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Developing an Inventory and Typology of Land-Use Planning Systems and Policy Instruments in OECD Countries

Elisabete A. Silva,

Ransford A. Acheampong

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DEVELOPING AN INVENTORY AND TYPOLOGY OF LAND-USE PLANNING SYSTEMS AND POLICY INSTRUMENTS IN OECD COUNTRIES - ENVIRONMENT WORKING PAPER No. 94

By Elisabete A. Silva and Ransford A. Acheampong (1)

(1) University of Cambridge

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ABSTRACT

This report provides an overview of spatial and land-use planning systems in OECD countries[1] focusing on: (i) the governance systems across countries, (ii) the institutional and legal frameworks for spatial planning, and (iii) the various policy instruments used at different levels of territorial governance to articulate spatial development objectives, manage physical development and protect the environment. The report draws on available academic literature and policy documents. The analysis shows a strong relationship between governance models and authority and competences for spatial planning. *Spatial plans* at various spatial scales are used to create the preconditions for harmonising socio-economic development goals with environmental protection imperatives. *Environmental assessment* constitutes another key regulatory instrument. National plans, programmes, regional development and land-use plans as well as sector plans and policies are subjected to *Strategic Environmental Assessment*. Individual projects resulting from these policy instruments are subjected to Environmental Impact Assessment in most countries. In all countries, environmentally-related *permits* work together with environmental assessments to ensure that environmental considerations are taken into account in the siting of industrial installations and mega-infrastructure projects that would have significant impacts on the environment. The main challenges associated with environmental assessment in most countries include the political nature of the assessment process, the cost (time and money) of assessment particularly to businesses, limited consultation periods, limited technical capacity of institutions, the endeavour for independence and quality of the assessment and the absence of robust legislative frameworks.

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RÉSUMÉ

Ce rapport propose un tour d'horizon des systèmes d'aménagement de l'espace et d'urbanisme dans les pays de l'OCDE[2], qui met l'accent sur : (i) les systèmes de gouvernance des différents pays, (ii) les cadres institutionnels et juridiques de l'aménagement de l'espace, et (iii) les divers instruments employés aux différents échelons de gouvernance territoriale pour définir les objectifs de développement territorial, gérer le milieu physique et protéger l'environnement. Le rapport fait fond sur les travaux universitaires publiés et les documents d'orientation disponibles. L'analyse montre un lien étroit entre les modèles de gouvernance et l'autorité et les compétences en matière d'aménagement de l'espace. Les plans d'aménagement sont appliqués aux niveaux national et infranational pour intégrer les considérations sociales, économiques et environnementales dans les décisions d'allocation des ressources foncières et de répartition des activités. L'évaluation environnementale constitue un autre instrument réglementaire essentiel. Les plans et programmes nationaux, les plans régionaux d'aménagement et d'urbanisme ainsi que les politiques et plans sectoriels sont soumis à une évaluation environnementale stratégique. Les différents projets qui résultent de ces instruments font quant à eux l'objet d'une étude d'impact sur l'environnement dans la plupart des pays. Tous les pays ont couplé les autorisations liées à l'environnement à des évaluations environnementales, afin de faire en sorte que les considérations d'environnement entrent en ligne de compte dans le choix du site d'implantation des installations industrielles et des grandes infrastructures susceptibles d'avoir des incidences significatives sur l'environnement. Dans la plupart des pays, les difficultés que soulève l'évaluation environnementale tiennent surtout à la nature politique du processus d'évaluation, aux coûts qu'il induit (en temps et en argent), notamment pour les entreprises, à la brièveté des périodes de consultation, aux capacités techniques limitées des institutions et à l'absence de cadres législatifs solides.

Classification JEL: Q58, R50, R52, R58

Mots-clés: aménagement de l'espace, urbanisme, gouvernance, évaluation environnementale stratégique, évaluation de l'impact sur l'environnement

[2] Ce document et toute carte qu'il peut comprendre sont sans préjudice du statut de tout territoire, de la souveraineté s'exerçant sur ce dernier, du tracé des frontières et limites internationales, et du nom de tout territoire, ville ou région. Les données statistiques concernant Israël sont fournies par et sous la responsabilité des autorités israéliennes compétentes. L'utilisation de ces données par l'OCDE est sans préjudice du statut des hauteurs du Golan, de Jérusalem-Est et des colonies de peuplement israéliennes en Cisjordanie aux termes du droit international.

FOREWORD

The paper has been authored by Elisabete A. Silva and Ransford A. Acheampong (University of Cambridge, Department of Land Economy). The authors are grateful to delegates to the Working Party on Integrating Environmental and Economic Policies for helpful comments on earlier drafts of this paper. They would also like to thank Shardul Agrawala, Alexandros Dimitropoulos, Tamara Krawchenko, Walid Oueslati and Abel Schumann for comments on previous versions of the paper and Natasha Cline-Thomas for editorial assistance. The authors are responsible for any remaining omissions or errors. Work on this paper was conducted under the overall responsibility of Shardul Agrawala, Head of the Environment and Economy Integration Division.

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EXECUTIVE SUMMARY

This report provides an overview of spatial and land-use planning systems in OECD countries focusing on: (i) the governance systems across countries, (ii) the institutional and legal frameworks for spatial planning, and (iii) the various policy instruments used at different levels of territorial governance to articulate spatial development objectives, manage physical development and protect the environment. The report draws on available academic literature and policy documents.

The analysis shows a strong relationship between governance models and authority and competences for spatial planning. Institutions responsible for spatial planning derive their power and mandate from legislative instruments in the form of Acts, Ordinances and Decrees. For the majority of countries operating the decentralised unitary system of governance, spatial planning competences are shared between very powerful local authorities and central government institutions. Similar power-sharing arrangements exist in the regionalised unitary states where there exist elected regional governments with constitutional status and a high degree of autonomy. Competences rest mainly with local government authorities in most federal states, with the exception of Mexico where substantial powers are vested in the central government, and Germany where competences are shared between national and sub-national administrative authorities. In the centralised unitary states of Ireland and Israel, substantial powers rest with their national governments.

The study identified two broad typologies of planning policy instruments used across countries. These are: (i) *Development Plans*[3] (i.e. National policy and perspectives, Strategic regional plans, Structure/Master plans and Local/Sub-division plans) used at the national and sub-national levels to integrate the social, economic and environmental issues into land use allocation and activity distribution decisions, and (ii) *Development management instruments* (e.g. greenbelts and zoning policies) applied to control, regulate and or stimulate desired development outcomes.

Within the framework of the spatial planning system, environmental protection objectives are realised through the implementation of a range of regulatory and incentives-based economic instruments. *Spatial plans* at various spatial scales are used to create the preconditions for harmonising socio-economic development goals with environmental protection imperatives. *Environmental assessment* constitutes another key regulatory instrument. National plans, programmes, regional development and land-use plans as well as sector plans and policies are subjected to *Strategic Environmental Assessment*. Individual projects resulting from these policy instruments are subjected to Environmental Impact Assessment in most countries. In all countries, environmentally-related *permits* work together with environmental assessments to ensure that environmental considerations are taken into account in the siting of industrial installations and mega-infrastructure projects that would have significant impacts on the environment. The main challenges associated with environmental assessment in most countries include the political nature of the assessment process, the cost (time and money) of assessment particularly to businesses, limited consultation periods, limited technical capacity of institutions, the endeavour for independence and quality of the assessment and the absence of robust legislative frameworks.

Moreover, in the area of settlement growth and development management, regulatory instruments such as greenbelts, urban growth boundaries, rate-of-growth-controls, and cluster zoning policies are implemented to control sprawl, maintain agricultural activity in peri-urban and rural areas, and protect nature. These containment policies achieve their intended objectives by shaping the timing, location, magnitude and extent of development. The effectiveness of such containment policies has, however, been

[3] Development plans articulate broad vision and intentions regarding spatial development at various spatial scales.

questioned in terms of their equity impacts and economic efficiency. Critics oppose the use of greenbelts for example, due to the constraints they impose on land supply and urban expansion, and the attendant effects manifested by increased land prices, uncompensated loss of development rights and housing shortage in the greenbelt area, as well as leap-frog development.

Market-based instruments in the form of incentives are delivered through the planning system to encourage actors to take actions that would benefit the built and natural environment. In most countries, developers benefit from *Brownfield Redevelopment Incentives* to encourage them to build in inner-city areas whilst reducing unsustainable expansion into greenfield areas. *Transfer of Development Rights* programmes are used across Europe and the US to achieve environmentally-related objectives including protecting agricultural lands, preserving wildlife habitats and controlling development densities. This is achieved by reducing or eliminating development potential in places that should be preserved and increasing development potential in places where growth is wanted. *Use-value tax assessment* provides landowners with an incentive to maintain agricultural uses in urban and peri-urban areas by taxing agricultural land lower than other uses.

Overall, environmental objectives would be best achieved through the spatial planning system by effectively combining regulatory, incentive-based and fiscal (i.e. taxes and exactions) policies. For example, combining *Brownfield Redevelopment Incentives* and TDR programmes with urban containment policies such as greenbelts, could ensure continuous supply of land in existing built-up areas and reduce encroachment on protected areas. Similarly, scheduled infrastructure investment programmes could help strengthen the authoritativeness of spatial development plans, increase investor certainty and ensure that development activities are directed where they are planned to occur. Various types of development exactions and taxes could also be levied on developments that impact the environment. The revenues raised could be invested in offset and mitigation programmes for improved built and natural environment.

1. INTRODUCTION

The aim of this study is to provide an overview of spatial and land-use planning systems in OECD countries, and to account for differences across countries with respect to spatial planning systems. The specific objectives of the study are as follows:

1. To clarify differences in terminologies used across member countries with respect to spatial and land-use planning;
2. To draw on available literature to develop a classification (or typology) of policy instruments at different levels of territorial governance; and
3. Based on this classification, to develop an inventory of spatial and land-use instruments in OECD countries, indicating its evolution over time, and accounting for environmental, economic or regulatory challenges.

The study is intended to provide the relevant background for a series of subsequent studies on the economic and environmental effectiveness of spatial and land use policies across OECD countries.

The paper draws on available academic literature and policy documents on land use and spatial planning systems in OECD countries. These sources were identified through an internet, keyword-based, search of relevant documents. In this context, series of reports prepared under the European Observation Network Territorial Development and Cohesion Programme (ESPON), were found to be particularly useful as foundational reference materials. Available literature was reviewed on a country-by-country basis and assessed on the basis of its relevance for the following broad thematic areas: terminologies used across countries, governance models across countries, authority and competences for spatial planning, spatial planning traditions, spatial planning instruments, multi-level coordination, and mechanisms for environmental protection and biodiversity conservation.

In what follows, the meaning of spatial planning and the various terminologies used in OECD countries are presented in *Section 2*. This is followed by a discussion on the governance structure across countries in *Section 3*, focusing on how formal national governance structures influence the authority and competences for spatial and land-use planning across countries. *Section 4* proposes a typology of spatial and land-use planning systems and traditions for OECD countries. *Section 5* discusses the various planning policy instruments and mechanisms used to pursue strategic and regulatory objectives and promote multi-level co-ordination, while *Section 6* focuses on the description of instruments targeted to environmental protection. The report ends with a summary of the key findings of the study.

