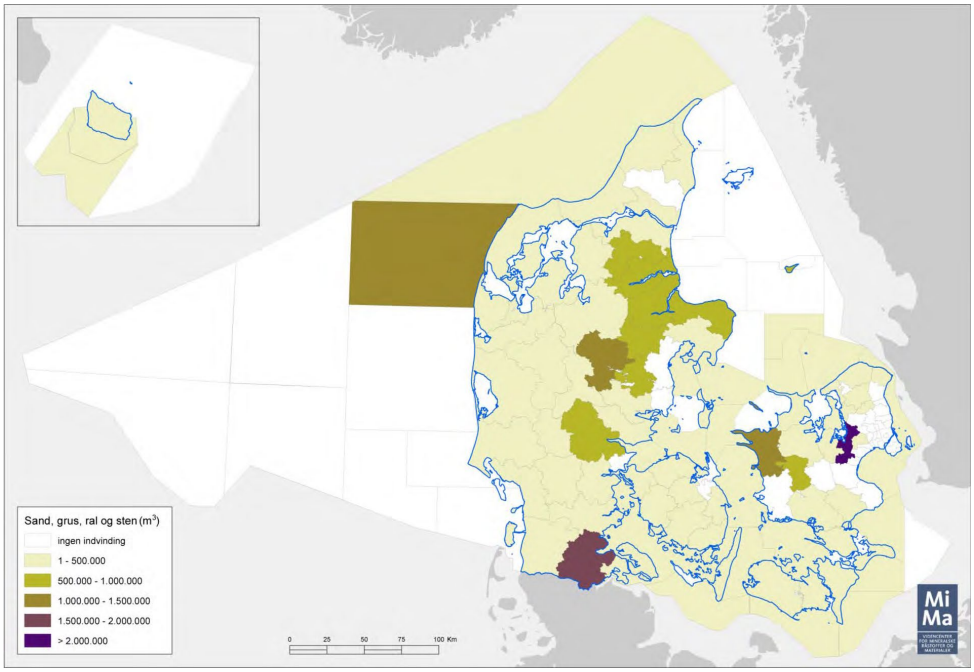
Table 1 shows that 1% of the land in Denmark is used for mineral extraction. However, the relative area used for mineral extraction varies: the higher the population density, the lower the relative area used. The vast majority of these minerals are used in Denmark for public infrastructure projects such as buildings, roads, bridges and metro, and for private construction. Figure 7 shows where the minerals are extracted, which is predominantly in the more densely populated areas and in the North Sea.

Table 1: Areas allocated to excavation in relation to the area and population density of the various regions

Region	Area	Mineral extraction areas		Population	Population density
	ha	ha	%		Residents/km²
North Denmark	793,300	13,718	1.7%	590,439	75
Central Denmark	1,305,300	11,648	0.9%	1,332,048	102
Southern Denmark	1,219,100	11,868	1.0%	1,223,634	100
Zealand	727,400	3,930	0.5%	838,840	116
Capital Region (- Bornholm)	256,100	1,473	0.6%	1,855,084	720
Bornholm	*58,840*				
TOTAL (- Bornholm)	**4,301,200**	**42,637**	**1.0%**	**5,840,045**	**136**

Source: Regionale råstofplaner (Regional mineral plans) (2020)

Figure 7: Extraction of sand, gravel and stone in Denmark, 2014: Onshore extraction per municipality; marine extraction per project area.



Source: http://mima.geus.dk/udgivelser/indvinding-af-danske-mineralske-raastoer-en-geografisk-sammenstilling-2016/

Another challenge is soil contamination from earlier industry, chemical use, waste dumps, etc., which means that some land in both rural and near-urban areas cannot be used for, for example, housing, agricultural production, drinking water abstraction or recreational purposes. In this context, it is also a problem that the mapping is not complete, i.e. not all of the contamination is known.

These factors underline the complexity of land use and land use planning. The fact that there are many different factors to take into account further nuances the picture in Figure 2 of how Denmark's land is being used.

Agricultural holdings and ownership of land

Denmark has around 31,000 farms, two-thirds of which are located in Jutland. The number of farms decreased very significantly in 2021 compared to the previous year, by just over 5% – a much larger decrease than that observed in previous years. In addition to the general and well-known structural trend towards fewer and larger farms – the number of farms has more than halved in 30 years – the decline in 2021 was also due to the disappearance of mink farming from Danish agriculture, following the culling of mink in autumn 2020 (Statistics Denmark 2022). The number of farms has more than halved from just over 77,000 in 1991 to just over 31,000 in 2021, and over 10% of these are on more than 200 ha of land (Table 2).

Table 2: Number of agricultural and horticultural holdings in selected years

	1991	2001	2020	2021	1991	2001	2020	2021
	Holdings				Holdings as percentage			
Agricultural holdings, total	**77,197**	**53,489**	**33,148**	**31,395**	**100.0**	**100.0**	**100.0**	**100.0**
0.0-19.9 ha.	31,976	20,642	15,379	14,205	41.4	38.6	46.4	45.2
20.0-49.9 ha.	29,065	15,185	6,309	5,957	37.7	28.4	19.0	19.0
50.0-99.9 ha.	12,269	10,662	4,154	4,047	15.9	19.9	12.5	12.9
100.0-199.9 ha.	3,210	5,455	3,676	3,580	4.2	10.2	11.1	11.4
200-399.9 ha.	542	1,356	2,414	2,360	0.7	2.5	7.3	7.5
400 ha. and over	134	190	1,216	1,246	0.2	0.4	3.7	4.0

