Managing rurban landscapes in the Netherlands, Denmark and Sweden: Comparing planning systems and instruments in three different contexts

Anne G. Busck, Marjan C. Hidding, Søren B. P. Kristensen, Christer Persson & Søren Præstholm

Abstract

Urban growth and sprawl have put pressure on surrounding rural areas for a long time, and planning history abounds with examples of how to cope with this development. The problem is also acknowledged in the European Spatial Development Perspective (ESDP), which, apart from recommending planning principles, also recommends common ways of arriving at solutions. This study compares three different planning systems and physical and socio-economic contexts (the Netherlands, Denmark and Sweden) to analyze different approaches to managing urban growth, dealing with the transformation of rurban areas, and ensuring green areas. The results show that population density, the relative abundance of land and the role of agriculture have not only shaped planning systems and policies historically, but still define how urban sprawl is perceived and managed in current planning practices. Although indications of a common discourse can be found, the factors that once led to three distinct planning systems still play a major role. The results are used to discuss the potential for arriving at a common European view on planning as represented by the ESDP.

Keywords

Planning systems, planning instruments, contextuality, urban pressure, rurban transformation, countryside, green structures

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Urban growth is one of the most significant drivers of social and economic change and a major force in the transformation of the landscapes surrounding cities (Antrop, 2004; Zlotnik, 2004). The transformation includes both functional changes (e.g. increasing demands for residential and recreational uses) and structural changes (e.g. new land uses, constructions and infrastructures in the rural areas) – built up areas being the most radical. In some locations the transformation challenges the relevance of a clear distinction between town and country (Amin & Thrift, 2002; Sieverts, 2003).

In many European countries, the management of the relationship between cities and the surrounding countryside has been a major planning challenge for a long time, as uncontrolled urban sprawl is a threat to agricultural production, green areas and recreational use of the landscape. The London Green Belt, the Green Heart of the Randstad and the Copenhagen Finger Plan are well-known examples of efforts to manage urban growth and to preserve green landscapes as a contrast to urban areas (Hall, 1992; Swaffield & Primdahl, 2006). The strategic importance of urban growth has been acknowledged in the European Spatial Development Perspective (ESDP) (EC, 1999). The ESDP suggests a polycentric spatial development together with a new urban-rural relationship to achieve: "a balanced and sustainable development for the territory of the European Union". However, as planning cultures, planning systems, physical and socio-economic contexts vary widely between countries in Europe, spatial policies for cities and the countryside are formed and implemented differently (EC, 1997; Larsson, 2006).

In this paper, we elaborate on how the challenge of urban sprawl is approached in three European countries: the Netherlands, Denmark and Sweden. The three countries

are all EU member states and thus subject to a common supra-national framework, yet they differ strongly in physical and socio-economic terms as well as urban growth dynamics.

The main focus in the paper is on the planning of the 'surrounding countryside'. To express the many relationships with the nearby cities and acknowledge the difficulties in a clear distinction between urban and rural areas, we will use the term 'rurban areas' (Peréz et al., 2005). Three themes will receive special attention: First, the management of urban growth, as urban growth is the most dynamic factor in urban regions and implies the most extreme transformation of rurban areas; second, the management of rurban transformation, including physical and functional changes that are part of the social and economic development of these areas; and third, efforts to keep the rurban landscapes 'green', as this landscape characteristic is most distinguishing in relation to nearby cities. The objective of the analysis is to answer the following research questions: 1) What are the main differences in planning systems and practices between the three countries and why have they evolved and 2) Are there signs of convergence in the planning systems and what lessons can the three countries learn from each other?

The contextuality of planning

Apart from arguing for a common European spatial policy on urban and urban-rural relationships, the ESDP suggests a concordant view on how the goals described should be achieved (EC, 1999). Although the ESDP is clearly aware of the current differences in planning systems in various countries, it is argued that "the Member States now take into account the policy aims and options of the ESDP in their national spatial planning systems", albeit "in the way they see fit" (EC, 1999: 44), since the document is not binding for the member states. So, even if the ESDP is not supposed to be a blueprint for planning in the EU, the expected outcome indicates a certain ironing out of differences in attitudes and practices (EC, 1999: 45) and thus points in the direction of convergence. The question is how realistic such a goal is if national systems are also to be respected.

On the one hand, planning has always been open towards international influences, and planning history in general more or less presupposes a flow of ideas between countries, even to the point of major international traditions (Hall, 1992; Ward, 2002), reflecting what Peter Hall calls the 'Zeitgeist' (Hall, 2002: 265). The latter also refers to common problems to be solved and modern development itself creates a number of borderless challenges, whether they originate from economic and technological changes, like the industrialization of agriculture, or policy measures, like the common agricultural policy (CAP). Further, the rise of global awareness has created a common view on environment and resources, e.g. from the Club of Rome to climate change, to which should be added an ideological turn with the rise of neoliberalism and good governing practices epitomized in the new global buzzword 'governance' (Andersen, 2002).

On the other hand, national planning systems have been constructed from historical, cultural, political and economic experiences and are thus discursively constructed so that what can be done and the way it should be done in a given location depends on what is acknowledged as a problem and what is considered a legitimate way of solving it. Of particular importance here is how norms and values are codified in legal frameworks. Attitudes towards land, property and public interest are fundamental in governing planner and citizen alike and procedural rights admit different degrees of local discretion to planning authorities (Booth, 2007; Cullingworth & Caves, 2003). Such differences are culturally and historically constructed and embedded in language in such a way that it may be impossible to discern ideology from practice (Kunzmann, 2004). The success of pan-European planning ideas and visions will thus depend on how they fit into current national planning discourses, which are largely constructed from the major events and perceived planning problems in each country.

Spatial context and planning history

In this section, we present key figures on the spatial context of the Netherlands, Denmark and Sweden as well as short descriptions of the planning history of each country. Both are important elements in explaining the current planning systems.