2. SPATIAL PLANNING AND TERMINOLOGIES USED ACROSS COUNTRIES

The concept of spatial planning originates from Europe and is as a generic term used to describe systems for managing spatial development. Healey (1997) defines *spatial planning* as a set of governance practices for developing and implementing strategies, plans, policies and projects, and for regulating the location, timing and form of development. The EU compendium of spatial planning systems and policies defines the term simply as the "methods used largely by the public sector to influence the future distribution of activities in space" (Commission of the European Communities, 1997, p. 18). Over the past two and a half decades, spatial planning has come to represent a neutral and unifying terminology used globally to refer to different practices and systems, with little common understanding of what it means in practice. The ambiguous nature and malleability of the term, however, has allowed for easy transferability and widespread acceptance in different contexts (Allmendinger and Haughton, 2009).

As with Europe where the term originated, different terminologies are used to describe the arrangements and processes for managing spatial development across OECD countries. In the documents reviewed, however, *land-use planning, urban and regional planning and spatial planning* were identified as the commonly used terms in most countries, alongside terms in countries' official languages. In most cases, these terms were used interchangeably to refer to planning as an *activity* and the accompanying institutional and legal arrangements for the formulation, implementation and realisation of spatial development objectives.

There appears to be a general consensus on the objectives that spatial planning seeks to achieve, despite the different terminologies used across countries and the lack of agreement on the definition and meaning of the term in practice. A survey of the literature found the key objectives of spatial planning to include: (i) co-ordinating the spatial dimensions and impacts of other sectoral policies; (ii) leading to an integrated and functional organisation of land uses and their regulation; (iii) balancing the demand for socio-economic development with the need to protect the environment; and (iv) achieving balanced distribution of the gains of economic development between regions, particularly in cases where the free market has failed to do so (Albrechts, 2004; Allmendinger and Haughton, 2009; Commission of the European Communities, 1997; Larsson, 2006; Owens and Cowell, 2011; Shaw et al., 1995).

Box 1. Land-use planning in OECD countries: Terminologies and objectives

Spatial planning, urban and regional planning and land-use planning are common terms used to refer to planning as an *activity*, and the accompanying institutional and legal arrangements for the formulation, implementation and realisation of spatial development objectives. *Spatial planning*, which has its origin from the EU, is used in all countries as a generic and neutral term to describe the arrangements and processes for managing spatial development. Spatial planning is used to achieve a number of objectives in the development process across OECD countries. These include: (i) co-ordinating the spatial dimensions of other sectoral policies; (ii) leading to an integrated and functional organisation of land uses and their regulation; (iii) balancing the demand for socio-economic development with the need to protect the environment; and (iv) achieving balanced distribution of the gains of economic development between regions.

3. GOVERNANCE STRUCTURE, LEGAL INSTRUMENTS AND COMPETENCES FOR SPATIAL PLANNING IN OECD COUNTRIES

3.1 Governance Structure

There is a strong relationship between the formal national governance structures and the spatial planning systems across OECD countries. Table 1 shows a classification of countries into four distinct types of governance models. The classification draws on early typologies of governance models developed by the ESPON project 2.3.2 (Governance of Territorial and Urban Policies from EU to Local Level) and the EU Compendium of Spatial Planning and Policies.

Table 1. Governance structure in OECD countries[4]

Centralised unitary States	Decentralised unitary states	Regionalised unitary states	Federal States
Ireland	Czech Republic	Chile	Australia
Israel	Denmark	Italy	Austria
Japan	Estonia	Portugal	Belgium
	Finland	Spain	Canada
	France		Germany
	Greece		Mexico
	Hungary		Switzerland
	Iceland		USA
	Korea		
	Luxembourg		
	Netherlands		
	New Zealand		
	Norway		
	Poland		
	Slovak Republic		
	Slovenia		
	Sweden		
	Turkey		
	United Kingdom		

The majority of OECD countries operate the unitary system of governance[5] with varying degrees of (de)centralisation. In *centralised unitary states*, power resides mainly with the central government. Although sub-national government structures and departments exist, they generally wield less power than the power delegated from the central government. The governance structure in countries such as Israel, Ireland and Japan is centralised with relatively less power in local authorities. For example, in Israel, although the country is divided into six statutory districts, these do not hold any intrinsic powers; all powers not specifically assigned by law to local governments or other sector agencies are constitutionally vested in the central government (Alterman, 2001; Callies, 1994).

[4] Further information on governance structure of EU member states of the OECD can be found at *http://extranet.cor.europa.eu/divisionpowers/countries/Pages/default.aspx*

[5] Unitary states are governed by a single central government power which has lower-tier administrative units that exercise powers delegated to them by the central government.

In Ireland, the central government has full legislative powers and exercises the bulk of administrative powers; the degree of autonomy enjoyed by devolved authorities is very low with strict supervision of lower tiers of government by central government. This is, perhaps, partly due to its relatively small size. Since 2012, however, administrative reforms with an underlying commitment to allow for much greater decision-making to local and regional government structures have been ongoing.

In *decentralised unitary states*, substantial powers have either been allocated to local authorities (as is the case of Denmark, Finland, Norway, Netherlands, Sweden) or there is an on-going devolution of substantial powers to local authorities and elected regional authorities (as is the case of United Kingdom, Czech Republic, New Zealand and Slovak Republic). Following the devolution of powers to Scotland, Wales and Northern Ireland, the United Kingdom is increasingly becoming decentralised and heading towards a quasi-federal state (Breuillard et al., 2007; Hazell, 2004). Further devolution of substantial powers is also expected to occur following the Scottish referendum in 2014. The process of decentralisation is ongoing in some other countries as well, but central government influence still remains very strong. In Turkey, despite the ongoing decentralisation process since 2010, the pre-eminence of the central administration over local government through administrative tutelage is guaranteed by Article 127 of the Constitution. The constitution of Slovenia was amended in 2006 so as to enable the establishment of Regions, which did not exist until then. Although twelve statistical regions have been established since 2012, these have not had their own government or their own competences. In addition, the new three-tier territorial framework adopted by Korea grants multi-level plan formulation competences to local governments and aims to achieve co-ordination among national and sub-national authorities in plan formulation and implementation (OECD, 2012).

Some decentralised unitary states such as Estonia, Iceland and Turkey operate a two-tier administrative system of central and local governments. There are no constitutional regions and regional administrative authorities in these countries. In the absence of regional administrative authorities in Iceland, however, there are regional committees based on regional cooperation between local governments, but they cannot be regarded as separate units of administration. Similarly, in Estonia, there are regional agencies of the state administration headed by county governors, who are appointed by the central government. Since 2010, Greece which hitherto operated a two-tier centralised administrative system has undergone extensive administrative reforms towards decentralisation. As of 2011, the country comprised seven decentralised administrations, thirteen regions and 325 municipalities.

In regionalised unitary states, power lies with national government and with tiers below the national level. There are elected regional governments with constitutional status, legislative powers and a high degree of autonomy. Portugal is an asymmetrical regionalised State with three levels of governance: central, regional (Autonomous Regions) and local level (Municipalities and Sections of Municipalities). Italy and Spain also, have powerful regions with high degree of autonomy constitutionally guaranteed.

Power is shared between national and regional governments in *Federal states* with each having autonomy in some spheres and being able to make laws. There may also exist elected regional governments with constitutional status, legislative powers and a high degree of autonomy. There are large differences between countries operating the federal system. In Switzerland, there is a confederation of states where the Cantons are the key players and their powers have deep historical roots (Muggli, 2004). Belgium, on the other hand, is an asymmetric federal state with a complex political system of government; the federal character is also relatively recent. Little by way of regional governance (i.e. governance across states) exists in Australia, with the exception of some specific structures designed to address particular regional needs such as the "Torres Strait Regional Authority" (Gurran, 2007; 2011).

3.2 Legal Instruments and Competences for Spatial Planning

3.2.1 Legal Instruments

Whether unitary or federal, centralised or decentralised, the governance structure provides the unique institutional environment and legal framework for the formulation, implementation and realisation of spatial development goals and strategies. These evolving institutional and legal apparatus in turn, dictate the authorities and competences for spatial planning at different spatial scales within each country. They also shape the various systems and instruments used for the designation and regulation of land-use activities, the mechanisms for attracting and co-ordinating desirable development as well as the systems for protecting the environment.

In all countries, institutions charged with the responsibility for spatial planning derive their power and mandate from legislative instruments in the form of Acts, Ordinances and Decrees. These legislations regulate the procedures for spatial and land use planning and provide the legal basis for sectoral issues such as building and housing construction, land administration and property rights, infrastructure development, environmental protection and biodiversity conservation.

In most OECD countries, particularly those operating the unitary system of governance, there are national-level spatial planning legislative instruments. Among the unitary states, countries such as Greece, Japan, Korea and Sweden have extremely complex planning legislation due to the large number of legislations and their interaction within and across administrative units at the national and sub-national levels (Edgington, 1994; ESPON, 2013; Gallent and Kim, 2001; Shapira et al., 1994; Shibata, 2002)

National-level legislative instruments exist in federal states such as Australia and Germany, whereas there are no legislative provisions for spatial planning at the Austrian, Belgian and Canadian federal level (Hladká, 2003; Millward, 2006). In all federal countries, legislations on spatial planning vary a lot from state to state or even from province to province. In Germany, for example, each of the 16 Landers has its own Planning Act (Turowski, 2002). There are also vast differences in land-use legislation across US states and even greater diversity at the local authority level given the size of the country (Gurran, 2011). Similarly, in Belgium, where spatial planning competences lie with the regions, each of the three administrative regions (i.e. the Flemish Region, the Walloon Region and the Region of Brussels-Capital) has its own legislation for spatial planning. The six states and two territories in Federal Australia also have their own urban planning laws and procedures, resulting in separate systems of planning and land use management, including separate administrative departments that oversee and regulate planning and land-use activities (O'Donnell, 2012).

3.2.2 Authority and Competences for Spatial Planning

The authority and competences for spatial planning refers to the tier of government administration which holds the main responsibilities in matters relating to spatial planning and development.

As shown in Table 2, each OECD country falls under one of three main types of authority and competencies for planning, namely;

- Countries with competences concentrated mainly at the sub-national level
- Countries with competences shared between national and sub-national levels; and
- Countries with competences concentrated mainly at the national level (i.e. centralised planning competencies).

It is worth mentioning that *sub-national* level is used here to denote all administrative structures below the national level. It, therefore, comprises both regional and local administrative authorities in countries that operate a three-tier administrative system, whereas only local governments in countries that operate a two-tier administrative system.

Although some form of relationship exists between the governance system (i.e. unitary or federal) and the levels of government which have the main authority for spatial planning, the overlap is not straightforward. Generally, most Nordic countries (i.e. Denmark, Iceland, Norway and Sweden) have spatial planning competences concentrated mainly at the sub-national (i.e. local authority levels) (Eskelinen et al., 2000; Fredricsson et al., 2013; Fritsch and Eskelinen, 2011; Galland, 2012; Olesen and Richardson, 2012).[6] Regional level planning is only weakly represented. Denmark, for example, has very strong local planning competencies recently transferred from the regional level following reforms in 2007. The national government, however, 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 (Busck et al., 2008; 2009).