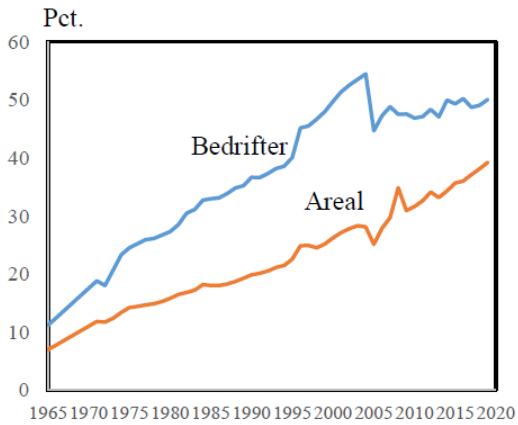
Source: www.statistikbanken.dk/bdf11

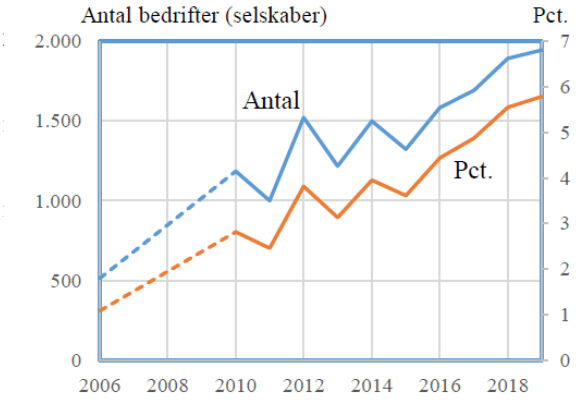
In many cases, land is purchased from existing properties to form larger units. At the same time, the legislation has been liberalised in such a way that it is now possible to own agricultural land without living on the property. This has contributed to increased financing opportunities for capital-intensive agriculture, but at the same time it has weakened the link to the local community. Several members of MAP Denmark have highlighted the challenge of generational change in agriculture as capital requirements for farm purchases increase. This makes generational change difficult, as farms have generally become large and expensive to buy.

As the report *Fremtidens ejerformer i dansk landbrug* ('Future Ownership Forms in Danish Agriculture') puts it: "*The greater the structural trend towards larger and more specialised farms, the more the self-ownership form comes under pressure*" (Hansen et al. 2021:5). The structure of agriculture becomes more concentrated and the level of self-ownership/personal ownership is reduced, while corporate ownership becomes more widespread. Figure 8 shows the impact of leased agricultural land. It can be seen that in 2019, half of all agricultural holdings used leased land and 40% of all agricultural land was leased – a proportion which has increased enormously since 1965. This means that a constantly increasing proportion of agricultural land is not managed by those who own it. Self-ownership is declining in particular in large farms over 200 ha, of which just over 12% are company-owned. Overall for all farm sizes, the figure is just under 7% – see Figure 9. On top of this comes foreign ownership of agricultural land. In 2020, Statistics Denmark calculated that

foreigners are owners or co-owners of about 2.5 percent of Denmark's agricultural land, corresponding to 66,000 hectares – which also forms part of the so-called 'external' ownership.

Figure 8: Leaseholds: Farms with leaseholds and leased areas 1965-2019, as percentage of total
Figure 9: Company ownership in Danish agriculture, 2006-2019: Total companies, and as a percentage of all ownership types





Source: Hansen et al. 2021

4. Position of the Danish Multi-Actor Platform

4.1. Needs and challenges in Denmark

In today's Denmark, there are a large number of management areas with associated goals in which land use is crucial, and where priorities between types of use are discussed. This includes the expansion of onshore wind and solar installations, the cultivation of biomass for energy, the increased priority given to biodiversity and wild nature, the restructuring of food production, improved water environment and groundwater protection, recreational possibilities and carbon storage. This is expressed by the Danish MAP, where many of the interests mentioned are represented and put forward.

The starting-point for future sustainable land use is land as a limited and scarce resource. With the already intensive use of land and the many objectives to be met in open land (e.g. more wild nature, increased energy production, biomass production), better cooperation models and joint target achievement will be needed between sectors and ministries, as well as between the state, regions and municipalities. To this end, several MAP members point to the need for a multifunctional approach to land use, managed for multiple purposes.

There is a need for long-term planning, and a mapping of where different uses of the land will make most sense, i.e. a need for prioritisation with a localised approach. Such mapping must also take into account issues such as potential mineral sites, abandoned mineral pits, groundwater protection and soil contamination. The Danish MAP has also argued that there is a need for an increased focus on marine planning, as the establishment of offshore wind farms, in particular, is undergoing major development in Denmark.

To enable the restructuring of land use while ensuring that changing use needs are acted upon, there is a need to focus on citizen and stakeholder involvement in the process. This will help to create ownership among local stakeholders and bring local value to the areas concerned. It will also contribute to maintaining

or enhancing factors that make rural areas attractive places in which to live, such as amenity value, access to open space, local pride in actively contributing to the climate or biodiversity agenda, etc.

MAP Denmark points in particular to four thematic areas where there is a strong need for better planning and management of spatial planning in open land, and a number of issues that need to be thoughtfully addressed. These are:

- The expansion of renewable energy
- Future agricultural production and set-aside of lowland soils
- Public governance and stakeholder consultation
- The importance of land ownership

Photo: Louise Ormstrup Vestergård

MAP Denmark points to a number of previous projects and analyses on land use and priorities for Denmark's land in the future. These can be important contributions to the debate, including the comprehensive report referenced above, AgriFoodTure: Roadmap for sustainable transformation of the Danish Agri-Food system (Olesen et al. 2021) together with the 2017 report of the Danish Board of Technology Prioritising Future Danish Land Use (Arler et al. 2017). The reports present recommendations and proposals for measures and areas of action that should be prioritised and developed in order to achieve Denmark's stated goals for the environment, climate and social development.

If all the current land use plans and objectives for Danish land are added together, they amount to 130-140% of Denmark's total land area, according to the report Prioritising Future Danish Land Use (Arler et al. 2017). The authors therefore point to the need for comprehensive overall planning and a national strategy for land use. In addition, they also stress the need for clear priorities and guidelines from the state, in particular priorities in the areas of agriculture, nature and landscape, energy supply and climate adaptation. The report is based on a 2½-year project carried out in the period 2015-2017. As part of the project, 250

representative citizens were invited to a citizens' summit in January 2016 to discuss the direction of Denmark's development. The majority of the citizens wished to see a multifunctional approach with the emphasis on nature and environmental protection (ibid.:5).

Prioritising future land use in Denmark creates major challenges for policy-makers in many sectors at national, regional and local level in relation to land use planning and management, and in balancing the various activities and considerations (Arler et al. 2017). MAP Denmark is very much in agreement with the recommendations and points raised in the Danish Board of Technology's report. These recommendations i include the proposal for a multifunctional, locally adapted approach to land use planning and the need for inclusive, dialogue-based, locally anchored processes. Moreover, MAP Denmark agree with the political understanding that these processes take time and require resources, but are essential to drive the necessary changes in land use.