Recent figures about population, area and population density (Table 1) show that the Netherlands and Sweden take up extreme positions. The area of the Netherlands is about 11 times smaller than that of Sweden, but its population density is about 20 times higher. The Netherlands and Denmark are quite comparable regarding their area, but in terms of population density, Denmark takes up an intermediate position between the two other countries.

	The Netherlands	Denmark	Sweden
Population (millions)	16.4	5.4	9.1
Area (km^2)	41.526	43.094	449.964
Population density (people/km^2)	394	126	20

Table 1: *Population, area and population density in 2007. Source: Eurostat, 2008.*

Though the differences regarding population density are less profound when looking at the most urbanized regions within the three countries, significant differences still exist (see also ESPON, 2004: 11).

The following data about land use come from national statistics, which means that they are not fully comparable, but some rough conclusions can be drawn. Firstly, the differences in population density (Table 1) are reflected in the percentages of urban land use (Table 2). Secondly, Table 2 shows remarkable differences in the percentages of farmland, forest and nature. While Denmark and the Netherlands have a relatively high percentage of farmland and relatively low percentages of forest and nature, the opposite is true for Sweden. Recent changes in land use indicate a continuation of these trends. Urban land use increased by a modest 1.7% in Sweden between 1995 and 2005 (Statistika Centralbyrån, 2008). In the Netherlands, the increase in urban area was more significant, although seen over a longer period, as it increased from 6% to 11% of the total area between 1970 and 2003 (VROM, 2000; Centraal Bureau voor de Statistiek, 2008). Figures for Denmark show growth trends higher than those in Sweden but lower than those in the Netherlands as the urban area increased from 7.3% in 1982 to 8.4% in 1995 (Groth et al., 1998).

The physical conditions and socio-economic characteristics have influenced national planning strategies and priorities. However, current planning systems also build on tradition and history, reflecting key economic, political and social events in each country. This section presents key societal events and the way national planning systems have evolved to respond to them.

In the Netherlands, sanitary and social consequences of rapid industrialization and urbanization in the 19th century led to the first national Housing Act in 1901, which included instruments for managing and regulating local urban growth. In the first half of the 20th century, the Dutch spatial planning system gradually evolved into a three-tier planning system consisting of a national, provincial and local level. Due to the highly urbanized nature of the country, urban growth management was a major planning task. In rural areas, another type of planning was regulated by the 1924 Land Consolidation Act, which focused on the modernization of the physical-spatial conditions for agriculture. From the early 1970s land consolidation evolved into an instrument for multifunctional land readjustment on the behalf of agriculture, outdoor recreation, nature and landscape. The existence of two planning systems for urban and rural areas went well together, dominated by the idea of town and country as separate entities. Today, spatial planning and land readjustment fulfill highly complementary functions in rurban areas since one is strong on controlling urban growth while the other is aimed at actively transforming the spatial structure of rurban areas (Hidding et al., 2000). Dutch planning for both urban and rural areas reflects two deeply rooted aspects of Dutch culture: a strong engineering tradition, expressed in the highly human-made nature of the country, and a strong culture of consultation. As early as in the Middle Ages, concerns about adequate management of land and water forced farmers and landowners to organize water boards and to coordinate their actions. Today, practices of consultation, negotiation and coordina-

	The Netherlands (2003)	Denmark (1995)	Sweden (2000)
Urban (including main infrastructure)	14	10	3
Farmland	55	66	8
Forest	12	12	52
Nature / other		9	28
Water	19	3	8

Table 2: *Land use in the Netherlands, Denmark and Sweden in percentages of total area.*

Sources:
The Netherlands: Centraal Bureau voor de Statistiek, 2008.
Denmark: Groth et al., 1998.
Sweden: Statistiska Centralbyrån, 2008

tion between relevant actors are still 'normal Dutch planning practice'.

In Denmark, the economy and countryside were dominated by agricultural production for centuries. It was only in 1955 that agricultural export lost its role as the main export commodity. The central role of agriculture has strongly influenced the course of Danish rural planning. Until the early 1970s, rural planning essentially focused on ensuring sufficient and suitable land for agriculture. Major groundwork programs until the mid-20th century (heath land cultivation, marsh reclamation and wetland drainage) increased production but also reduced nature and semi-natural landscape elements to cover only 9% of the area. The urban component of the Danish planning system and instruments developed as a reaction to the poor building standards, infrastructure and hygienic conditions in the largest cities during the age of industrialization in the late 19th century (Engelstoft & Kristensen, 2005).

After World War II, the separate trajectories of rural and urban planning traditions were challenged by urban sprawl, which was seen as a threat to agricultural production. In addition, increased mobility and living standards increased the demand for summer cottages, which spread along coastlines. In order to balance urban growth with the need for agricultural land, the early 1970s saw a zonation of Denmark into rural, urban and summer cottage zones and the development of a hierarchical planning system consisting of three tiers. Starting in this decade, a growing environmental awareness began to influence planning in both urban and rural areas (Holten-Andersen et al., 2000). Strict environmental demands and nature protection interests slowly reduced the dominant role of agriculture. In addition, the reduced socio-economic importance of agriculture has allowed other interests (e.g. nature, recreation, residential) to gain foothold in rural areas.

In Sweden, modern planning is often said to have originated in 1874, when a national Building Ordinance was introduced. Although planning was not unknown before, the need to regulate urban growth and sanitary conditions led to a comprehensive view on urban matters in a country were urbanization came late. For a long time, focus was primarily on urban issues. In 1947, a new Building Act was adopted which greatly increased the powers of the planning authorities in order to manage urban growth during resettlement after World War II. This development was part and parcel of a state-driven policy to create a large-scale industrial society built on rational principles, but local authorities were relatively autonomous, reflecting an old functional division of power between the king/state and the peasants/municipalities. Planning for modern Sweden was still mainly an urban question, though, and the countryside was more or less left out. During the 1960s and 1970s, environmental concerns began to focus on threatened resources and habitats outside the cities. Modern agriculture and forestry and the demand for cheap energy had put pressure on natural resources, and therefore, legislation was modified in order to protect the natural landscape. This gradually changed the perception of non-urban landscapes and although rules for urbanized areas remain stricter, consideration for natural and cultural landscapes has lead to a more protective attitude towards the countryside.