Table 2. Levels of authority and competences for spatial planning

Competences mainly at the sub-national level	Competences shared between national and sub-national levels	Competences mainly at the national level
Australia	Finland	Chile
Austria	France	Ireland
Belgium	Germany	Israel
Canada	Greece	Mexico
Czech Republic	Hungary	
Denmark	Italy	
Estonia	Japan	
Iceland	Korea	
New Zealand	Luxembourg	
Norway	Netherlands	
Poland	Portugal	
Sweden	Slovak Republic	
Switzerland	Slovenia	
USA	Spain	
	Turkey	
	United Kingdom	

In Finland, on the other hand, spatial planning competencies are shared between the sub-national and national governments. In Finland, for example, there are two main levels—local and national—where the powers of planning are concentrated. Although the Regional Councils act as regional development agencies (ESPON project 2.3.2, 2006), local authorities have more powers and independence in land use planning matters. In Poland, the Act on Spatial Management from 1994 (amended in 2003) abolished a centralised and hierarchical system of spatial planning and vested communes with powers decisive, to a large extent, for the development of the whole country. The principle of compulsory and universal nature of making local spatial management plans has been abandoned; by virtue of law, it is an exclusive property of the commune council to pass local plans of spatial management in Poland (Gawronski et al., 2010).

[6] For Norway, see also: *www.regjeringen.no/en/topics/planning-housing-and-property/plan--og-bygningsloven/planning/id1317/*

Similarly, in six out of the eight federal countries (i.e. Austria, Australia, USA, Belgium, Canada and Switzerland) competences for spatial planning rest mainly with local government authorities. In Austria, some form of spatial planning powers remain at the three main territorial levels (national, regional and local), but the main level of power is the local one (ESPON project 2.3.2, 2006; Faludi, 1998; Schindegger, 2009). The main spatial planning powers in Belgium remain at regional level, but all Belgian territorial levels (i.e. municipalities (communes), provinces, regions and the federation), have competencies over this field (ESPON project 2.3.2, 2006; Royal Haskoning, 2007). In Canada, the Constitution delegates control of land use to the provinces (Millward, 2006). Based on the Tenth Amendment and Dillon's rule, local or municipal governments in the USA have the authority to make land use decisions in their territorial jurisdictions (Peña, 2002).

Planning competences are shared between national and sub-national administrative authorities in federal Germany, whereas they are mainly concentrated at the national level in Mexico. In Germany, planning takes place at four levels: the federal republic, federal states, regions and municipalities. In this framework, the Federation and federal states have some influence, mainly in laying down principles of spatial planning (ESPON project 2.3.2, 2006). Although planning is a shared task among all levels of government, the federal government in Germany does not create or implement plans, but rather sets the overall framework and policy structure to ensure basic consistency for state, regional and local planning (Schmidt and Buehler, 2007). On the contrary, local government authorities on land use are relatively limited in federal Mexico; the legal framework assigns overwhelming power to the federal government to shape spatial policy at different scales (Peña, 2012; Gazca, 2009).

In most OECD countries, particularly those operating the decentralised unitary system, competences for spatial planning are shared between sub-national and central government institutions. In some other countries (e.g. Ireland, Israel, Chile and Mexico), however, the planning systems are centralised. These countries also have high levels of administrative powers vested in their national governments. Israel's land-use planning system, for example, is a centralised one that combines top-down planning with bottom-up initiatives. Central government is involved through overseeing local-level planning decisions and through making binding national land-use plans (Alterman, 2001). Spatial planning is also used to disperse populations to both the northern and southern peripheries of Israel (Alfasi, 2006; Fenster, 2004). In Chile, the ministry of Housing and Urban Development has the primary responsibility for establishing land-use regulations and related guidelines, but efforts are underway to develop formal regional and local spatial planning (OECD/ECLAC, 2005).

Box 2. Governance structure and competences for spatial planning

The formal governance structure provides the unique institutional and legal context for spatial planning at different spatial scales in each country.

Most OECD countries operate the *decentralised unitary system* of governance where spatial planning competences are shared between very powerful local authorities, and central government institutions. Similar power sharing arrangements exist in the *regionalised unitary states* of Spain, Portugal and Italy, whereas in Chile substantial powers are vested at the national level. Spatial planning competences rest mainly with local government authorities in the *federal states* of Austria, Australia, USA, Belgium, Canada and Switzerland. In Mexico, however, substantial powers are vested in the central government. In federal Germany, competences are shared between national and sub-national administrative authorities. In the *centralised unitary states* of Ireland, Israel and Japan substantial powers for spatial planning rest with their national governments.

In all countries, the institutions charged with the responsibility for spatial planning at the national, regional and local levels, derive their power and mandate from legislative instruments in the form of Acts, Ordinances and Decrees.

4. SPATIAL PLANNING TRADITIONS IN OECD COUNTRIES

4.1 Typology of Spatial Planning Traditions: A Brief Review

A number of attempts have been made to develop a typology of spatial planning systems, mainly in EU member states. The first family of planning types was based on legal and administrative structures. Based on this, Davies et al. (1989) contrasted the English system based on the common law of England with other systems based on the Napoleonic codes. Drawing on the five European legal families defined by Zweigert et al. (1987), Newman and Thornley (1996) classified European planning systems in the Nordic, British, Germanic, Napoleonic and East European systems. Although the classification of planning systems according to legal families and administrative structure provides a very strong framework for understanding the context and operation of the planning systems, this approach tends to over-emphasise the formal systems of planning in principle, as opposed to the reality of their operation in practice (Nadin and Stead, 2008).

The Compendium of Spatial Planning Systems and Policies (Commission of the European Communities, 1997, pp. 36-37) identifies four major traditions of spatial planning based on fifteen EU Member States. This "ideal typology" of spatial planning systems and traditions shows how forms of planning are deeply embedded in the complex historical conditions of particular places beyond the legal and institutional arrangements (Nadin and Stead, 2008). The four main traditions of spatial planning identified are:

[a] A regional economic planning approach: This approach follows a very broad understanding of spatial planning, related to the pursuit of wide social and economic objectives, especially in relation to disparities in wealth, employment and social conditions between a country's different regions. Accordingly, the approach relies on a strong central government, having an important role in managing development pressures across the country and in undertaking public sector investments.

[b] A comprehensive integrated approach: The comprehensive integrated approach is characterised by an understanding of spatial planning which is rooted in a systematic and formal hierarchy of plans from national to local level and a co-ordination of public sector activities across different sectors. In contrast to the regional economic planning approach, this arrangement focuses specifically on spatial co-ordination rather than on economic development. Two sub-types have been identified, one related to federal systems and the other characterised by strong local authorities which share responsibility with the central government. The comprehensive integrated approach corresponds quite well to the family of Scandinavian legal systems.

[c] Land-use management: This tradition of spatial planning is grounded in the understanding of planning which is focused on the narrower task of controlling the change of land use at strategic and local levels. Accordingly, regulation is the main instrument for ensuring that development and growth are sustainable. Land-use planning tradition corresponds well to the family of British legal and administrative systems and has the much narrower scope or purpose of regulating land-use change.

[d] Urbanism: The urbanism tradition is strongly influenced by architectural aspects and concentrates mainly on issues of urban design, townscapes and building control. A sub-category of this tradition is the "new urbanism" trend which asserts traditional town planning values such as walkable neighbourhoods, mixed-use development and sustainable communities with healthy living conditions.

4.2 Typology of Spatial Planning Traditions in OECD Countries

Drawing on the classification developed by the EU compendium of spatial planning, the systems and traditions of spatial planning in OECD countries are classified into four types as shown in Table 3.

As shown in Table 3, the planning system in each country is characterised by a combination of the traditions identified. The "comprehensive integrated" tradition characterises planning in almost all countries, as a hierarchy of spatial planning instruments is used to articulate and realise spatial development objectives at different spatial scales. In France, Portugal, Ireland, Sweden and Hungary, the "Regional Economic Planning" tradition is the dominant one (Commission of the European Communities, 1997, Ptichnikova, 2012).

The styles of spatial planning within countries are also not static. For example, although the planning system of the UK has traditionally been concerned with land-use control and regulation, the past two decades have witnessed a shift away from regulation towards a more strategic focus. In England, for example, this strategic focus is grounded in strong emphasis on local-level decision-making driven by the Localism Act of 2011, which grants local governments general powers of competence.[7]

Korea's new planning system adopted the comprehensive planning approach concerned with broad visions, co-ordinated by a hierarchy of plans from the national to the local levels of planning (OECD, 2012). There is also a strong emphasis on regional economic planning at the provincial, metropolitan and 'capital region' levels as well as on *'special development regions'*.[8] Moreover, since the establishment of contemporary spatial planning in Estonia some 20 years ago, long-term county or regional-level strategic land use plans have existed alongside with "ad-hoc" county or regional-level plans prepared to meet specific development needs, such as the construction of major transport infrastructure that links different cities and regions.[9]

[7] See *www.legislation.gov.uk/ukpga/2011/20/contents/enacted* for further information on the Localism Act in England.

[8] They cover contiguous spatial zones that are usually under separate local authority administrations, and are of particular strategic importance to the overall national spatial economy.

[9] See *www.riigiteataja.ee/en/eli/531032014003/consolide#para7* for more information on Estonian Spatial Planning system.

Table 3. Typology of spatial planning traditions in OECD countries

	Comprehensive integrated	Land-use regulation	Regional Economic Planning	Urbanism
Australia	X	X		
Austria	X	X		
Belgium	X			
Canada	X	X		X
Chile	X	X		
Czech Republic	X	X		
Denmark	X	X		
Estonia	X	X		
Finland	X	X		
France	X	X	X	
Germany	X	X	X	
Greece	X	X		X
Hungary	X	X	X	
Iceland	X	X	X	
Ireland	X	X	X	
Israel	X	X		
Japan	X	X	X	
Italy		X		X
Korea	X	X	X	
Luxembourg	X	X		
Mexico	X	X		
Netherlands	X	X		
New Zealand	X	X		
Norway	X	X	X	X
Poland	X	X		
Portugal		X	X	X
Slovak Republic	X	X	X	
Slovenia	X	X		
Spain	X	X		X
Sweden	X	X	X	
Switzerland	X	X		
Turkey	X	X		
United Kingdom	X	X		
USA	X	X		X

x: Instrument available/used in country

The 'urbanism' tradition is the dominant feature of the planning systems of Greece, Italy and Spain. This planning tradition has strong architectural flavour and emphasises urban design and building control. Since the late 1990s, however, Greece for example, has witnessed a shift towards a more strategic spatial planning approach through the establishment of a new law for national and regional spatial planning (L. 2742/1999) (ESPON INTERSTRAT, 2013).