Expansion of renewable energy

In April 2022, the Danish government announced its ambition to quadruple total energy production from solar and onshore wind sources by 2030. The question of where to locate the energy plants in order to achieve the objectives is central to discussions about future land use. In addition, offshore wind farms will also have an impact on the use of land, as the infrastructure associated with the installations will also have to be built on land.

MAP members stress the importance of taking local citizens into account, as protests are often reported against the installation of energy facilities. Involving local, concerned citizens from the start and ensuring that they have **ownership** of the process and that **local value creation** is achieved are key components in achieving the desired renewable energy production and success in creating an equitable green transition (for a concrete example, see the description of Hvide Sande wind farm in section 4.2). This ensures that the people who have to live side-by-side with the energy facilities get something back for their own community. This requires **improved processes** for involving citizens and stakeholders in the local area, as well as models for achieving local value creation in the affected rural districts. MAP members hope that the installation of renewable energy systems for local citizens will be more closely linked to positive local development, and thus help to promote the expansion of renewable energy.

On the smaller Danish islands, they find that although there is local interest and a desire to become self-sufficient in energy, they are prevented from installing wind turbines because of **coastal zone protection regulations**. Under the new free villages scheme, there has been a great deal of interest in green energy, and *Landdistrikternes Fællesråd* (the National Council for Rural Affairs) has stated that "the Coastal Protection Act hinders small islands from setting up wind turbines, solar panels or other green energy production facilities." (Boel 2022).

A problematic development highlighted by MAP Denmark is the status of the complaints boards, which are seriously under-resourced. In addition, there is a perceived imbalance in how the issue is portrayed in the media, where there can be a strong focus on opponents of the project. The members call for more critical and reflective journalistic coverage that does not simply present the discussion in black and white terms.

In recent years, the **establishment of solar farms**, in particular, has accelerated. MAP members report that the majority of established solar farms are set up on agricultural land, and point out that it is problematic when good agricultural land is used for this purpose. It is a good source of income for farmers, but it is problematic that it is not subject to regulation. MAP Denmark emphasises that solar farms should be established on land where this creates synergies with other land use objectives, and does not compete with, for example, food production. Available space on building roofs is highlighted as an obvious opportunity for the installation of solar cells, which should be exploited to a far greater degree.

In addition to the expansion of renewable energy, the great potential of energy efficiency in rural housing has also been highlighted, and ways in which villages can develop decentralised heating systems. The

development of renewable energy (especially biomass) is also closely linked to future agricultural production, which leads directly to the next section and thematic area highlighted by MAP Denmark.

Photo: Andreas Gücklhorn, Unsplash.

Future food production and lowland set-aside

The report AgriFoodTure: Roadmap for sustainable transformation of the Danish Agri-Food system identifies the following four themes and a cross-cutting theme for transitioning to a more sustainable Danish food system to meet national and global goals: land management, livestock-based food production, plant-based food production and biotechnology-based food production, and alternative protein sources. In addition, cross-cutting aspects relating to agri-food restructuring, life cycle analysis, digitalisation, financial instruments, and resource-efficient food processes are described. It is summarised that there is a need for innovative thinking and collaboration between professionals who may not traditionally have worked together, including the involvement of the humanities and social sciences (Olesen et al. 2021).

The Danish MAP members highlight the crucial role of agriculture in the green transition, including the importance of involving farmers' organisations to build trust between stakeholders. In this context, it is important to point out that restructuring and set-aside are linked to family history and traditions that can go back a long way, so in addition to being a technical, economic and legal process, it is also an emotional one.

The setting aside and rewetting of agriculture's carbon-rich lowland soils is a key tool in the recommendations of the Danish Council on Climate Change for achieving national climate targets. An important tool to achieve this is multifunctional land reparcelling, which aims to simultaneously take into account watercourses, biodiversity, coherent nature, afforestation, rural development, etc., through an altered land distribution (for examples of the use of multifunctional land reparcelling, see section 4.2). The political ambition is to set aside 100,000 hectares of lowland soils by 2030; however, over the past five years, only 1,000-2,000 hectares have been set aside per year, so the pace will need to be significantly accelerated if the target is to be reached.

The state tool of multifunctional land reparcelling has however met with local criticism for being too rigid in relation to several criteria, such as the financing plan and natural preconditions (Christensen 2021). Collective Impact, an eight-year project supported by Realdania, is working on ways to methodically support multifunctional land reparcelling using a working form with the same name: collective impact. The basic idea is that complex changes in society require dialogue and interaction between many actors working towards a common goal (see more at: https://collectiveimpact.dk/). MAP members however discuss the balance between voluntarism and expropriation (i.e. forced land ceding) involved in land reparcelling. Land reparcelling is fundamentally based on voluntarism, i.e. the idea that landowners who choose to enter into a transaction do so voluntarily. However, given the short time horizon and the necessity of the green transition, the question is whether a single person can be allowed to prevent an entire land reparcelling transaction even if all other actors involved have accepted the reparcelling.

Local development and early citizen involvement are key: Final evaluation of multifunctional land reparcelling

In June 2022, the final evaluation of the multifunctional land reparcelling scheme was published, which is intended to contribute to the further work on land reform in Denmark. The lessons learned from several land reparcelling projects carried out since 2018 include that focusing on development in the local area where the land reparcelling takes place creates greater support for the project from local politicians, landowners and local citizens. In addition, early involvement is key, especially of landowners, who are the crucial actors, as they are the ones who must agree on the land reparcelling. Consequently, one of the weaknesses of the current system is that too few resources are allocated to facilitate the process.

Multifunctional land reparcelling is highlighted as a good example of how national objectives and local development can go hand in hand. The key lesson is that the goals of the green transition must be more closely linked to local rural development. Projects that work with change in agriculture, nature and the environment will gain more local support, and thus have a greater chance of successful implementation, if local development is taken into account in order to make living in rural areas more attractive.

One recommendation is therefore that the various funding sources at national and EU level should be made more integrated and flexible, so that several necessary land use objectives can be achieved at the same time, in a smart manner (Collective Impact 2022).

Members of MAP Denmark at Glenstrup Sø, where multifunctional land reparcelling has been implemented. Photo: Louise Ormstrup Vestergård

Many MAP members point out that there is a generally poor degree of **coherence between means and tools** for achieving lowland set-aside, including in multifunctional land reparcelling. Processes take longer than planned, and there is a need for more resources to be allocated to managing this work. Although participatory processes involving citizens, landowners, stakeholder groups, etc. are lengthy and complex to manage and implement, they are essential to achieving a good solution and, ultimately, ensuring that projects are completed.