The three compressed narratives point to some similarities in the discursive development but also to important differences. The initial importance of the urban environment reads almost like a textbook example of planning history, but the extent to which urban growth has influ-

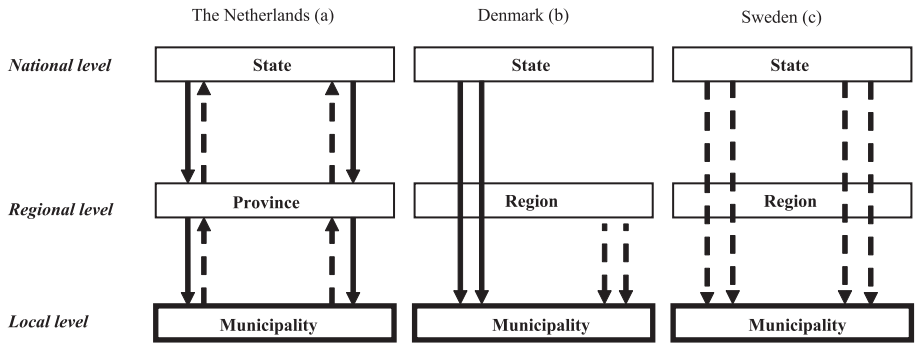

Figure 1: *The three-tiered planning system and relationships between levels in the Netherlands, Denmark and Sweden. Frames in bold indicate the main authority related to spatial planning and power relations between levels are illustrated by arrows. Bold arrows illustrate strong influence regarding spatial planning on other levels, while broken arrows indicate weaker influence, e.g. in terms of general principles in plans on other levels.*

enced planning differs quite substantially. In the Netherlands, early urban pressure led to a multi-functional and development oriented view on the rural landscape and in Denmark, the rural landscape was protected for the benefit of agriculture and later on for recreation and natural conservation, while focus in Sweden was primarily on urban and not rural areas. The Dutch consultative practices were conducive to cross-tier negotiations; the Danish system combines general legal regulation with a planning hierarchy; and the Swedish distribution of authority has led to a fair amount of local discretion.

The spatial planning systems and instruments

The spatial planning system and its instruments constitute the administrative framework for managing change in rurban areas. This section introduces the planning system and major planning instruments in each country, namely spatial plans, zonation by legislation and area/object protection.

The spatial planning system in all three countries can be characterized as a framework system with three tiers at national, regional and local level, see Figure 1. Though lower tiers generally have to comply with the regulations and plans made at higher levels, there are significant differences between the countries as indicated by the arrows in Figure 1.

The Netherlands

Spatial Planning System

The Dutch spatial planning system is a three-tiered system with the state, the provinces and the municipalities being the main planning actors. The relationships between the different tiers are guided by the principle of subsidiarity: ´Only if necessary, decisions should be taken at higher tiers'. Policy coordination is mainly realized by consultation, which is indicated by two-way arrows in Figure 1(a). In the new Spatial Planning Act from 2008, approval of local land use plans by the province is no longer required, the idea being that coordination should rest on mutual consultation. If necessary, higher tiers can overrule lower tiers in order to safeguard the implementation of their policies. If their interests are at stake, both state and province can make up local land use plans (inpassingsplan). In addition, the state can issue general rules regarding the spatial policies of provinces and municipalities and can also issue a directive (aanwijzing); the same holds true for the province in relation to the municipalities. Under the former Spatial Planning Act of 1965, highly directive instruments like these have only been used in extreme cases; the same will probably go for the instruments mentioned above, following from the new 2008 Spatial Planning Act.

Spatial plans

According to the Spatial Planning Act, the state, the provinces and the municipalities all are obliged to prepare indicative plans, called 'structure visions' (structuurvisies). Besides spatial issues, structure visions can also concern other issues, like environmental quality, water management, regional economy etc. The local land use plan (bestemmingsplan) is the most powerful instrument of spatial planning, as it controls changes in land use through a system of permits. It is the only plan that is binding for the citizen. As the local land use plan is normally made up by the municipality, the municipal planning level is highlighted in Figure 1(a). In exceptional cases local land use plans may be prepared by the province or the state. The entire area within the municipality must be covered by land use plans – built-up and non-built areas alike. Besides the statutory plans regulated in the Spatial Planning Act, another type of spatial plan operating on a supra-municipal level and made up by municipalities and authorities on other levels, often in cooperation with non-governmental actors, has become a widespread phenomenon in Dutch spatial planning. These area-based plans aim at coordinating development efforts within a certain area across existing administrative borders (Korthals Altes, 2006).

Zonation by legislation

The definition of built-up and non-built areas is done locally and pragmatically. There are no national norms guiding planning practice. In principle such norms could be embedded in general rules, set by the state. This has, however, not been done so far.

Area/object protection

The physical infrastructure for water management, like dams, dikes and dunes, is subject to general protection and management is regulated by law, since the Netherlands is partly situated below sea level and located in a delta area where major European rivers like the Rhine, Scheldt and Meuse converge.

Protection of selected areas plays an important role in nature policies. The plans for the national ecological main structure include existing natural areas (both 'Natura 2000 areas' and national 'nature monuments') and areas to be transformed into 'new nature'. Implementing the latter will increase the ecological main structure from about 13% of the total area in 2005 to 17% in 2018. The 'Natura

2000' areas and the national 'nature monuments' are protected by the Nature Conservation Act; the protection of other areas within the ecological main structure is covered by the Spatial Planning Act. In all cases, compensation measures are prescripted (LNV, 2005).