The 'new urbanism' tradition has become the dominant trend in planning since the early 1980s in Canada (Grant, 2003; Grant and Bohdanow, 2008) and the USA. This tradition has its origins in the US and emphasises traditional town-planning values such as walkable communities, mixed-use development and environmentally-sustainable communities with healthy living conditions. There has also been a shift in the scope of US planning, from purely regulatory intervention to an increased focus on comprehensive planning and the inclusion of economic development as an objective of planning intervention (Schmidt and Buehler, 2007). In Canada, current emphasis on strategic regional planning reflects the persistent need to employ the region as a platform in formulating and implementing public development strategies at the national, provincial and sub-provincial levels (Hodge and Robinson, 2007).

Box 3. Spatial planning traditions in OECD countries

Four main traditions characterise spatial planning in OECD countries. These are the (1) regional economic planning tradition; (2) comprehensive integrated tradition; (3) Land-use management tradition and (4) Urbanism/ New Urbanism tradition.

The *'comprehensive integrated'* and *'land-use management'* traditions characterise planning in almost all countries. Under these traditions, a hierarchy of spatial planning instruments is used to articulate and realise spatial development objectives at different spatial scales and across sectors; planning focuses mainly on regulating and controlling land use at strategic and local levels. In France, Portugal, Ireland, Sweden and Hungary, the *'regional economic planning'* tradition is the dominant trend of planning. The *'urbanism'* tradition is the dominant feature of the planning systems of Greece, Italy and Spain. This approach has strong architectural flavour and emphasises urban design and building control. The *'New Urbanism'* tradition has become the dominant trend in planning since the early 1980s in Canada and in the USA. This approach emphasises traditional town-planning values such as walkable communities, mixed-use development and environmentally sustainable communities with healthy living conditions.

5. SPATIAL PLANNING INSTRUMENTS IN OECD COUNTRIES

5.1 Spatial Development Plans and Policies

In most cases, spatial planning objectives are articulated and achieved through a hierarchy of instruments (i.e. perspectives and strategic plans, framework plans and local plans) and the accompanying legal and institutional apparatus at the national and sub-national levels. These instruments provide the basis for the integration of social, economic and environmental issues into land-use allocation and activity distribution decisions at the various spatial scales. In principle, higher-level instruments such as national policies and perspectives provide the overall framework and guidelines for planning at the regional level. The middle-tier instruments (i.e. strategic regional plans) in turn, provide the basis for the creation of detailed local land-use plans which determine permissible physical activities in particular locations and provide the basis for development control and management. Many derivative plans or instruments may be formulated to achieve particular strategic goals within this three-tier framework.

The EU Compendium of Spatial Planning and Policies (1997) identifies a four-tier system of planning instruments, namely: (i) national policy and perspectives, (ii) strategic or regional instruments, (iii) framework (Master plans), and (iv) regulatory instruments.

Table 4 shows the type of instruments used (or otherwise) at the national, regional sub-regional levels (i.e. district, province or municipal levels) for each country. Since all countries make use of regulatory instruments of mainly detailed zoning and subdivision plans at the very local levels, this is not included in the table. The spatial coverage and purpose of these instruments are discussed in relation to OECD countries in the sections that follow.

National Policy and Perspectives

This instrument identifies national governments' vision and articulates spatial planning policies and strategy at the highest level of governance. It often includes documents which give general guidance or performance criteria for development, and those which are spatially specific and are described as national plans. National policy and perspectives may cover the whole country, or significant parts or special areas. Typical examples of national-level spatial development plans include the Estonian National Spatial Plan (Estonia 2030+), the National Strategic Spatial Vision (Landsplanredegørelse) of Denmark, National Master/Outline Plan (n.35) of Israel, The Spatial Development Strategy of Slovenia (2004), and the National Planning Policy Framework (NPPF) of the UK.[10]

Most OECD countries make use of national-level spatial planning and policy instruments with the exception of the federal states of Australia, Belgium, Canada and the USA (see Kayden, 2000; Rothblatt,

[10] Further information on the National Spatial Plan of Estonia is provided at:
https://eesti2030.files.wordpress.com/2014/02/estonia-2030.pdf.
For additional information about the National Strategic Spatial Vision of Denmark, see:
http://naturstyrelsen.dk/planlaegning/landsplanlaegning/landsplanredegoerelse-2013.
For the principles of the National Outline Plan of Israel, see:
www.moin.gov.il/SubjectDocuments/Tma35_PrinciplesDocument.pdf.
For the Spatial Development Strategy of Slovenia, see:
www.mop.gov.si/fileadmin/mop.gov.si/pageuploads/podrocja/prostorski_razvoj/SPRS_angleska_verzija.pdf.
For more information about the National Planning Policy Framework of the UK, see:
www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf.

1994), as well as the unitary states of Chile, Spain, and Sweden where there is no formal planning at the national level. National spatial planning instruments differ considerably across countries in terms of the scope of issues they capture, but they also have certain common features. In most countries, they contain long-term policies spanning a period of between 10 and 20 years (e.g. the Estonian National Spatial Plan and National Outline Plan of Israel all span a period of 20 years, while the National Spatial Strategies of Japan cover a period of 10 years). The National Planning Policy Framework of England (within the UK), however, does not have any time scope. Generally, national-level instruments set out broad policy guidelines that may reflect the vision of national governments across the whole country over periods that do not necessarily coincide with the tenure of any particular ruling party.

Table 4. Use of planning policy instruments in OECD countries

	National Policy and Perspectives	Strategic (Regional Planning)	Framework (Structure Plans and Master Plan)
Australia		X	X
Austria	X	X	X
Belgium		X	X
Canada		X	X
Chile		X	X
Czech Republic	X	X	X
Denmark	X	X	X
Estonia	X	X	X
Finland	X	X	X
France	X	X	X
Germany	X	X	X
Greece	X	X	X
Hungary	X	X	X
Iceland	X	X	X
Ireland	X	X	X
Israel	X		X
Italy	X		
Japan	X	X	X
Korea	X	X	X
Luxembourg	X		
Mexico	X	X	X
Netherlands	X	X	X
New Zealand	X	X	X
Norway	X	X	X
Poland	X	X	X
Portugal	X	X	X
Slovak Republic	X	X	X
Slovenia	X	X	X
Spain	X	X	X
Sweden	X	X	X
Switzerland	X	X	X
Turkey	X	X	X
United Kingdom	X	X	X
USA		X	X

x: Instrument available/used in country

Planning instruments used at the national level (i.e. national plans, frameworks and perspectives) may or may not be legally-binding. For example, whereas the national spatial planning instruments of countries including Estonia, Korea, Czech Republic and Japan are legally-binding, similar instruments in most other countries serve advisory purposes to sub-national level planning. In most countries, national governments set out broad strategic visions and goals and allow sub-national governments the flexibility to interpret and incorporate them into plans and policies at lower levels. The underlying reason for this approach is to allow sub-national authorities to draw on national level visions and implement them in a way that is consistent with the unique social, economic and environment circumstances prevailing in their respective jurisdictions. In most instances, although national-level instruments are not legally-binding on sub-national authorities, mechanisms (formal and informal) exist for the participation of national and sub-national authorities and sector agencies in the plan making process, ensuring that lower-level plans are consistent with higher-level goals and objectives.

Strategic Instruments

These instruments operate below the state and above the municipality or district. They identify broad spatial development patterns and policies intended to be implemented through other lower tier instruments. Strategic instruments do not generally identify specific locations. They are likely to be incorporated or closely integrated with the expression of social and economic policy for the area. Strategic plans may be indicative in terms of the broad development patterns or programmatic in identifying specific quantities of growth and change for sub-areas. Their boundaries are often tied to the administrative tier of government which prepares them (region or province but they can be prepared for a 'functional planning region' such as a coastal zone. Some countries have more than one tier of strategic instruments. Examples of strategic instruments include Regional Plans (*regional udviklingsplan*) prepared in Denmark; Regional Plans in Japan; the Auckland Plan, 2040 in New Zealand; regional plans (*streekplan*) in the Netherlands; Provincial Development Plans in Turkey, Comprehensive Provincial Plans prepared in Korea,[11] and County-wide Spatial Plans prepared in Estonia.

Strategic regional planning instruments are common in most OECD countries with few exceptions (e.g. Israel). Although there are no constitutional regions in Estonia, Iceland and Turkey, regional planning occurs in these countries. What constitutes a 'region' (i.e. physical size, population and function) differs among countries. Regional-level planning may cover the jurisdiction of a single regional or local government authority and or combine a number of territories below the national level. In essence, some strategic planning policy instruments focus on 'functional planning regions', 'metropolitan/city regions' and 'special planning regions'. The definition and extent of these 'regions' differ considerably among countries. Generally, however, they cover contiguous spatial zones that are usually under separate local authority administrations, and are of particular strategic importance to the overall national spatial economy. Such regions often have special policies relating to urbanisation, sprawl and environmental management, economic development and competitiveness, and infrastructure development. In Italy, for example, the local government authorities are allowed powers for consideration of issues across important metropolitan areas (the *città metropolitana*).

Frameworks (Master plans)

They identify general spatial frameworks and criteria for the regulation of land uses over an area. They are concerned with specific locations. They may be binding or non-binding in respect of regulation,

[11] For the Regional *udviklingsplan*, see: *www.rn.dk/Service/English/Regional-Development.aspx*.
For more information about the Auckland Plan, see: *http://theplan.theaucklandplan.govt.nz/the-journey-to-2040*.
An example of a *streekplan* is available for download at: *www.noord-holland.nl/bestanden/programmabegroting2010/65_126506.pdf*.

but are generally implemented through lower tier plans. Generally, they cover the whole of a single municipality or district or several local authorities and towns depending on their size and the particular strategic objectives to be achieved.

At the level of the province, municipality or metropolis, planning instruments in the form of structure plans and master plans are used in most OECD countries. These are location-specific land use zoning and socio-economic policy instruments that are based on national and regional level instruments. Like all other instruments, frameworks, structure plans and master plans may be legally binding or not. They provide the basis for the preparation of detailed land-use and sub-division plans, and physical development management through the grant of development and building permits. Examples include the Provincial Structure Plan *(Provincial Structuurplan)* and Municipal Structure Plans *(Gemeentelijk Structuurplan)* prepared in the Flemish region of Belgium, Comprehensive Plans in Estonia, District Outline Plans in Israel, and Structure Plans (structuurplan/-visie) prepared in the Netherlands.

Regulatory instruments (Local/sub-division plans)

They are used to regulate development and for the protection of individual parcels of land. They may cover areas ranging from one site, a neighbourhood of one municipality, the whole municipality or more than one municipality. These instruments are in most cases, detailed sub-division schemes showing individual parcels of land designated for specific uses (e.g. residential, commercial and recreational) and streets connecting them. They are referred to as *local plans* in most countries. In the UK, however, local plans do not contain detailed sub-divisions of land into individual parcels. As regulatory instruments, local plans usually contain maximum and minimum land-use zoning standards, building standards and codes (e.g. building type and height), permissible development density and other local-level policies with which development in the areas they cover should comply. Local plans are mostly legally-binding and provide the basis to regulate development, construction and land use. In most countries, the development control processes is managed through permitting procedures. Permits in most cases cover construction, building regulation, change of use and demolition. For any development to be granted a permit, it must comply with the zoning policy and regulatory standards stipulated by the local plan. Different names are given to the main permits issued in different countries. These include *planning permission* in the UK and Ireland, *Byggetilladelse* in Denmark, *Licencia de edificación* in Spain, *Permis de construire* in France, *Baugenehmigung* in Germany, and *Licenciamento Municipal de Obras Particlares* in Portugal. In most cases, minor building works are exempted from planning and building permit regulations.