Legislation and regulations are hindering actions that could make a positive contribution to combating both the climate and biodiversity crises. Here, MAP members point inter alia to the management of land in national parks, where grazing could also provide a means of securing biodiversity. However, the legislation does not allow private individuals to manage the land. In the context of lowland set-aside, grazing should be an option, but this is not permitted by current legislation, which allows only vegetable harvesting. A challenge in managing existing nature areas is the financing of fences and the fact that there are many small areas, which makes maintenance labour-intensive. An example discussed in the MAP is Section three of the Nature Conservation Act (Danish Environmental Protection Agency, undated). Around 10% of Denmark's land is protected by this section, which prohibits landowners from fertilising, spraying or converting these areas, while at the same time any compensation is uncertain. Several MAP members point out that this is challenging for a number of landowners in terms of both their future financial conditions and the trust they are shown.

MAP Denmark highlights the many synergies that exist between food production, energy production and consumption. This includes, for example, double cropping to ensure green fields all year round, with one harvest used for food and another for energy, e.g. for biogas installations. A concrete example is grass proteins. Another example is the use of surplus biomass, such as surplus straw or residual biogas fibres, to create biochar and green power-to-x solutions (an example is the company Stiesdal SkyClean: https://www.stiesdal.com/skyclean/).

The expansion of renewable energy (particularly biomass) is also closely linked to future agricultural production. This includes biogas plants, where manure, waste and residues from industry and households could in the long term contribute to major CO2 reductions, if the CO2 from the biogas plants is stored. In addition, biogas production can also contribute to large CO2 reductions by capturing methane from livestock manure and using the 'green' gas to replace fossil natural gas in the gas grid. Finally, CO2 from biogas plants could be combined with hydrogen from green electricity production to produce electromethane, which can replace diesel for heavy transport such as lorries, ships and aircraft. Electromethane can also be used to produce other green power-to-x fuels, delivering other climate impacts (see for example companies such as Greenlab Skive and Ausumgaard (https://ausumgaard.dk/)).

Alternative protein sources to replace imported soy for use in livestock production are under rapid development in Denmark, as highlighted by MAP members. Various raw materials, in particular clover grass, but also starfish and other invasive marine crustaceans, can be processed to provide protein for monogastric animals such as pigs and chickens, while the residue can be used in biogas production. **Plant-based food production** has also identified been as an alternative to growing feed for animal production. An example of this is the company Organic Plant Protein (https://organicplantprotein.dk/). The restructuring of the food system naturally goes beyond land use, with some MAP members pointing to a greater focus on food waste and the development of foodstuff purchasing agreements that support the purchase of locally produced food.

Public governance and stakeholder involvement

At national level, MAP members point to the need for changes in the funding and management system. Currently, there is a lack of planning systems that span sectors and administrative areas, and there is therefore a need for **increased cross-sectoral cooperation** in relation to land use. MAP members point out that land use planning is currently challenged by the fact that ministries measure different parameters as well as single parameters, and are thus characterised by silo thinking. As the achievement of targets in the individual ministries and sectors is based on single targets, it is challenging to realise synergies and

combine different targets for biodiversity, climate, environment, recreation, food and energy production at the same time.

There are currently many different schemes administered by different agencies, such as the Danish Agricultural Agency, the Danish Housing and Planning Authority, the Danish Environmental Protection Agency and the Danish Nature Agency. The perception among MAP members is that there is an overlap between the different schemes, which in turn underlines the need for better cross-sectoral cooperation, including interactions between funding possibilities. At EU level, one challenge is the reporting of EU funds. MAP members suggest that funding should be more locally based, and should be developed in response to local needs. The LEADER method used in the LAG scheme is inter alia highlighted as a good tool for bottom-up, locally-driven development.

A related area is the approach to business development and business promotion, which MAP members point out is insufficiently coordinated. EU Structural Funds are for example allocated through the Danish Board of Business Development for a number of project initiatives, but these are not linked to how municipalities and regions work with local and regional development and planning[2]. As a result, it is difficult to realise the maximum effect from the initiatives. Moreover, with the developments in the field in recent years, several members of MAP Denmark feel that the local perspective and the resilience of local areas has been side-lined, as business development has become both centralised and project-oriented, which is perceived to contribute to discouraging long-term, holistic and locally-adapted business development. In addition to the disconnect between development and promotion/support schemes, the delivery of business support through projects means that they become less need-driven and less efficient. In this context, it is also pointed out that LAG funding is far from sufficient to boost local business development, which is of great importance locally but does not receive much attention from the business support system.

The general perception in MAP Denmark is that regulations and the slow process of amending them are hindering much of the development that could take place, and slowing down the pace of much-needed change. Since there are many laws involved, for example in relation to the establishment of energy production, it becomes difficult to achieve results at the desired speed. The experience of some MAP Denmark members is that local actors are reluctant to participate, as they are afraid of being subject to sanctions later if they have overlooked or misunderstood some of the rules.

At local level, the planning capabilities of rural municipalities are challenged by limited resources to initiate more strategic work across sectors, and pressured by demographic trends. In the municipalities, there is a strong focus on solving problems and remedying undesirable effects, such as complaints relating to local plans, instead of on developing possibilities.

As highlighted in the section on renewable energy, **stakeholder involvement, local ownership in the process and local value creation** are important factors in planning future land use. Supporting local involvement and the creation of value for the local community from land use change offers an opportunity to create positive rural development and, in particular, accelerate a necessary and incontrovertible restructuring process.

[2] Business promotion is carried out through six business centres in Denmark and six associated branches. Additionally, there are 13 (originally 14) knowledge clusters, see: https://ufm.dk/forskning-og-innovation/samspil-mellem-viden-og-innovation/viden-klynger-og-kommercialisering/klynger. The Danish Board of Business Development later decided, as part of its strategy, to support eight (local/regional) business lighthouses https://www.danskindustri.dk/di-business/archives/news/2022/2/now-rolls-million-to:-the_future's-room-erhvervsfyrtarne/. The focus here is on growth, innovation and sustainability in a wider national/international context, rather than on resilience at local level.