Landscape and heritage are also subject to protection in selected areas. In the most recent national document on spatial planning (Nota Ruimte), 20 'national landscapes' are selected in order to protect and develop their qualities in relation to landscape, land use, nature, heritage, and recreational potentials. Protection of these multifunctional areas heavily depends on the working of the Spatial Planning Act, subsidies and rules regarding nature and landscape management (Janssen et al., 2007).

Denmark

Spatial Planning System

The Danish planning system is organized as a three-tiered system. A reform of the three-tiered spatial planning hierarchy was implemented in January 2007 (Østergaard & Witt, 2007). Consequently, five regions were formed to replace 14 counties, and their spatial planning competences were reduced, while both the national and local levels were further empowered (Jørgensen & Vagnby, 2005; Ministry of the Environment, 2007). The 98 enlarged municipalities (275 before the reform) are now the main spatial planning authorities, see Figure 1(b).

The regional plans were earlier detailed plans with specific designations for a range of compulsory themes accompanied by directions about the content from the Ministry of the Environment (the national level). These plans constituted the main instrument to guide development in rural areas. But the regional plans also provided a binding spatial framework for the municipalities, which developed detailed plans for the territory of the municipality – focusing on urban zones. Since the structural reform, the municipalities have been responsible for the detailed planning with direct reference to the Ministry of the Environment.

Spatial plans

Spatial planning power was also transferred to the national level by the recent reform. Hence, more detailed planning will now be developed at the national level in order to direct the municipalities. This includes, for example, plans developed in accordance with the EU Water Framework Directive (EC, 2000) and the EU Habitat Directive (EC, 1992), see bold arrows in Figure 1(b). A national strategic spatial vision (landsplanredegørelse) is issued by the government shortly after each election for parliament. The vision emphasizes the spatial development perspective in general as an overall guideline for regional and municipal planning. The state can also issue planning directives (landsplandirektiv), which overrule planning on lower tiers. However, this is generally an exception and mostly targets specific areas and projects like infrastructural investments.

Regional plans (regional udviklingsplan) are made every fourth year by the regional council. The plan is strategic – focusing on regional development but with no specific spatial designations. The plan is to be understood as a guideline for the municipal planning but the region has no authority to stipulate that specific content must be included in the municipal plans.

The municipality plans are strategic and also have detailed spatial designations. A first generation of municipal plans in 2009 will be the primary planning document for development in both urban and rural areas and is to be revised every fourth year. The planning themes of the municipal plan are defined in the Planning Act, but the municipality has a high degree of freedom to formulate the specific content. However, the Ministry of the Environment has the right to veto municipal plans if they are formulated against national interests.

As a means of implementation, the municipality may produce local land use plans (lokalplaner) which are binding for the citizens. Local plans are compulsory in the case of changes that have major impacts, e.g. urban development. Major functional changes in rural areas, e.g. conversion of farm land to a golf course or establishment of large technical facilities/infrastructures, also demand local planning, but local land use plans are the exception in rural areas.

Zonation by legislation

Since 1970, Denmark has spatially been divided into three zones: an urban, rural and summer cottage zone, according to the Zonation Act (Zoneloven, now part of the Planning Act). Together with planning themes in the municipality plan and area protection (see below), the zonation forms the basis for administrative day-to-day decisions on spatial regulation. As a general rule, urban development (housing, industry, institutions) can only take place in urban zones (6% of area) (DMU, 2000). Summer cottage areas are restricted to summer cottage zones (1% of area) (DMU, 2000), to prevent built-up areas along coastlines. In the rural zone (93% of the total area) (DMU, 2000), buildings and changes of land use related to agriculture or

forestry are generally allowed without planning permission. Other changes in the rural zone are subject to application and eventual dispensations depending on designations in the municipal plan and area/object protections.

Area/object protection
A range of different areas are protected by national legislation without compensation to the land owners. These include natural and semi-natural habitats (bogs, heath land, meadows and dry grassland (> 0.25 ha), lakes (> 0.01 ha)) and cultural heritage sites. Furthermore, legislation imposes buffers with restrictions in use around certain area types, objects of cultural or natural interest and along the coastline. Areas actively selected because of their specific qualities constitute another type of protection. They include areas with conservation orders that state specific protection and management requirements for the area. The land owner is compensated for losses or the land is bought by a public authority.

Sweden
Spatial Planning System
The Swedish administrative system consists of three tiers; the state, the regions (Counties) and the municipalities. State involvement in spatial planning is mainly exercised through legislation and policy-making (Larsson, 2006). Although the state may issue sector plans for infrastructure, e.g. roads, there is no national spatial planning in general. The regional tier is even less concerned with spatial planning. The County Administration Board has a controlling as well as coordinating function between the state and municipality, exercising state control over and giving expertise to the municipalities, but does not provide any independent spatial planning. The principal authority regarding spatial planning is thus the municipality, which exerts a planning monopoly within the rules given in the legislative framework, Figure 1(c). This means that municipalities both initiate planning and approve plans. The plans do not have to follow or adjust to plans being made at higher tiers at national or regional level.

Spatial plans
As mentioned, there is no formal spatial planning at national level in Sweden and therefore there are no national spatial plans. On the regional level, the possibility of joint municipal planning does exist, but is rarely used, apart from the Stockholm area where regional planning has existed for decades. Planning at the regional level is not necessarily done in accordance with the formal regional administrative structure however, since the participating actors do not necessarily belong to the same county or include all municipalities in the county. Formal land use planning is thus done at municipal level. The municipalities are obliged to issue municipal spatial plans (Översiktsplan) that cover all land (urban and rural) and water use in the municipality. These plans are not legally binding since their purpose is only strategic and intended to guide future decisions concerning land use. When there is a need to coordinate new continuous development or projects that will have a significant impact, local plans (Detaljplan) are made. These plans are legally binding and must be implemented within a specified time period.