Box 4. Spatial planning instruments: Development plans and policies

Spatial planning instruments in the form of Development Plans are used at the national and sub-national levels to integrate social, economic and environmental issues into land use allocation and activity distribution decisions.

Most OECD countries make use of *national policy and perspectives*, with the exception of Australia, Belgium, Canada, Chile, Spain, Sweden and USA where there is no formal spatial planning at the national level. *Strategic regional planning instruments* are also common in most countries. They identify broad spatial development patterns and policies intended to be implemented through other lower tier instruments. At the level of the province, municipality or metropolis, planning instruments in the form of *structure plans and master plans* are used in most OECD countries to implement location specific land use zoning regulations and socio-economic development policies. In all countries, *regulatory instruments* in the form of local/sub-division plans are used to regulate and control development and for the protection of individual parcels of land.

5.2 Settlement Growth and Development Management Instruments

In all OECD countries, a range of policy instruments are applied to control, regulate and or stimulate desired development outcomes. Development management instruments affect the decisions of actors in

development process, and the overall emergent dynamics of the land and property markets by shaping the timing (i.e. when), the location (i.e. where) and the nature and extent (i.e. how much) of physical development. Development management instruments are also applied at the urban, city or metropolitan scale to: (i) manage growth (e.g. sprawl control), (ii) protect the public health and safety by preventing and mitigating negative externalities, (iii) capture the value accruing from public sector investments, and (iv) raise revenues in the development process for continuous investment in infrastructure.

The various instruments applied in OECD countries to manage the physical development process are classified in three main categories. These are regulatory instruments, incentive-based instruments, and fiscal instruments in the form of exactions, taxes and fees. This classification is based on reviewed literature. Table 5 presents an overview of these three classes of development instruments. In the paragraphs that follow, examples from selected countries are cited to illustrate how these instruments work in practice.

Regulatory instruments

The use of regulatory instruments in the development management process often involves the imposition of restrictions or definition of boundaries to limit the choice of actors in the land and property markets (Tiesdell and Allmendinger, 2005). In most OECD countries, regulatory instruments in the form of *greenbelts, zoning policies, development moratoria, rate-of-growth controls, urban growth boundaries* and *urban service boundaries* are applied as growth management tools. In principle, such containment policy instruments are intended to control the timing and extent of development by directing activities to areas where development is intended to occur.

Table 5. Development management instruments applied in OECD countries

Regulatory instruments	Incentive-based instruments	Fiscal instruments
Development moratoria	Brownfield Redevelopment Incentives	Dedications (e.g. Infrastructure levies)
Greenbelts	Capital gains tax	Development Impact Fees
Rate of growth controls	Conservation easements	Land value tax
Urban growth boundaries	Historic Rehabilitation Tax Credits	Linkage fees
Urban services boundaries	Joint development	Property tax
Zoning policies	Location-efficient mortgages	Real Estate Transfer Tax
	Special economic zones	Special Assessment Tax
	Split property tax	Sub-division Exactions
	Tax increment financing	Tap Fees
	Transfer of rights development	
	Use-Value Tax Assessment	

In all OECD countries, various zoning policies are implemented to limit sprawl, manage the type and extent of development and maintain agricultural activity and rural landscape in peri-urban areas. *Up-*

zoning[12], *mixed-use zoning*[13] and *minimum density zoning*[14] policies are implemented to encourage higher density development in urban areas. In rural areas, *down-zoning*[15] *and large-lot zoning*[16] are implemented to ensure lower densities. *Cluster zoning*, is implemented in rural areas to ensure that houses are concentrated together on small lots or a particular part of a parcel of land, leaving the remainder land in open space. Other specific land use regulations such as right-to-farm laws are used alongside rural zoning policies to maintain agricultural activity and rural landscape in peri-urban areas.

The use of *greenbelts* to regulate settlement growth is mainly a European tradition that dates back to the 17th and 18th centuries (Amati, 2012). A greenbelt is a zone of open land dividing a city from its surrounding countryside. In principle, all development activities are prohibited in the areas within the greenbelt. Many cities in OECD countries including Vienna, London, Barcelona, Budapest, Berlin, Tokyo, Toronto, Vancouver, Washington DC, Chicago, Boulder, Sydney, Melbourne, and Seoul have greenbelt policies. In Belgium, some major towns retain continuous greenbelts which serve as buffers between the city core, industrial districts and outlying suburban areas or neighbouring agricultural areas (e.g. Sonian Forest and Boi de la Cambre). In 1958, eight buffer zones of green belts, covering an area of 1 500 km², often called "the Green Heart", were designated around the Randstad region—the most urbanised part of the Netherlands— as a way of controlling sprawl and maintaining urban greenery (OECD/China Development Research Foundation, 2010). In order to ensure that development pressures are shifted away from the designated green areas, strong land use controls are enforced through comprehensive land use plans at the national and sub-national levels. This is accompanied by government purchase of land in the designated green areas.

In Seoul, Korea, a greenbelt spanning a 15km radius surrounds the densely inhabited areas of the city. The Seoul greenbelt was designated to serve as an 'Oxygen tank' to ensure minimum natural preservation and is regarded as one of the few successful green belt experiences in Asian mega-cities (OECD/ECLAC, 2005). In Ontario, Canada, The Greenbelt Plan, which was established under the Greenbelt Protection Act of 2005, designates a greenbelt zone consisting of approximately 1.8 million acres of land in the Greater Toronto metropolitan area. The aim is to address urban sprawl, preserve agricultural land and protect the environment.[17]

Despite the environmental benefits resulting from the use of greenbelts, the instrument's economic efficiency and equity impact (i.e. who pays and who benefits) have been questioned. Greenbelts are seen as the most restrictive form of urban containment policy. In most countries, critics oppose greenbelts because of the constraints such policy puts on land supply and urban expansion (Bengston and Young, 2006; Cheshire and Sheppard, 2002; Dawkins and Nelson, 2002; Lee and Linneman, 1998). The attendant effects often manifest in increased land prices, uncompensated loss of development rights in the greenbelt

[12] Up-zoning involves the rezoning of areas of previously lower density uses to higher density uses.

[13] Mixed-use zoning policy, unlike traditional exclusionary zoning, establishes standards for blending various uses such as residential, commercial, civic and light industrial with the aim of achieving high density, compact urban development.

[14] Minimum density zoning specifies the minimum allowable development density or floor area ratio, rather than maximum density found in most traditional zoning ordinances with the aim of encouraging compact development through the increased density minimum.

[15] Down-zoning involves rezoning of land for a less intensive use than the previously permitted use. For example industrial land could be rezoned as residential.

[16] Large lot zoning establishes a large minimum lot size requirement in residential zone districts where agricultural operations exist in order to limit development densities whilst preserving rural character as well as agricultural land and environmentally sensitive.

[17] For further information, see: *www.mah.gov.on.ca/Page189.aspx*.

area, housing shortage in areas within the greenbelt as well as leap-frog development into areas beyond the greenbelts. These in turn, result in unsustainable urban expansion and commuting patterns.

In countries such as the US, Switzerland and Japan, *urban growth boundaries (UGBs*) and *urban service boundaries (USBs)* are used as alternative growth management instruments to greenbelts (Jun, 2004). UGBs take the form of officially mapped dividing lines drawn around urban areas to limit encroachment into surrounding rural areas. Similar to greenbelts, UGBs promote densification within the designated boundary and restrict development on non-urban land outside the boundary. UGBs are also intended to discourage speculation at the urban or suburban fringe; protect open lands, including farms, watersheds and parks, and promote more compact, contiguous urban development. Unlike greenbelts however, UGBs are more flexible growth management instruments set for given periods of time — typically 20 years— and are subject to revision. The evaluation of the effectiveness of a UGB depends on the size of the area where urban use is allowed (Lee and Linneman, 1998; OECD/China Development Research Foundation, 2010; Yokohari et al., 2000). As evidenced by experiences in Japan, New Zealand and Korea, if the area where urban development is permitted is too large, which often happens due to political pressure, UGBs have only a limited effect on urban growth. If the area is too small to sustain development pressure, UGBs may be associated with adverse effects, such as increases of land prices, affordable housing problems within the boundaries, and leapfrog type of development beyond the restricted areas (OECD/China Development Research Foundation, 2010).

Like UGBs, USBs consist of a line drawn around a city or metropolitan area for the purposes of using infrastructure service provision to control the timing and pace of urban development. USBs achieve their objective by delineating areas beyond which certain urban services such as sewer and water will not be provided as a way of discouraging development in those areas. They are often linked with adequate public facilities ordinances that prohibit development in areas not served by specific public services and facilities. In some areas using USB, a tearing system is adopted to direct public infrastructure into new areas in a particular sequence. A typical example is the Priority Funding Areas initiative in Maryland in the US which focuses infrastructure investment in the city centre (Bengston et al., 2004).

Moreover, growth management strategies are implemented in most OECD countries in the form of *rate-of-growth control policies* such as development moratoria and growth-phasing regulations. *Development moratoria* involve the use of the permitting process to regulate the timing of development in rapidly growing communities (Bento et al., 2007; Turnbull, 2004). This is achieved through a prohibition on the issuance of building permits in the designated areas affected by the policy. In some cases, a limit is put on the maximum number of permits that could be issued annually instead of a complete prohibition of permits. *Growth-phasing regulations* are milder forms of moratoria implemented to control the number of building permits issued in a particular area (Bengston et al., 2004; Cho, 2002). The main rationale behind such rate-of-growth control polices is to halt development in rapidly urbanising areas until infrastructure is provided or to use the permitting process to ensure that development matches with available infrastructure (Bengston et al., 2004).

Fiscal instruments—taxes, exactions and fees

Fiscal instruments operate in practice as taxes levied on developers to raise revenues and exactions or capital payments charged as commuted sums to offset the impact of development; in some cases, facilities may be dedicated to a community affected by the development (Evans-Cowley, 2006). As market-based instruments, they draw their legitimacy from principles of capturing the positive externalities accruing from public investments, or mitigating the negative externalities resulting from the development process. Typical examples of these instruments applied in OECD countries include property taxes, special assessment taxes, land-value taxes and development exactions (i.e. impact fees, dedication, fee-in-lieu, tap fees and linkage fees).

In all OECD countries, taxes are levied on properties by the governing authority of the jurisdiction in which the property is located. *Property taxes* are levied on the whole value of real estate (i.e. the combination of land, buildings and improvement to the site). Property taxation constitutes a major source of public revenue through the spatial development process in a number of OECD countries. For example, taxes on property as a percentage of total taxation in 2011 was significant in countries such as Korea (11.4%), United Kingdom (11.6%), USA (12.4%) and Canada (10.9%) compared with the OECD average of 5.4%. Countries such as the Slovak Republic, Mexico and Sweden have relatively lower contributions of 1.4%, 1.5% and 2.4% respectively (OECD, 2014).