Photo: Dylan Gillis, Unsplash

Changes in land ownership

MAP members stress the need to focus on the ownership of agricultural land, and on who can and may buy the land. According to the Agriculture Act, the owner of the land has a residence obligation, but it is not specified that it is the owner himself or herself who must reside there. MAP members find that the Agriculture Act, as currently drafted, benefits only large farmers, and they ask that the Agriculture Act be reviewed and questions asked about why there are restrictions on who can own land and the residency obligation, including whether there should be an obligation to contribute to the community in which one owns the land.

In the small islands, where agriculture is in general highly important, an increasing proportion of agricultural land is managed as remote property. Small islands, as local communities, are vulnerable to the removal of agricultural land, as their ability to survive as year-round communities depends on people who have businesses on the island also residing on the island (Meldgaard & Hare 2022).

In the view of MAP Denmark, an overview of who owns the land needs more focus. As one MAP member puts it: *"Farmland has become an investment property. Remote ownership and the concentration of ownership can attract investment, but there is a lack of visibility about who owns the land."* (Broegaard & Larsen 2021). In Denmark, there is no register of owners of agricultural land, nor is there an authority responsible for monitoring developments in this. The same applies in the EU. A number of green farming, environmental and food-related organisations have signed a declaration of intent in which they state: "We wish to see a public register of the actual owners of agricultural land. The register must ensure transparency in the ownership of agricultural land and strengthen the basis for democratic dialogue." (https://hvemejerjorden.dk/).

Photo: Uta Scholl, Unsplash

4.2. Political initiatives and actions

The EU Common Agricultural Policy

The EU's Common Agricultural Policy for Denmark for the period 2023-2027 is embodied in the CAP Strategic Plan (Ministry of Food, Agriculture and Fisheries 2021a), which aims to ensure the efficient implementation and management of the EU's Common Agricultural Policy. The implementation of the CAP plan takes place in close interaction with national strategies and initiatives, including the political agreement on the green transition of Danish agriculture of 4 October 2021 (Agreement 2021). The CAP plan is intended to support common EU objectives for an economically sustainable agricultural sector, promote the green agenda in the fields of environment, climate and nature, and strengthen rural development. The CAP plan has also been implemented with the aim of prioritising specific areas of action outside the CAP.

The Danish Rural Development Programme is an implementation based on funds from the European Agricultural Fund for Rural Development, which is part of the EU's Common Agricultural Policy. The Rural Development Programme is realised through funding from the EU and the Danish state. With EU financing, the total budget for the period 2014-2020 is approximately DKK 9.3 billion, DKK 6.8 billion of which stems from the EU. In Denmark, the Rural Development Programme is administered by the Danish Agricultural Agency, which is part of the Ministry for Food, Agriculture and Fisheries, and is implemented through a number of grants that can be applied for by farmers, businesses, the general public and others with initiatives that contribute to the objectives of the programme. The Rural Development Programme 2022 is viewed as a precursor to the CAP 2023-2027.

Political initiatives and goals in Denmark

Below is an overview of relevant adopted laws and agreements on reducing climate gas emissions, increasing biodiversity and renewable energy, and promoting greener industry, greener agriculture, and more locally based processes.

- In June 2020, the Danish Parliament adopted the Climate Act with binding climate targets. The purpose of the Act is for Denmark to reduce its greenhouse gas emissions by 70 per cent before 2030 compared to 1990 levels, and to become a climate-neutral society by 2050. The Climate Act means that Denmark's climate objectives, in both the short and long term, are laid down in law. The same applies to the 'no backsliding' principle, which ensures that a new sub-target cannot be less ambitious than the most recently set target.
- In December 2020, a new Nature and Biodiversity Package was adopted by the Danish Parliament to improve biodiversity and establish more national nature parks and many thousands of hectares of undisturbed forest.
- In May 2021, an Agreement on an indicative greenhouse gas reduction target was adopted by the Danish Parliament to underpin the 70% target by 2030 with an interim target of 50-54% by 2025.
- In addition, an inter-ministerial working group was set up in May 2021 to examine foreign ownership of agricultural land. The group is to "identify options to limit acquisitions from outside the EU" to ensure foreign acquisitions "do not get out of hand" (Ministry for Food, Agriculture and Fisheries 2021b).
- In October 2021, the Danish Parliament adopted an Agreement on the green transition of the agricultural sector. The agreement requires agriculture to reduce greenhouse gas emissions by 55-65% by 2030.
- Amongst other things, the agreement involves implementing a land reform that will reduce emissions from land areas and forests. The ambition here is to afforest and extensify land areas, and to set aside 100,000 hectares of lowland, including marginal land. Carbon-rich lowland soils make up just under 7% of arable land in Denmark (around 170,000 hectares), but contribute more than half of the total emissions from land cultivation (Climate Council 2020).
- In December 2021, the Danish Parliament adopted a Green partial agreement to secure further reductions in CO2 and more renewable energy.
- In April 2022, the Government presented a reform proposal for a greener and more secure Denmark: "Denmark can do more II" (Government 2022). This initiative is step two of "Denmark can do more I" (Government 2021), which was adopted by the Danish Parliament in 2021, and which included support for investments in the green transition, the establishment of climate vocational schools and reduced electricity tariffs. "Denmark can do more II" included the following:
    - More green heating. Natural gas to be phased out.
    - More green gas. More gas for Europe.
    - More green electricity.
    - Green tax reform – restructuring industry.
    - Green Danish solutions must transform Europe.

  The initiative presents an ambition to quadruple the total production from solar power and onshore wind power by 2030, both as part of achieving national and international targets for the green transition, and in order to become independent of Russian gas. Room must therefore be found for this, and it is pointed out that the development of renewable energy must play a greater role in physical planning (Government 2022:18).

- On 25 June 2022, the "Climate Agreement on Green Power and Heating 2022" was adopted by a large majority in the Danish Parliament. The agreement provides for more solar energy and onshore and offshore wind power, but also encompasses a goal of local anchoring and faster planning processes in the municipalities. The agreement includes initiatives on:
    - More green power 2022
    - More green heating and the phasing-out of natural gas by 2022

International commitments

Danish climate policy is also driven by Denmark's international climate commitments as well as by its national goals in the energy area, which have a major impact on greenhouse gas emissions in Denmark. EU legislation plays a large role in this, including:

- EU 2030 targets: The EU's total emissions to be reduced by 40 percent from 1990 to 2030. This encompasses the following overall EU objectives:
    - 43% reduction by 2030 compared to 2005 in emissions from major emitters of CO2 covered by the EU's Emissions Trading System (ETS), such as power plants and the oil-gas sector
    - 30% reduction by 2030 compared to 2005 in emissions from buildings, agriculture and transport
    - At least 27 percent renewable energy by 2030
    - At least 27 percent energy efficiency

The EU's 2030 target for greenhouse gas reductions in the non-ETS sectors has been translated into a Danish national reduction commitment of 39% for emissions in the non-ETS sectors, including buildings, agriculture and transport, compared to emissions in 2005.