Zonation by legislation
Sweden is spatially divided between urban and rural areas according to population and settlement pattern. An urban area (tätort) is by definition an area where the population exceeds 200 persons – living in areas where there are less than 200 meters between buildings. The delimitation of urban areas is therefore not fixed, since migration may change the status of an area. Although most urban areas are covered by local plans, these are not compulsory for urban areas as such. A rural area might then be converted to urban as a result of immigration without the need for a local plan. Outside urban areas local plans are generally not needed, but building activities apart from minor changes or for agricultural purposes require a building permit.

Area/object protection
Swedish legislation permits protection for either specific or general reasons. In the specific case, areas and objects are actively selected and protected due to their inherited natural or cultural value. Such cases normally lead to certain restrictions on actual land use due to conservation orders, which in turn make the owner eligible for compensation. In the general case, the legislation incorporates rules which apply if certain conditions are met. For example; general protection applies for shorelines and certain objects such as cairns, stonewalls and tree rows. This form of protection is not eligible for compensation. Areas of national interest (Riksintresse) constitute an additional form of protection. These are selected from national inventories and must be protected from changes in land use that may inhibit their future use, and no compensation is given to landowners. While not condemning all kinds of land use changes, this form of protection does impede planning more or less. Areas of national interest are not only set

aside for nature conservation, however, but also for other purposes. Thus, areas for industrial development, recreation or cultural heritage have been protected as well.

Reflections on planning systems and instruments in the three countries

In all countries, local level planning authorities are important. There are, however, some distinct differences. Sweden represents one end of the spectrum with very strong local land use planning competence. Regional land use planning is generally lacking and the state avoids direct intervention apart from setting general rules and environmental goals that have land use consequences. The municipal spatial plan is not even binding for the municipality itself. Denmark constitutes an intermediate position with strong local planning competences, recently transferred from the regional level. The state level has formal influence on development in terms of the ability to make detailed spatial plans (state planning directives) and veto rights regarding planning on lower tiers. In the Netherlands the local level is strong too, but if deemed necessary both provinces and state can use several statutory instruments to influence spatial planning at the local level. However, a long tradition of co-ordination by consultation has restricted their use to extreme cases so far.

The planning instruments are summarized in Table 3, which also reveals the differences between the countries. Compulsory local land use plans provide guidelines for development in urban as well as rural areas in the Netherlands. Permissions for a variety of activities follow the directions in these land use plans. In Denmark, local planning primarily targets urban areas, but there are strict general guidelines for development in the so-called "rural zone". Dispensations are possible, but depend on the detailed planning themes in the municipality plans (formerly the regional plans) and/or protection of areas/objects. In Sweden as in Denmark, local planning is generally carried out in urban areas, while activities in rural areas are less regulated by plans and more according to opportunity.

Coping with urban pressure

Having discussed the general characteristics of the spatial system and the main instruments, we now analyze how planning practice deals with the three central themes related to changes in the rurban areas.

The Netherlands

Management of urban growth

Since the late 1980s, the compact city concept has been the leading planning discourse. The ambition of keeping town and country separate entities that dominated spatial planning during the 20th century (Hidding et al., 2000) is, however, under growing pressure now due to strong urban dynamics, especially in the most urbanized parts of the country. Urban regions consisting of networks of large and small compact cities transform rurban areas into metropolitan landscapes captured in a polynuclear metropolitan structure. Due to the spatial scale at which urbanization takes place, strategic plans of both the state and the provinces play an important role in guiding urban growth, and the local land use plan is the main planning instrument to actually control urban growth.

Management of rurban transformation

The restructuring of agriculture is an important factor in the process of rurban transformation. The decreasing number of farms is reflected in the transformation of former farm buildings for residential and non-farm economic activities. In provinces where the so-called Reconstruction Act applies, former farmers are even allowed to build one or more extra houses on their premises or alternatively, to build a house elsewhere, if they demolish old farm buildings. If a farm owner decides to do so, the building block, as specified in the local land use plan, loses its agricultural purpose. The costs for the demolition of the old farm buildings are supposed to be compensated for by the revenues generated by new red development. This regulation is known as 'red pays for red' ('red' meaning urban) (Janssen-Jansen, 2008).

The local land use plan plays a major role in controlling physical and functional changes in rurban areas, especially through the requirement of building and groundwork permits. An innovative strategy is to selectively accept new red development in rurban areas, as a means to generate (extra) money for spatial reconstruction in order to enhance nature, landscape and outdoor recreation. This kind of regulation is known as 'red for green'. A typical example of a red for green strategy is the development of 'new country estates', an idea that was launched by the Ministry of Agriculture, Nature and Food Quality in 1995 (Croonen et al.,1995). The new country estates, including one or a few large houses and covering at least 10 hectares, should contribute to better landscape qualities, recovery of natural systems and improve the attractiveness of the area for outdoor recreation. Today the 'red for

Table 3: *Important planning instruments of relevance for the three themes: urban growth, the transformation of rurban areas and ensuring green rurban areas. See further explanation in the text.*

	Planning instrument	***The Netherlands***	***Denmark***	***Sweden***
Plans*	National spatial plan[#]	Strategic, spatial vision (compulsory) Detailed state planning directive (optional)	Strategic, spatial vision (compulsory) Detailed state planning directive (optional)	No
	Regional spatial plan	Compulsory, strategic, spatial vision	Compulsory. Strategic visions with no detailed spatial designations	Voluntary, rarely done. Stockholm region exception
	Other spatial plans	Development oriented Supra-municipal level	No	No
	Municipal spatial plan	Compulsory, strategic, spatial vision	Compulsory, strategic visions and detailed designations	Compulsory, strategic, *not binding*
	Local land use plan	Compulsory for built up and *non-built areas.* Binding for the citizen	Compulsory for built up areas, and in case of major impacts. Binding for the citizen.	Compulsory for built up areas, and in case of major impacts. Binding for the citizen.
Zonation by legislation	General zonation rural – urban	No	Yes. Rural zone is generally reserved for agricultural purposes	Yes, but no direct consequences for planning
Area/object protection	General protection	Dams, dikes, dunes – for safety reasons	Natural and semi-natural biotopes. Buffers around some biotopes, objects and along the coast (no compensation)	Shores protected & several objects of biological & cultural value
	Protection of selected areas	Nature areas belonging to the ecological main structure (Natura 2000, nature monuments, ecological corridors), (compensation)	Conservation orders (compensation)	A) Nature conservation areas (compensation), B) Areas of national interest (also for other purposes than nature protection)