Different types of taxes on properties exist in OECD countries. For example, a *special assessment tax* may be proportionately levied on homeowners and landowners for parcels of real estate which have been identified as having received a direct and unique "benefit" from public infrastructure projects. Such charges may be levied against land when drinking water lines and sewers are installed or when streets and sidewalks are paved. A *land value tax* is levied on the unimproved value of land only. Levied as *ad valorem* tax on land, it disregards the value of buildings, personal property and other improvements.

Development exactions are widely used across OECD countries to ensure that a property owner provides a capital payment or property in order to initiate land development. They are burdens or requirements placed by local governments on developers as a condition of development approval. These exactions require developers to dedicate land or pay for at least a portion of the costs of the capital improvements needed for public facilities. They are intended to protect public health and safety by ensuring that communities are protected from the negative externalities of urban growth. The rationale, principles and various types of exactions are discussed in Evans-Cowley's 2006 work. Only a summary of these instruments is discussed in this paper, placing particular emphasis on how they work in practice.

In most countries, exactions are levied in the form of *impact fees*—scheduled charges applied to new development to generate revenue for the construction or expansion of capital facilities located outside the boundaries of the new development (off-site) that benefit the contributing development (Evans-Cowley, 2006). The Community Infrastructure Levy Policy in the UK[18] is a case in point. This is a new levy that local authorities in England and Wales can choose to charge on new developments in their area to fund new infrastructure required by the council, local community and neighbourhoods. In other instances, exactions take the form of *dedication,* by which developers are required to donate land or public facilities for public use. The *tap fee* is another form of exaction charged on utility connections in most countries to allow cost-recovery in tying new development into existing infrastructure network (Brueckner, 1997; Ihlanfeldt and Shaughnessy, 2004). The *linkage fee* is an exaction that is used to pay for the secondary effects of development. Linkage fees are used to collect money from large scale commercial, industrial, and multifamily developments to provide for e.g. affordable housing, job creation, and day care facilities. In the USA, for example, linkage fees are primarily used by local governments in areas where the cost of housing is extremely high, such as California and Massachusetts (Evans-Cowley, 2006).

Incentive-based instruments

In all OECD countries, a range of instruments are delivered through the planning system to stimulate markets and to encourage and attract more desirable activities to locations of strategic interest. Such instruments are also used to encourage actors to take actions (such as redevelopment, conservation, and historic preservation and rehabilitation) aimed at improving conditions of the built environment and protecting the natural environment, which otherwise would not occur. Incentive-based instruments in essence, take the form of subsidies, tax credits, development rights and direct state action in the provision of land (through expropriation or compulsory acquisition) and infrastructure to attract investments.

[18] See *www.gov.uk/government/policies/giving-communities-more-power-in-planning-local-development/supporting-pages/community-infrastructure-levy* for additional information on the Community Infrastructure Levy Policy in the UK.

In most countries (including the US, UK, Canada and Australia), developers benefit from *Brownfield Redevelopment Incentives* to encourage them to build in inner-city areas. Contrary to development on greenfield sites, brownfield (re)development poses a number of challenges to developers (McCarthy, 2002). These include expensive land prices at inner city locations, demolition cost of existing structures, clean-up/decontamination cost in previous industrial sites, and limitations imposed by existing zoning regulations. Brownfield redevelopment however, contributes towards regenerating areas experiencing decline and provide many benefits including averting unsustainable urban expansion, increased asset value of the site and the surrounding site, increased tax base, increased employment, environmental protection and effective use of existing infrastructure. Thus, the provision of incentives in these areas is considered essential in reducing development costs whilst helping to achieve sustainable development outcomes. In the UK, for example, a 60% brownfield housing development target was set by the government in 1998 (raised to 80% in 2008) as a way of regenerating towns and cities and delivering new housing supply on previously developed land (Wong and Bäing, 2010). To achieve this, tax incentives and other assistance such as dereliction aid and gap funding schemes are provided to eliminate barriers for brownfield development. In the US, the Brownfield Act of 2002 sets out the arrangement for providing economic incentives and liability exemptions to developers in Brownfield sites. Prior to the enactment of the Brownfield Act, the federal government, through the 1980 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), mobilised tax revenues from chemical and petroleum industries, which went to a trust fund (commonly known as Superfund) for cleaning up abandoned or uncontrolled hazardous waste sites (OECD/China Development Research Foundation, 2010).

Historic Rehabilitation Tax Credits exist in most countries to provide incentives for the public to preserve and rehabilitate historic places and cultural heritage. In the US, current tax incentives for preservation, established by the Tax Reform Act of 1986 (PL 99-514; Internal Revenue Code Section 47) include a 20% tax credit for the rehabilitation of certified historic structures and a 10% tax credit for the rehabilitation of non-historic, non-residential buildings built before 1936 (National Park Service, 2012). In the Brussels Capital Region of Belgium, under the Ordinance on the Conservation of the Built Heritage adopted in 1993, heritage property owners are offered basic incentives: income from unlet listed property is exempt from property tax, listed property located in and willed to the Region is exempt from inheritance tax while owners of listed buildings who open their properties to the public can deduct certain maintenance costs from their income taxes. A portion of building repair costs can be deducted from income earned on heritage buildings in Denmark. Owners of listed buildings are also entitled to grants compensating them for maintenance and repair expenses exceeding the "normal" costs associated with non-listed buildings; a building's rate of "decay per year" is used to calculate the value of its grant, ranging from 20-50% of the repair costs (McCleary, 2005).

In France, registered or listed historic monuments that are open to the public can deduct 100% of their expenses, while such properties not open to the public can deduct 50%. In Germany, owners of non-income producing protected buildings may deduct all their eligible maintenance and rehabilitation expenses from their taxable income over a period of ten years, at a maximum rate of 10% per year. In Japan, tax concessions to finance private historic preservation are enmeshed in a highly complex set of rules, conditions, qualifications, and exceptions; most of the benefits relate to the transfer of money and property earmarked for preservation, or the regular duties associated with property ownership rather than deductions or credits based on rehabilitation projects (McCleary, 2005). Property given or bequeathed to an eligible nature-conservation organisation has been exempt from capital gains tax in Australia since 2000. Heritage properties are completely exempted from property taxes in Turkey.

Transfer of Development Rights (TDR): TDR is a market-based incentive programme intended to reduce or eliminate development potential in places that should be preserved by increasing development potential in places where growth is wanted (Pruetz and Standridge, 2005). TDR programmes are grounded in the assumption that the development rights of a parcel, as part of the right to convert, can be sold and

used in another parcel. The typical TDR programme involves the landowner of a preservation or sending zone (or parcel) selling the development rights to a developer who will use these rights in an area designated as development or receiving zone (or parcel). In general, the receiving area allows for higher density of construction than the base density established by law through density bonuses provided by local governments, thereby creating incentives for developers to buy the development rights (Tavares, 2003). Successful TDR programmes require strict sending-area regulations, market incentives and or ways for development to gain bonus density without using TDR (Pruetz and Standridge, 2005).

TDR programmes are used to achieve a wide variety of objectives including protecting agricultural lands, preserving wildlife habitats and controlling development densities in areas with limited infrastructure or public services (Johnston and Madison, 1997). This instrument is widely used in the USA where it was first introduced in New York City in 1916. A zoning ordinance permitting lot owners to sell their unused air rights to adjacent lots, allowed the "receiving" lot to exceed the height and setback requirements (Johnston and Madison, 1997). TDR programmes exist in other OECD countries such as New Zealand, France, Italy, and Turkey. Despite its popularity in the USA, numerous legal issues and administrative complexity represent some of the key challenges confronting its application in other countries.

Other incentive-based instruments used across OECD countries are use-value tax assessment, Split-rate property tax and tax increment financing. *Use-value tax assessment* provides landowners with an incentive to maintain agricultural uses in urban and peri-urban areas by taxing agricultural land use at a lower rate than other uses (Anderson and Griffing, 2000). In Japan, some metropolitan areas including Tokyo levy lower property taxes on land designated for agricultural uses (OECD/China Development Research Foundation, 2010). *Split-rate property tax* is used to encourage redevelopment of obsolete buildings and facilitate revitalisation in older central cities by placing proportionally higher taxes on land than on built structures. This makes it more costly to hold on to vacant or underutilised centrally-located sites. Split-rate property tax is used in many OECD countries including France, Australia, US, Denmark and Finland (OECD/China Development Research Foundation, 2010). Split-property tax can provoke premature land conversion in outlying areas and therefore requires effective regulatory mechanisms to avoid such displacement effects. *Tax increment financing* is used as public financing method to provide subsidies for redevelopment, infrastructure provision and other community-improvement projects in many OECD countries.

Box 5. Settlement growth and development management instruments

A range of policy instruments is applied to control, regulate and stimulate desired development outcomes in OECD countries. Regulatory instruments such as greenbelts, zoning policies, rate-of-growth-controls, and urban service boundaries are applied to control sprawl, protect the environment and coordinate infrastructure investment by shaping the timing, location and extent of physical development. Fiscal instruments operate in practice as taxes and exactions levied on developers to raise revenues and mitigate the negative impacts of development. Incentive-based instruments take the form of subsidies, tax credits, development rights and direct state action to encourage economic agents to take actions aimed at improving the conditions of the built environment and protecting the natural environment.

5.3 Mechanisms for Vertical and Horizontal Co-ordination

Various mechanisms (formal and or informal) exist to ensure multi-level co-ordination at the various spatial scales and sectors of spatial planning. Varying degrees of vertical co-ordination (co-ordination between various spatial planning instruments and the institutions that prepare them at the national and sub-national levels) and horizontal co-ordination (co-ordination between sectoral policies which have territorial impacts and the agencies/departments that prepare them) exist in OECD countries.

Table 6 identifies the degrees of multi-level coordination in the field of spatial planning using the indicators developed by the ESPON project 2.3.2 for a similar assessment among EU member states. The ESPON project identifies the following four categories of multi-level coordination:

(A) Countries in which there is both horizontal and vertical co-ordination;

(B) Countries with mainly vertical co-ordination and weak or no horizontal co-ordination;

(C) Countries with mainly horizontal co-ordination and weak or no vertical co-ordination; and

(D) Countries with a weak horizontal and vertical co-ordination.

The various spatial planning instruments and accompanying administrative institutions which have planning competences, as well as the legal instruments at the different spatial scales of planning, provide the main mechanisms for vertical co-ordination. In most countries, formal ministerial and administrative structures support sectoral planning and horizontal co-ordination. These agencies are expected to take a comprehensive, multi-sectoral, long-range view of spatial issues, define priorities, and coordinate the plethora of sectoral policies (ESPON project 2.3.2, 2006).