Governance and responsibilities in land use planning in Denmark

In Denmark, planning responsibility is divided between the municipalities and the state. The municipalities have a major responsibility in relation to local planning and land use, while at state level four national areas of interest have been specified which municipalities must take into account in their planning (Trzepacz et al. 2021). The four current national areas of interest are (Danish Business Authority 2018):

- Growth and business development,
- Protection of nature and the environment,
- Cultural heritage and landscape conservation, and
- Consideration of national and regional facilities.

The Planning Act lays down the framework for land use in Denmark, and is administered by the Danish Housing and Planning Authority. In connection with the agreement on the "Follow-up to the evaluation of the Planning Act" of June 2022, it is planned to establish a cross-ministerial committee on holistic planning in open land areas.

"*Holistic planning for open land areas: A cross-ministerial committee will be established to collect experience and identify options for holistic municipal planning for land use in open land areas, including new conditions for agriculture and business opportunities in rural zones, such as worm farms and fish farming, and land use for sustainable energy installations, such as solar cells and wind turbines. KL - Local Government Denmark, the Danish municipalities, and interest groups such as the Danish Society for Nature Conservation (DN), the Danish Outdoor Council, the Confederation of Danish Industries (DI), the Danish Chamber of Commerce, Green Power Denmark, the Danish Association of Chartered Surveyors (DdL) and the Danish Agriculture and*

Food Council will be involved in the work, which is expected to take one year. Draft terms of reference will be submitted to the parties" (Agreement 2022:3).

On 15 June 2022, a new Planning Act agreement was adopted to create a good framework for the green transition, the development of vibrant towns with a varied housing supply, and the development of rural and coastal areas. The themes in the agreement include:

- The climate, the green transition and nature
- Urban development, etc.
- New development opportunities along the coasts and in tourism
- Mobile phone coverage throughout the country
- Simplification, reduced administration and digitalisation
- Complaints system
- Other rule changes
- Køge Bugt Strandpark – modernisation and climate protection.

In the agreement, the section on 'The climate, the green transition and nature' with its points on 'Planning for solar PV in open land areas' and 'Holistic planning in open land areas', is interesting, as it aims to introduce greater consideration and involvement of local interests into the planning process. The changes to the Planning Act are intended to strengthen the municipalities' ability to support development opportunities.

Climate high on the agenda of the municipalities and regions

The climate is high on the local political agenda, and for years the municipalities have taken the lead in local climate measures by working hard to promote the green transition and reduce carbon footprint. With the DK2020 climate partnership between KL - Local Government Denmark, the Danish regions and Realdania, all municipalities in the country can obtain advice and sparring on the development of local climate action plans, with a common methodology and a level of ambition that meets the Paris Agreement. The municipalities are thereby making world history in the fight for the climate. The targets encompass both reductions in greenhouse gas emissions and adaptations to climate change. The municipality commits to take the necessary steps to become climate neutral and resilient by 2050. 95 of the 98 Danish municipalities are part of the DK2020 project, following in the footsteps of the most climate-ambitious cities in the world. The climate action plans must be completed by 2023.

The Danish regions, like the municipalities, have climate high on their political agendas and are working hard to reduce greenhouse gas emissions, both in healthcare and through the many regulatory and development tasks included in regional development strategies, e.g. in mobility and mineral extraction. At the same time, the regions often play a coordinating role in climate action. The Central Denmark Region, for example, draws up energy and climate accounts every two years together with its municipalities. Another example is the Life project *Coast to Coast Climate Challenge* (C2C CC), in which, for the past six years, the Central Denmark Region has led a collaboration of 31 partners, including 18 municipalities, to create a climate-resilient region (see more at https://c2ccc.eu).

4.3. The MAP's good examples of local initiatives in land use in the light of climate change

Below are a number of good examples highlighted by MAP Denmark members of how Danish rural areas have worked locally to improve land use and approach the task in a multifunctional way, with benefits for local communities, the climate and nature.

The highlighted examples are:

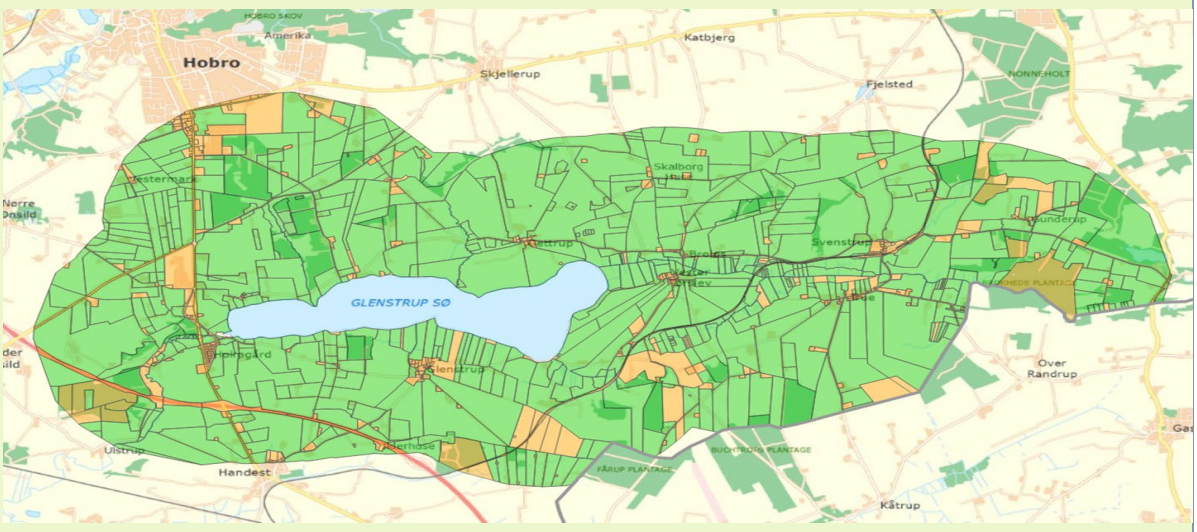
- Multifunctional land reparcelling at Glenstrup Sø
- The 'BioScape' action for deteriorating ecosystems
- Local ownership in the energy transition: Wind farm in Hvide Sande
- Nees climate park in Lemvig Municipality
- Improved biodiversity, habitat protection and access to nature: Nature project at Knudshoved Odde, Vordingborg Municipality: Life Clima Bombina
- Gjellerup Enge: Helping to make the Herning Municipality one of the 'wildest' municipalities
- Local place effects of external ownership through a national agricultural foundation: the Danish Organic Agriculture Foundation

Multifunctional land reparcelling at Glenstrup Sø

The area around the lake Glenstrup Sø in Mariagerfjord municipality has been selected as one of several pilot areas to test the multifunctional land reparcelling method. Several projects have been carried out in the area, focusing on the reopening of watercourses and the restoration of the Gettrup Bæk brook, common grazing and the extensification of land between the village of Glenstrup and the lake, plus the restoration of spring sites.