*: Unless otherwise indicated, plans are binding for the planning authority at the level concerned.
#: The term 'spatial plan' is used in the broad sense of territorial plan.

green' strategy is widespread (Evers et al., 2003). In some cases it is also applied on a larger spatial scale of town expansions or even of 'new towns', like the 'Blue City' in the province of Groningen.

Ensuring green rurban areas

In the Dutch metropolitan areas, green qualities are seen as part and parcel of the landscape as a whole, including areas used by agriculture. That is, green qualities are not confined to natural and semi-natural areas. Dutch metropolitan landscapes are multifunctional, in many cases fulfilling different functions at the same location, like agriculture, nature and water storage. Given the metropolitan context, the open character of green areas is highly valued, as illustrated by the well-known concept of the Green Heart (Faludi & van der Valk, 1994). The need for green recreational facilities is especially high in and near the cities, the more so as green open spaces in the urban domain have been drastically reduced after several decades of compact city policies. Here, the realization of new recreational areas and infrastructures is actively supported through, for example, the state program 'Green in and around the City'. Nature conservation and the realization of new nature - both by transforming agricultural areas

into nature and by agricultural management programs - play an important role too in keeping and strengthening the green qualities of rurban areas. The national policy for creating a national ecological main structure is the key here. To develop and improve green qualities of rurban areas, the controlling power of the local land use plan is not enough. The active transformation of green areas is realized through area-based and development oriented policies. These are supported by a wide range of instruments, including regional land readjustment projects, 'red for red' and 'red for green' strategies.

Denmark

Management of urban growth

In Denmark, the concept of the compact city and the ambition to keep town and country as separate entities was consolidated with the zonation act from 1970. In the Copenhagen region, however, already in 1947, the Finger Plan of Copenhagen distinguished between urban areas along main infrastructures and green wedges in between (Egnsplankontoret, 1947). The plan was a concept and guideline for development, but without legal status. In the last two decades, the concept of compact urban zones with 'green wedges' has been adopted by other Danish cities too. By 2007, the current elaboration of the Finger Plan of Copenhagen has been given legal status – and has thus become legally binding for the public authorities in the region.

As a consequence, it is very seldom that a new town is established detached from existing urban areas. Instead, new urban areas are established adjacent to existing towns or villages. In any case, new urban areas may only be established in 'urban zones'. A change of status from rural to urban must be part of the municipal planning process with due respect to public hearings, the state possibility of veto, and existing area / object protection. Thus, change of zonal status is a long process, which is very seldom done on ad hoc basis. Instead, it is part of the renewing of municipal plans every four years. In addition, before the planned urban development can start, a detailed local land use plan has to be approved – including a process of local hearings and possible adjustments.

Management of rurban transformation

As in the Netherlands, the 'urbanization' of rural areas is most profound close to the major cities and includes new residences and non-agricultural enterprises being established in former agricultural buildings (Busck et al., 2006; Præstholm & Kristensen, 2007). The possibility public authorities have to influence the speed of change in the rural zone is primarily related to two legal acts: the Planning Act and the Agricultural Act. According to the Planning Act, in order to construct new buildings in the rural zone, the owner must ask for dispensation from the rural zone restriction together with the required building permit. If the building is for agricultural purposes, the municipality can primarily challenge the location of the building (it has to be close to existing farm buildings), but not the right to construct a building. However, if the building is for non-agricultural enterprises, the municipality may decide not to give the building permit, based on conflicts with a range of interests, e.g. nature interests. Consequently, when applying for a building permit, some owners describe planned building as 'for agricultural purposes', even if this is very debatable (e.g. an arena for horse riding may be called a building for agricultural machinery) (Præstholm & Kristensen, 2006). If an owner wants to change the function of old buildings, the same principle is applied: if the new function is related to agricultural production, the owner may do so without asking permission.

The Agricultural Act regulates the possibilities people have to buy agricultural properties (Wulff, 1992). Firstly, the owner has to reside on the property, and may not parcel out an area for residential purposes except for a former owner or as part of a sale to another farmer. The intention is to prevent farms from being bought only for speculation. Secondly, if the property is larger than 30 hectares, the buyer has to complete a farming education to become familiar with agriculture. This does not, however, ensure that the buyer has the intention of living from farming. In sum, the Agricultural Act does not in reality ensure that farms will continue as farms – it only slows down the change.

Ensuring green rurban areas

In a Danish context, natural and semi-natural landscape elements are considered 'green' areas in a matrix of cultivated agricultural land. As a reaction to agricultural intensification and habitat fragmentation during the 20th Century, nature interest groups advocated for the protection of semi-natural areas, which resulted in the Nature Conservation Act during the 1970s (formerly §43, now §3) (Wulff, 1992).