Mechanisms for multi-level coordination and joint work between administrative units may be formalised or less formalised. In the UK, the 2011 Localism Act (under the so-called 'duty to co-operate' arrangement) places legal duty on local planning authorities, county councils and public bodies to engage constructively, actively and on an ongoing basis in plan preparation in the context of strategic cross-boundary matters.[19]

Table 6. Degree of vertical and horizontal co-ordination in spatial planning in OECD countries

Strong vertical and horizontal co-ordination	Mainly vertical co-ordination	Mainly horizontal co-ordination	Weak vertical and horizontal co-ordination
Australia	Austria	Greece	Chile
Canada	Belgium	Luxembourg	Czech Republic
Denmark	Hungary	Slovenia	Italy
Estonia	Iceland	Sweden	Korea
Finland	Israel	UK	Mexico
France	Japan	USA	Portugal
Germany	New Zealand		Spain
Ireland	Norway		Turkey
Netherlands	Switzerland		
Poland			
Slovak Republic			

Similarly, in Iceland, although regional-level authorities are non-existent, two or more municipalities, can, at the initiative of the relevant local authorities or the Planning Agency, prepare a regional plan were the aim is to co-ordinate the policy of local authorities on the development of settlement and land-use over a period of at least 12 years (article 12 in 73/1997). In Ireland, an advisory regional authority carrying out regional planning functions assists a combination of voluntary horizontal linkages between local authorities, along with state sector agencies responsible for infrastructure and services (ESPON project 2.3.2, 2006). In France, the *Délégation Interministérielle à l'Aménagement du Territoire et à l'Attractivité Régionale* (DATAR) serves as an inter-ministerial regional development body to co-ordinate spatial planning at the national level.

[19] See: *www.legislation.gov.uk/ukpga/2011/20/contents/enacted*

Within the Israeli Planning system, the use of unofficial procedures to synchronise long-term plans with detailed planning and planning applications at the various spatial scales is very common (Alfasi, 2006). Similar informal practices exist in Slovenia (Kušar, 2010; Peterlin and McKenzie, 2007). Moreover, in Austria, representatives of federal, state and local governments cooperate on a voluntary basis to meet a perceived need for co-ordination in a way unfettered by statutes (Faludi, 1998). The Austrian Conference on Spatial Planning (ÖROK) is an informal co-ordination body, which provides a forum for co-ordination of matters relating to spatial planning among the Landers, Communes and municipalities (OECD, 2003). Despite the advantage such a system offers in relying on informal agreements and personal relationships, it has resulted in a certain co-operates culture where informal arrangements defying established and pre-agreed rules, can be arbitrary and unstable (OECD, 2003).

Moreover, multi-level co-ordination in Korea is a major challenge given the many plans (spatial and sectoral) that are formulated at different spatial scales, and a history of weak co-operative relationships among local governments who may see each other as competitors rather than as potential partners in development (OECD, 2012). Even though a Presidential Committee for Regional Development (PCRD) was established in 2008 as the main national body for resolving inter-ministerial issues, setting strategic direction and prioritising investment in nationally significant regional development projects, it lacks the statutory power to make and enforce policies as well as determine priorities among matters administered by different ministries (OECD, 2012).

Box 6. Mechanisms for vertical and horizontal co-ordination

A number of mechanisms (formal and informal) are used to co-ordinate the various spatial development plans and sectoral policies which have territorial impacts, as well as the institutions overseeing their formulation and implementation. Some country examples are outlined below:

UK: The 2011 Localism Act, under the so-called 'duty to co-operate' arrangement places legal duty on local planning authorities, county councils and public bodies to engage actively in plan preparation in the context of strategic cross-boundary matters.

Ireland: An advisory regional authority carrying out regional planning functions assists a combination of voluntary horizontal linkages between local authorities, along with state sector agencies responsible for infrastructure and services.

Austria: Representatives of federal, state and local governments cooperate on a voluntary basis to meet a perceived need for co-ordination in a way unfettered by statutes.

Israel: the use of unofficial procedures to synchronise long-term plans with detailed planning and planning applications at the various spatial scales is very common.

Korea: The Presidential Committee for Regional Development (PCRD), established in 2008, is the main national body for resolving inter-ministerial issues and facilitating horizontal integration. However, the PCRD lacks the powers of policy formulation and enforcement.

5.4 Discretionary vs. indicative systems: Striking a balance between flexibility and certainty

The degree of flexibility and certainty offered by the planning system is determined by the interplay between indicative and discretionary ideals sought by the system. Whereas the relationship between policy and control is expected to be determined through a binding detailed land-use plan in an indicative system, in a discretionary system each decision is subject to administrative and political discretion with the plan providing general guidance (Commission of the European Communities, 1997). Indicative systems can provide greater certainty for investors and local communities on permissible uses through the use of legally-binding detailed land use plans. The success of such a system however depends largely on the availability of up-to-date plans to guide decisions. Discretionary systems, on the other hand, are more flexible and allow planning decisions to respond rapidly to changing circumstances with or without a formal and legally-binding land-use plan.

Most planning systems, however, incorporate elements of both types of ideals. The UK planning system, for example, has a long-standing reputation of being highly discretionary. It relies on the local decision makers' discretion with respect to numerous guidelines and factors, even in the absence of any formal plan (Clout, 2007; Tewdwr-Jones, 1999; Cullingworth, 1993, 1994, cited in Alfasi, 2006). There is, however, increasing emphasis on ensuring certainty, consistency and authoritativeness of decision-making through the introduction of a 'plan-led' system of development control.

Indicative zoning plans in the USA and Canada are used alongside discretionary and more flexible instruments such as *'floating zones'* (a zoning ordinance intended for a certain use, which is not specifically pinpointed on the land-use map); *'planned unit development'* (flexible zoning system which allows for a wide range of uses in a given area, but does not specify the form of development in the ordinance and '*special district zoning'* where an area is protected by comparatively limiting ordinances or obliges the involvement of residents during planning (Alfasi, 2006). Besides these, exceptional arrangements exist, such as the ''unique circumstances'' rule to deal with local development needs in some parts of the USA (Cullingworth, 2002; Gallent and Kim, 2001). On the contrary, the Israeli planning system is considered relatively rigid and does not allow as much discretion and flexibility in decision-making at the local levels of administration because of the existence of a powerful national government (Alfasi, 2006). There is also a general feeling that the Spanish planning system is too restrictive and over-defined in terms of prescribed standards, codes and regulations, making it difficult for local authorities to exercise discretionary powers and for developers to comply with (Commission of the European Communities, 1997).

Although development plans in Ireland define fixed uses and activities permitted in delineated localities, flexibility is a key characteristic of the system as zoning may be allowed for a variety of uses or for decisions to be made as material contraventions to the plan (Commission of the European Communities, 1997). Similar opportunities for plan modification exist in Germany (where they deal with the problem of supplying new housing in areas of urgent need) and in Denmark and Belgium, provided that there are no major deviations to existing higher hierarchy plans and guidelines (Commission of the European Communities, 1997).

In summary, in most countries, the planning system recognises the need for indicative ideals that guarantee certainty for developers and communities. This, combined with the allowance for a reasonable amount of discretionary measures, enables planning decisions and affected land use activities to respond to changing socio-economic trends.

Box 7. Discretionary vs. indicative systems

Indicative planning systems are plan-led; they tend to rely mainly on legally-binding land use plans to provide greater certainty for investors and local communities whilst granting less discretionary powers to institutions responsible for the implementation of the plans. Discretionary systems, on the other hand, are more flexible and allow planning decisions to respond rapidly to changing circumstances with or without a formal and legally-binding land-use plan. Most planning systems, including those of the UK, Germany, USA and Canada, incorporate elements of both types. The systems of some other countries (e.g. Israel and Spain) are considered relatively rigid, because they do not allow as much discretion and flexibility in decision-making at the local levels of administration

6. SPATIAL PLANNING AND ENVIRONMENTAL ASSESSMENT

In all countries, mechanisms exist to ensure environmental protection and biodiversity conservation either as part of the spatial planning system or through other systems of policy, institutional and legislative frameworks. The mechanisms for achieving environmental objectives derive from conventions, directives and legislations at both the international and national levels. For example, among the 21 OECD countries which are also members of the EU, directives on environmental matters at the EU level (e.g. Natura 2000 Network, The European Birds and Habitat Directive and Strategic Environmental Assessment- SEA) directly influence spatial planning in their jurisdictions.

There is a wide array of instruments for realising environmental objectives embodied in and delivered directly through the spatial planning system. These instruments target a range of environmental issues including water management, air quality management, large facility siting, climate change, waste management and biodiversity conservation. Regulatory instruments can be classified in three main categories: *spatial plans*, *environmental assessment* and *permits and licences.* Generally, these regulatory instruments play an important role in ensuring that environmental considerations are taken into account in land use and development decisions. The enforcement of compliance to these regulatory instruments is ensured by institutions with core competences in spatial planning and other public agencies, along with national and sectoral legislations governing natural resources. The main types of instruments used are outlined and discussed below.

Spatial plans

In all OECD countries, spatial plans constitute one of the key instruments for achieving environmental protection objectives. Spatial plans at various spatial scales create the preconditions for harmonising socio-economic development goals with environmental protection imperatives. Special areas of conservation, formally protected areas and areas of high biodiversity value are often recorded and or designated in spatial or land-use plans. Environmental objectives articulated in spatial plans are partly realised through the implementation of development management instruments such as greenbelt policies, TDR programmes and various zoning instruments.

In countries where a formal system of spatial planning exist at the national level (e.g. Netherlands, Austria, Japan, Korea, Estonia, UK, Israel, Germany) national-level spatial planning policy and perspectives articulate among other goals, broad environmental protection and biodiversity conservation priorities which are grounded in the principles of sustainable development. The Estonian National Spatial Plan contains broad policy goals on climate change, green energy and the preservation, conservation and sustainable utilisation of valuable landscapes within the country's spatial economy. In Austria, national spatial planning is closely linked to forestry planning through the Forestry Development Plan, which sets long-term priorities for each of several defined functions of woodland (i.e. economic, social, soil protection, leisure, and protection against natural disasters) (OECD, 2013a). Furthermore, the protection and enhancement of the natural, built and historic environment and biodiversity, as well as climate change mitigation and adaptation, are among the core priorities of the National Planning Policy Framework (NPPF) of the UK. These environmental goals and priorities at the national level provide the framework for the formulation of more detailed and measurable objectives and strategies at the sub-national levels.

In the federal states of Australia, Belgium, Canada and the USA, as well as the unitary states of Czech Republic and Chile (where there is no formal spatial planning at the national level), regional and local planning policy instruments as well as sectoral planning instruments are used to articulate and realise environmental protection objectives. Chile for example, does not have a formal nationwide system of spatial planning that would ensure that areas of high biodiversity value outside of formally protected areas

are identified and taken into account in land use decisions (OECD/ECLAC, 2005). In the absence of a national level planning policy instrument in Chile, indicative regional urban development plans are used to designate areas where urbanisation should be restricted for environmental reasons (e.g. natural protection areas). In addition, sectoral planning mechanisms are used to achieve some degree of integration between nature and land-use policies through planning activities by the Ministry of Housing and Urban Development (OECD/ECLAC, 2005). Moreover, each of the three Belgian regions (Walloon, Brussels and Flemish) prepares Regional Spatial Plans in which environmental protection objectives feature strongly.