According to the project staff, the four most important lessons learned from the work with multifunctional land reparcelling at Glenstrup Sø are:

1. Local development, attractive residence and a profitable farming industry are a prerequisite for developing sustainable and cost-effective solutions for nature, the climate and the environment.
2. The function of facilitator is crucial to create credible processes and holistic solutions. The team must be set up from the start and encompass professional and organisational breadth.
3. Local involvement and ownership are essential to start and sustain processes of change.
4. Common knowledge of the multifunctional potential of the local area and landscape opens up new opportunities by comparison with traditional sectoral approaches.



For more information, see:

- https://life-natureman.dk/nyheder/2019/november/jordfordeling-ved-glenstrup/

- https://lbst.dk/landbrug/arealer-og-ejendomme/jordfordeling/multifunktionel-jordfordeling-mufjo/

The 'BioScape' action for deteriorating ecosystems

Three pilot projects in the Central Denmark Region aim to show how the conversion of agricultural land can benefit landowners, biodiversity, the environment and climate action in the biodiversity project 'BioScape'. The project is funded under the EU-Life Nature and Biodiversity programme and runs from October 2021 to October 2026, with a budget of approximately DKK 37 million.

In concrete terms, the project will demonstrate how climate and biodiversity challenges can be addressed in the three pilot areas, in close cooperation with landowners and on the basis of voluntary participation, for example by converting land to new uses – ideally so that several needs can be addressed at the same time. These might for example include water retention, CO2 storage, increased biodiversity and recreational value. The project uses the multifunctional land reparcelling tool.

The three pilot areas in BioScape are:

- Byn Sø in Lemvig Municipality,
- Endelave in Horsens Municipality
- Åstrup Kær in Hedensted Municipality.

Common to the three pilot areas is that they each represent important ecosystems that are in decline. On the island of Endelave, there is a particular focus on safeguarding the island's vulnerable groundwater. To this end, afforestation, grazing meadows, ecology and the creation of small lakes and insect-friendly areas are highlighted. At the lake of Byn Sø in Lemvig, the focus is particularly on reducing eutrophication in the lake from the surrounding agriculture, while at the Åstrup Kær watercourse in Hedensted, the emphasis is on reducing damage costs in the event of flooding.

The activities of the BioScape project cut across the three project areas, which allows the municipalities to exchange experience and assist each other with concrete actions in the projects.

The project involves nine partners: the Central Denmark Region, the municipalities of Lemvig, Horsens and Hedensted, SEGES Innovation, the Danish Society for the Conservation of Nature, Aarhus University, SAMN Forsyning and the European Landowners' Organisation (ELO).

For more information, see:

- https://www.rm.dk/om-os/aktuelt/nyheder/nyheder-2021/september-21/nyt-partnerskab-viser-vej-til-nytankning-af-land-arealer/
- https://www.hedensted.dk/hedensted_data/dagsorden/Udvalget_for_Teknik/04-05-2021/ID3132/Bilag/Punkt_110_Bilag_1_BioScape_praesentation.pdf

Local ownership in the energy transition: Wind farm in Hvide Sande

The wind farm at Hvide Sande on the West Jutland coast is a good example of community involvement and local ownership in the transition to renewable energy. This is a small wind farm consisting of three turbines, supplying power to approximately 3,000 households. In connection with the planning of the wind farm, a public meeting was organised and attended by more than 300 people. The majority of the

participants were advocates for the project, and the focus on local involvement and ownership has been central to retaining local support for the onshore wind turbines.

For more information, see:

https://planenergi.dk/wp-content/uploads/2018/05/Til_web_Hvide_Sande_VVM.pdf

Nees climate park in Lemvig Municipality

Nees Hede Climate Park is an initiative of Lemvig Municipality in connection with the future establishment of large solar power plants in the municipality. Climate parks are extensive areas which, on the basis of the installation of major solar PV systems, contribute much more than the production of renewable energy. The municipality expects project developers to show creativity in developing solar PV projects so that they to the greatest possible extent support rural development, agriculture, tourism, climate, biodiversity, the water environment and recreation. It is expected that the project developers, in dialogue with the local population and landowners, will examine whether, in the area:

- Attractive residential properties can be located – either through new development or the redevelopment of existing properties.
- Dykes can be removed and wetlands established, supporting biodiversity, the climate and a good aquatic environment.
- Woodlands can be established, effectively camouflaging the solar plant while providing recreational opportunities and supporting biodiversity and climate.
- Land areas with a high potential for nature can be freed up for the benefit of flora and fauna.
- Recreational trails and experience routes can be established for the enjoyment of local residents and visitors.

In addition, as mentioned above, project developers are expected to show great creativity in developing climate parks so that they become multifunctional, and both meet as many local aspirations as possible, and address as many local and global challenges as possible.

Lemvig Municipality cooperates with a wide range of actors on multifunctional projects. For example, we work closely with the Lemvig District Farmers' Association and the Central Denmark Region in multifunctional land reparcelling. We are happy to involve professionals and networks at the request of project developers. The wish of Lemvig Municipality to establish climate parks should be seen in the light of the municipality's investment in Klimatorium and DK2020. The ambition is for the climate parks to become the first multifunctional mega-projects, with the same area serving many purposes and meeting a large part of the climate bill for the surrounding community through net CO2 uptake.