Besides the general protection of semi-natural areas (Miljøministeriet, 2007), some areas have also been protected by selection. The green wedges in Greater Copenhagen have already been mentioned (Caspersen et al., 2006). Since the 1970s, it has been compulsory to include

designations of nature, landscape and cultural heritage areas in the municipal plans (the regional plan until the reform in 2007) as well as strategies to promote connectivity between natural habitats. Hence, green corridors (økologiske forbindelser) must be designated in the plans (Ministry of the Environment, 2007). In rurban areas, designation of afforestation areas is another means to ensure green areas. The Afforestation Program, adopted in 1989, aims to double the forest area in Denmark within 80-100 years. One of the main objectives is to provide green recreational areas for the population, in particular in so-called 'afforestation areas'. The different types of designations are meant to guide planning and administrative decisions in the rural zone, e.g. whether dispensation could be given for certain activities or not (Sørensen & Staunstrup, 2008). However, they do not require the authorities to secure a certain standard or improve qualities. In that respect, the EU regulations represent another tradition, e.g. Natura 2000 designations, because the municipalities are obliged to secure specific standards within these designations. Finally, nature conservation is an important instrument to ensure green areas in rurban regions.

Sweden

Management of urban growth

The concept of the compact city has just recently become part and parcel of Swedish national planning policy (Hansen et al., 2004), but the implementation is up to the municipalities.

Since the municipalities exert a planning monopoly, the outcome is dependent on their willingness to adhere to this principle and local circumstances may thus well influence the degree of compliance.

Management of rurban transformation

As in other Western countries, Sweden has experienced a transformation of the countryside in the vicinity of major cities. City dwellers have moved into former farmhouses, taken up permanent residence in their summer cottages and to some extent also built new homes.

The reduction in the number of farms due to structural adjustments in agriculture has provided the housing market with a good supply of dwellings with ample space and fair-sized buildings. Since anyone can buy an agricultural property, regardless of education or intention to farm, such residences attract people who want space, tranquility and maybe a horse or two. While most of the land may be leased out, the farmhouses become part of the urban economy and there is not much the authorities can do about it.

Although municipalities may resent the conversion of summer cottages into permanent residences, if people decide to live there, the municipality has to accept it. The municipality may put restrictions on local solutions for wastewater and solid waste treatment, but at a certain threshold the needs to manage residues often lead to a local plan implementing a sewerage system. Of course, this leads to increased costs for all residents, but at the same time, it leads to increased prices on houses and gardens and thus enhances the demand for living in that area.

Finally, building new homes in the countryside requires a building permit from the municipality. The current legislation does not curb building in the countryside as such, but only on inappropriate locations. The outcome is dependent on how planners and politicians view urban sprawl versus the desire to attract new inhabitants of certain affluence. It goes without saying that the outcome is up to local discretion and that management of rurban transformation in a sparsely populated country like Sweden may vary considerably.

Ensuring green rurban areas

Nature conservation in Sweden originated as a means to protect natural and semi-natural habitats from encroachment and extinction. The meaning of "green values" was thus confined to nature as opposed to culture and physically limited to the protection of landscapes that were unaffected by urban influence. During the 1960s and 1970s, however, the demand for outdoor recreation in the vicinity of major cities added a new dimension to the usage of forests and fields. Modern forestry and agriculture increasingly reduced the usefulness of the customary right to trespass on other people's property laid down in "allemansrätten". In order to secure areas for outdoor activities, large tracts of land were set aside as areas of national interest for recreation and summer cottages and the meaning of green areas thus gradually started to incorporate other values than nature itself.

The demand for "greenery" in rurban areas and the designations of recreational landscapes incorporating both nature and cultural heritage has since then become an integral part of municipal strategic planning. This is also reflected in Chapter 3 § 6 in the Environmental Code (Miljödepartementet, 1998), which specifically states that the demand for green recreational areas within and in the vicinity of urban areas shall be taken into consideration in land use planning. In this way, municipal planning can provide recreational facilities that go along with a resilient ecological structure. In addition to this, authorization to

set aside nature conservation areas has been granted to municipalities also; thus, local demands and decisions play a part in ensuring green rurban areas.

Nature interests are often best protected at a larger spatial scale than local municipalities. In order to create resilient ecological corridors on a larger scale, attempts at regional green planning have been made in the southernmost part of Sweden. In 2004, the county administration of Region Skåne issued a regional policy for a greener landscape (Region Skåne, 2004). Although the document is only a policy statement and not legally binding, the purpose is to encourage the municipalities to plan across municipal borders and make sure that ecological corridors connect in order to create a regional green network.

Discussion

We have analyzed similarities and differences in planning systems and practices for rurban areas in the Netherlands, Sweden and Denmark, with particular reference to urban growth management, the transformation of rurban areas and ensuring green rurban areas. In the following, we will discuss significant differences between the three countries and why they have evolved. Also, we will point to signs of convergence and ideas for inspiration between the three countries.

Explaining the differences between planning systems and policies

As revealed from the analysis, the path-dependency of the three planning systems influences the way what is said to be a common European challenge is perceived and managed in the three countries respectively. First of all, available space defines the relative scarcity of resources and the perceived urgency to control, protect and manage private property in the name of public interest. Although all three countries are market economies built on individual land ownership, regulations and restrictions abound where competition for land is at its highest and land use change is publicly judged for its common best purpose. Thus, the Dutch landscape in total is regulated by local plans, while in Sweden and Denmark local plans are restricted to urban areas and projects with a major impact.

Secondly, the relative importance of agriculture significantly influences rural planning policies. In Denmark, a strong farming lobby initially managed to keep urban pressure at bay by a zonation of land, and today, agricultural purposes are still privileged in rural areas. While not less important in the Netherlands, arable land use is not seen in a static way, but as one possibility among several, in a country were the focus is on multifunctionality, and urban, arable and nature seems almost interchangeable within recent 'red-green-blue' projects. Although the Dutch have a history of separating urban from rural, the concept of nature is less romantic and biologically inclined since even arable is often regarded as semi-nature, a view that conservationists in Sweden and Denmark would hardly share. This further emphasizes the Dutch instrumental view on land use, as part of a long engineering tradition, which has resulted in highly human-made landscapes. For these reasons, the Danes and the Swedes mainly protect nature (for whatever purpose) while the Dutch both protect and create nature.