Lemvig Municipality is in dialogue with project developers for two climate parks, the primary function of which will be the production of renewable energy via solar cells. Secondarily, the climate parks will also address climate challenges in open land areas by removing water-stressed lowland soils from cultivation and setting them aside as wetlands, woodland, nature areas and the like. The climate parks are thus expected to make a significant contribution to climate adaptation in open land areas. The climate parks have large budgets in hundreds of millions of kroner, only a small part of which is invested in climate adaptation. A rough estimate would be that DKK 20 million will be invested in buying up lowland soils and converting them to wetlands, forest or nature areas in each of the two projects. The climate parks enjoy a very high priority in Lemvig Municipality, primarily because they will make a significant contribution to our long-term plan to achieve climate neutrality. The project developers are the main actors in the establishment of the climate parks, while the local landowners, Lemvig Municipality and the

state are important partners. The climate parks are dependent on the possibility of grid connection, which will determine when the parks can be realised. In addition, new national legislation and electricity prices may have a major impact on the feasibility and timeframe of the projects.

For more information, see: Large solar PV installations (lemvig.dk)

Improved biodiversity, habitat protection and access to nature: Nature project at Knudshoved Odde, Vordingborg Municipality: Life Clima Bombina

At Knudshoved Odde in Vordingborg Municipality, a nature project entitled Life Clima Bombina was launched in 2019, focusing on improved biodiversity, habitat protection for endangered species and public access to experiences of nature and recreation. The aim is to create a new nature area of 184 hectares, including ponds, extensive wetlands and grazing areas, which will in total form a coherent nature area of over 280 hectares. A large part of the project sum goes to Rosenfeldt Estate to relinquish the right to cultivate the arable land.

The project has received funding from the EU LIFE programme and the Danish Environmental Protection Agency, amongst others, and has a budget of approximately DKK 38 million. It is being realised in the period from 2019 to 2023.

For more information, see:

- https://webgate.ec.europa.eu/life/publicWebsite/project/details/5134
- https://www.vordingborg.dk/media/11vpicw2/life-clima-bombina.pdf

Gjellerup Enge: Helping to make the Herning Municipality one of the "wildest"

The company Ege Carpets has joined forces with Herning Municipality and the Danish Nature Fund to create a new nature area for the citizens of Herning and the area's plants and animals.

The nature area is called Gjellerup Enge, and it is an area of approximately 90 hectares of coherent nature, with grazing animals and more space for birds, which are currently in need of breeding sites. The 90 hectares have been made available by several actors: Herning Municipality, the Danish Nature Fund, Ege Carpets, Herning Vand and a landowners' association.

On the basis of this project, Herning Municipality is in the finals, together with nine other municipalities, for the title of "Denmark's wildest municipality": a national competition for municipalities, organised by the Ministry of Environment to encourage the creation of better conditions for biodiversity and nature.

Gjellerup Enge is a good example of multi-stakeholder cooperation between a private company, a municipality, various organisations and local volunteers, and shows how companies can make better use of their land to the benefit of nature and recreation.

Source: https://naturfonden.dk/wp-content/uploads/2021/05/GjellerupEnge_Kort_18Maj_21-1.pdf

For more information, see:

- https://www.herning.dk/nyheder/2021/hernings-borgere-faar-adgang-til-flere-naturoplevelser/
- https://naturfonden.dk/natur/gjellerup-enge/
- https://dkvild.dk/

Local place effects of external ownership through a national agricultural foundation: the Danish Organic Agriculture Foundation

In a project carried out by the Centre for Regional and Tourism Research, the local place effects of external ownership via the Danish Organic Agriculture Foundation (DØJ) have been studied: more specifically, the farm Lundtofthøj in Southern Jutland, which has been bought by DØJ and leased out.

DØJ's investment rationale focuses on securing/increasing the areas of land under organic cultivation, safeguarding the interests of the environment, nature, biodiversity and water quality, and securing access to farmland for young, flexible farmers who are committed to socially beneficial agriculture. In addition, DØJ stresses the need for foundations or limited companies owning agricultural land to commit themselves to ensuring socially beneficial outcomes from the way the owned agricultural land is managed. This also implies a commitment to rural development that secures jobs, added value and well-being – both in the agricultural enterprises and in the social communities.

For more information, see: https://crt.dk/wp-content/uploads/Stedseffekter_casenotat-3_DOeJ_Kliplev.pdf

4.4. Recommendations from MAP Denmark

4.4.1. Recommendations for future rural district policy

- To achieve a green sustainable transition, land must be used multifunctionally. MAP Denmark therefore proposes an **overarching cross-sectoral collaboration** encompassing, inter alia, the Danish Agricultural Agency, the Danish Nature Agency, the Danish Environmental Protection Agency, the Danish Energy Agency and the Danish Housing and Planning Authority, in order to support synergies, avoid land use conflicts, and create inclusive and robust processes to achieve a policy approach that secures sustainable development.
- Multifunctional land reparcelling is a good tool to ensure that account is taken of various different interests in the land allocation. At the moment, the problem is that **too few resources are allocated to facilitating** the processes between the different stakeholder groups. The MAP therefore recommends that more resources are provided to guide this process.
- As part of the awareness of potential synergies, the MAP recommends a much stronger focus on **supporting the installation of rooftop solar panels** and removing current barriers to this. In general, solar PV farms should be installed on areas of land where they create synergies with other land use objectives, and not on good agricultural land.
- In the transition, more strategic and targeted work should be done towards promoting **local ownership and local value creation**, for example in the installation of renewable energy facilities. Funds which currently go to the affected areas, and which can be experienced as a symbolic "sticking plaster solution", should be devoted more to strategic local development work and to leading good, inclusive processes.
- The MAP members recommend that there be greater political vigilance regarding the **consequences of remote land ownership,** including reviewing the Agriculture Act and the rules therein governing land ownership. In addition, an overview of who owns the land should be created.
- There should be a review of the **coastal zone legislation** and the ways in which it affects development on Danish small islands.

4.4.2. Recommendations for the future research agenda

- MAP Denmark points to the need for greater understanding of how we use land areas to serve multiple interests. A major research project could therefore usefully produce an interdisciplinary research report on multifunctional land use and synergies, as a strong contribution to the national debate.
- In order to support the green transition and ensure that the affected communities are included and benefit from the transition's positive development effects, future research could usefully explore how best to ensure local value creation in and local ownership of the green transition.
- To increase knowledge about trends in land ownership, a research project could usefully investigate the question: Who owns Denmark's land? This could contribute to creating an overview of the various owners.

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