Another striking feature is that although all three countries have a three-tier administrative system, again, the sheer density and scarcity of land have led the Dutch to take a more coordinated view on spatial development. This is reflected in the fact that the national and regional tiers issue plans from an overarching view of land use needs, the extensive use of area-based plans, and the consultative process, which aims at solutions that accommodate the interests of most or all stakeholders. In Sweden, however, the relative abundance of land has left the municipalities with strong autonomy and although the state regulates and sets goals for land use planning, it seldom interferes in local affairs. The sheer size of the Swedish municipalities and the longstanding tradition of local autonomy have so far meant that there has not been any real regional planning. A shrinking tax base today leads to ad hoc cooperation in sectors such as schools or waste treatment (Gossas, 2006), but joint land use planning is still absent. Thus, no real means exist to coordinate efforts to manage the transformation of the rurban landscape on a regional level. Since planning outside urban areas is up to local discretion, the desire to attract well-off residents may well offset any wishes to conserve land, which is seldom perceived as a problem. In Denmark, the zonation of land takes care of this issue at a general level, as long as it is effective. The zonation is also in line with the compact city concept and in a similar way to the Netherlands; the purpose is to protect scarce land resources. The adoption of the concept in Sweden however, is less a function of land scarcity in general, than an adherence to concerns for excessive fuel consumption and harmful emissions.

A similar analysis of planning systems and strategies in Finland, Hungary, Spain, France and the Netherlands resulted in a division of these countries into three cate-

gories according to the role and influence of public intervention in land use planning, ranging from weak (Hungary), moderate (Finland, Spain) to strong (France, the Netherlands) (Peréz et al., 2005). The heterogeneity of planning systems in EU member countries thus appears to be widespread, in spite of their common supra-national policy framework.

Possible convergence and inspiration between countries

As argued before, the planning contexts in the three countries are influenced by common trends and challenges – including urban growth, a tendency towards multi-functional land use in rural areas, governance issues and an increasing environmental awareness. In addition, all countries need to implement ever more extensive EU directives, implying an increasing need for a strong national level of planning and regulation.

Recent reforms in Denmark and the Netherlands may indicate convergence between the planning systems of the three countries. Denmark has abolished the regional planning tier, and thus adopted a structure similar to the Swedish system, with strong planning responsibility at the municipal level. However, in contrast to Sweden, some planning responsibilities of national and international importance (e.g. coastal management, Natura 2000, Water Framework Directive) have been transferred to the national level and the state can veto plans made by the municipalities, similar to the Dutch planning system. In Sweden some planners lament the fact that regional planning is absent and that national planning lacks a territorial dimension, being instead seen as a downpipe system without any coordination between sectors. Thus, some trends occur in all three countries. What seems to dominate, however, is a strong path dependency and influence of physical and socio-economic contexts, which accounts for the continued diversity of planning systems.

The tendencies mentioned above also imply that a growing number of interests and stakeholders are being involved in rurban planning. Under these conditions a further convergence in policy design for rurban areas might happen, with a focus on cross-sectoral planning at a local level, to accommodate the variety of interests and stakeholders. The recent reform in Denmark gives the municipalities more possibilities to do so, as their planning obligations now cover both urban and rural areas. The Dutch municipalities already have a rather long tradition in this respect, although town and country have long been considered as strictly separated entities. In Sweden, planning authorities at the local level are strong, but the widespread use of local discretion in planning decisions may restrain the development of a more coherent and integrated approach to planning of rurban areas.

Regardless of any potential convergence, two themes emerge from the analysis which may inspire the countries: the importance of supra-municipal planning, and the adaptiveness of planning. In the Netherlands, a planning tier with competence and authority at a spatial scale between national and municipal level is important for coordination of municipal planning and a safety net against short-sighted local decisions. ESDP likewise points to the importance of planning at regional level. Denmark and Sweden lack such a planning tier. As an alternative to a planning authority, a regional actor who can facilitate municipal cooperation may be an option. A Swedish example is seen in Region Skåne, which has encouraged voluntary cooperation between municipalities in Southern Sweden concerning landscape management planning (Region Skåne, 2004).

The culture of consultation in the Netherlands offers possibilities for differentiated planning solutions well-adapted to local contexts, as exemplified by area-based planning. The rigid zonation in Denmark, in contrast, offers a national framework, which ensures a level of homogeneity in planning practices throughout the country. A mix of systems might be beneficial to ensure locally adapted plans, which at the same time are in line with higher level policies. Currently, discussions about a subdivision of the rural zone in Denmark into 'robust' and 'sensitive' areas indicate a step in this direction. A similar call for adaptive and comprehensive planning, which takes the needs of both urban areas and the surrounding rurban areas into account was identified by Eklund (2005), based on a comparative study of development perspectives of rurban areas in Finland, Hungary, Spain, France and the Netherlands.

Conclusion

This study compares planning systems and instruments in the Netherlands, Denmark and Sweden. Although all three countries are EU member states and therefore subject to the same supra-national policy framework, the results show significant differences in approaches to managing growth in rurban areas. National differences relate to the physical and socio-economic contexts which characterize the three countries. These influence how planning is done, how problems related to urban sprawl are perceived, and

thereby the way the spatial planning system has developed. The differences in attitude as well as formal structure can to some extent be traced to variations in population density, the relative abundance of land and the role of agriculture.

The results also indicate that striving for a common European planning policy as advocated in the ESDP may underestimate the deeply rooted perspectives and structures of national spatial planning systems. It is therefore important to consider the contextuality of planning and to take local, regional and national conditions into account, when developing a supra-national perspective on planning. The performance of planning cannot be understood from a normative viewpoint only. It has to be anchored in its proper environment. In order to more thoroughly understand the differences and similarities and possible lessons to be learned across countries, a further investigation of current practice on a more detailed level is thus needed.

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