In recent years, the concept of Green Infrastructure (GI) planning has become established as part of the spatial planning practices in Europe and North America, and gradually gaining popularity in Asian countries including Japan, Korea and China. GI refers to an interconnected network of green spaces created to conserve natural eco-system values and functions while providing associated benefits to human populations (Benedict and McMahon, 2002; Tzoulas et al., 2007). It consists of natural, semi-natural and artificial networks of ecological systems, designated in urban, peri-urban and rural areas to serve as habitats for biodiversity and sources of eco-system services. The primary benefits of GI include enriched biodiversity and habitats, maintenance of natural landscape processes, flood management and risk control, pollution reduction, increased recreational opportunities and better connection between nature and humans (Weber et al., 2006; Konijnendijk et al, 2006; Kang and Kim, 2015; Tzoulas et al., 2007).

Following the declaration of GI establishment in the EU in 2011, a resolution and strategy on GI has been adopted by the European parliament in December 2013 'to promote the deployment of green infrastructure in the EU in urban and rural areas', as part of implementing the EU 2020 Biodiversity Strategy.[20] Across the OECD, many countries including the UK, USA, Germany, Belgium, Denmark, Finland, Japan (Kato, 2011) and Korea (Kang and Kim, 2015) have embraced the concept of GI, developed policy guidelines and strategies and implemented various GI projects.[21] In these countries, GI investments from traditional public sources, pension funds, insurance companies and other private sector actors target the renovation of physical infrastructure in brownfield areas, retrofitting and energy efficiency projects in new infrastructure, and building and service sector activities including information provision, engineering or management advice (Kaminker et al., 2013).[22]

Environmental Assessment

Within the spatial planning system, environmental assessment constitutes another key regulatory instrument for achieving environmental objectives in all OECD countries. Two main approaches are adopted. In some OECD countries, environmental assessment exists as an amendment or addition to existing spatial planning laws. Environmental assessment therefore becomes part of the land-use regulation and permitting process. This is the case in countries including Denmark, Ireland, UK, Czech Republic and New Zealand. In most other countries, on the other hand, environmental assessment has been introduced

[20] See *http://ec.europa.eu/environment/nature/ecosystems/index_en.htm* and http://www.eesc.europa.eu/?i=portal.en.events-and-activities-green-infrastructure-success for further information on GI in the EU.

[21] See *http://publications.naturalengland.org.uk/file/94026* for further information on GI in the UK.
For more information on GI in the USA, see *http://water.epa.gov/infrastructure/greeninfrastructure/index.cfm*.
In Germany, GI is used for storm-water management in the Emscher Region (western Germany) and the city of Berlin; see Nickel et al. (2014) for additional information.
For Belgium, see e.g. *www.cardiff.ac.uk/archi/programmes/cost8/case/greenblue/belgium-rever.pdf*.
For Denmark, see *http://denmark.dk/en/green-living/strategies-and-policies*.
For Finland, see *www.syke.fi/projects/greeninfra*.

[22] See *http://dx.doi.org/10.1787/5k3xr8k6jb0n-en* for further information on institutional finance and Green Infrastructure investment examples from OECD countries.

through separate legislations which are connected to the system of plans and permitting processes. Environmental assessment therefore operates separately and is generally required prior to development and building permits being considered or issued.[23]

Two main types of environmental impact decision-making support instruments—Strategic Environmental Assessment (SEA) and Environmental Impact Assessment (EIA)—are used across countries. National plans, programmes, regional development and land-use plans as well as sector plans and policies in areas such as energy, transport, agriculture, forest management and manufacturing are subjected to SEA (Therivel, 2010; Wood and Dejeddour, 1992). This is done to ensure that established environmental quality standards aimed at protecting human lives and preserving eco-systems are considered at the highest strategic level of decision-making. In most cases, the implementation of SEA requirements are specified within the frame of particular sectoral or spatial planning legislative frameworks (OECD, 2006a). Whereas plans, policies and programmes are subjected much earlier in the decision-making process to SEA, individual projects resulting from these policy instruments are subjected to EIA. EIA ensures that local planning authorities, when deciding to grant planning permission for a project, do so by taking into account environmental risk assessment information conducted for the project (Eggenberger and Partidário, 2000).

In all OECD countries, national legislative or other provisions such as statutory instruments, cabinet and ministerial decisions, and circulars and advice notes, prescribe environmental assessment for certain plans and programmes at various levels (national, regional and local) that are likely to have significant effects on the environment. The European Directive 2001/42/EC on the *Assessment of the Effects of Certain Plans and Programmes on the Environment* (also known as the SEA Directive), which came into effect in 2004, enforces SEA in EU member states of the OECD.[24] Under this directive, national governments are not legally obliged to subject their plans and programmes to SEA; they may do so on voluntary basis. However, regional and local land use development plans, as well as sectoral plans, policies and programmes are required to undergo SEA in the EU.

In Canada, there is an administrative requirement to conduct SEA on all public private partnerships through a Cabinet Level Directive.[25] In the USA, programmatic environmental assessment is required for large projects and programmes (Partidario, 2000, 2005). In Chile, Strategic Environmental Impact Assessment (SEIA) became mandatory in 1997 for all new projects as a way of incorporating the environmental dimension in the building, operation, closure and decommissioning of public and private projects and activities (OECD/ECLAC, 2005). In Israel, environmental provisions are included in a wide range of legislative instruments including the Clean Air and Water Law, the Planning and Building Law, Business Licensing law and Wildlife protection Law, rather than a single national law (OECD, 2011b).

Table 7 shows the use of SEA and EIA in OECD countries. All EU member countries of the OECD employ EIA at the project level. SEA is used by all the 21 EU member states of the OECD and nine other countries (i.e. Australia, Canada, Iceland, Korea, Norway, Switzerland, Turkey and USA). In Korea, a SEA-type process referred to as the Prior-Environmental Review (PER) or preliminary environmental scan (PES) system was legislated in 1999 to identify and minimise environmental impacts at an early stage for certain plans and projects that are specified under the Environmental Protection Act (OECD, 2006b). In response to increasing demands for a more comprehensive assessment process, the Environmental Impact Assessment Act (2012) introduced the strategic SEA to facilitate sustainable spatial development by checking compatibility with environmental conservation plans when formulating higher order plans (OECD, 2012).

[23] See *http://ec.europa.eu/environment/eia/home.htm* for current practices in Environmental Assessment among EU states belonging to the OECD.

[24] See *http://ec.europa.eu/environment/eia/sea-legalcontext.htm*, for further information.

[25] See *www.ceaa-acee.gc.ca/default.asp?lang=enandn=B3186435-1* for further information about the Cabinet Directive on SEA in Canada.

In three of the remaining countries (Chile, Israel and Mexico), SEA is not used. EIA is employed as the main environmental protection instrument in these countries. There are currently no formal provisions for SEA in Israel (OECD, 2011a) and Mexico (González et al., 2014; OECD, 2013b). There are however, moves towards the adoption of SEA principles in these countries. Chile's Strategic Environmental Impact Assessment (SEIA) is incrementally integrating principles of SEA. In Japan, the Environmental Basic Plan, adopted by a cabinet decision in 2000 and revised in 2011, acknowledges the need to consider the content and methods of consideration of environmental matters in plans and policies, accumulate examples at national and local governments, and consider the establishment of rules for SEA, if necessary.[26]

The main challenges associated with environmental assessment in most countries include the political nature of the assessment process, the cost (time and money) of assessment particularly to businesses, the limited/short consultation periods and the limited technical capacity of institutions, and the absence of robust legislative frameworks (Therivel, 2010; OECD, 2006a). Previous reports by the OECD have highlighted challenges in the EIA process in several countries, for example in, Australia, the Slovak Republic and Chile (OECD/ECLAC, 2005; OECD, 2008).

Table 7. Strategic environmental assessment and environmental impact assessment in OECD countries

Countries using SEA and EIA		Countries using only EIA (not SEA)
Australia	Korea	Chile
Austria	Luxembourg	Israel
Belgium	Netherlands	Mexico
Canada	New Zealand	
Czech Republic	Norway	
Denmark	Poland	
Estonia	Portugal	
Finland	Slovak Republic	
France	Slovenia	
Germany	Spain	
Greece	Sweden	
Hungary	Switzerland	
Iceland	Turkey	
Ireland	United Kingdom	
Italy	USA	
Japan[a]		

[a] The amended Environmental Impact Assessment Law in Japan includes partially the idea of SEA, although the system does not resemble the full-fledged SEA regime used in other countries.

Environmental Permits

Environmentally-related permits work together with environmental assessment instruments to ensure that environmental considerations are taken into account in the siting of industrial installations (large, medium and small) that would have significant impacts on the environment. A review of the series *of Environmental Performance Review* reports published by the OECD revealed that all countries make use of environmental permits. The overall goal of environmental permitting is to protect human health and the environment by defining (in a transparent, accountable manner) legally-binding requirements for individual sources of significant environmental impact (OECD, 2007). Moreover, as a regulatory instrument, environmental permitting aims at reducing the environmental impacts of industrial activities, facilitating their compliance with environmental requirements, and promoting technological innovation

[26]Further information on the revised EIA Law in Japan can be found at: *www.env.go.jp/en/focus/docs/files/20120501-04.pdf.*

(OECD, 2007). In all OECD countries, environmental permits are used to ensure that statutory and government policy on environmental targets and outcomes are achieved.

The environmental permitting regimes in most countries consist of a set of standard minimum requirements stipulated in a statutory document, covering operational aspects of an installation that regulators must take into account in setting permit conditions (i.e. general binding rules). This document also stipulates the requirement for operators to obtain permits for some facilities, to register others as exempt, and provide for ongoing supervision by regulators. Permits are granted for a number of activities and operations including water discharges and waste disposal, effluent discharge and emissions for industrial installations, water abstraction, a range of activities related to nature management and protection and activities affecting listed marine, threatened and migratory species or ecological communities. In the case of effluent emitting installations, Emission Limit Values (ELVs) specifying the concentration or load of a pollutant allowed to be emitted or discharged to the environment from a specific installation, in a given period of time or per unit of production, are set and enforced by regulators (OECD, 2007).

In EU member countries of the OECD, permits are granted in line with the European Community (EC) Directive 2008/1/EC1 on Integrated Pollution Prevention and Control (the IPPC Directive, superseded by the Industrial Emissions Directive, 2010/75/EU). Integrated Pollution Prevention and Control (IPPC) is a concept that includes measures and procedures to prevent or minimise environmental impacts from industrial installations. The integrated permitting system was introduced to replace the formerly cumbersome and ineffective multitude of permits and licenses (OECD, 2005). In these countries, operational guidelines provide comprehensive assistance to those operating, regulating or being interested in facilities that are covered by Environmental Permitting. In non-EU countries, the integrated permitting approach is being adopted using the IPPC Directive as the principal benchmark (OECD, 2007). In most cases, permits include limit values and may prescribe the use of best available techniques to prevent or reduce pollution of water, air and soil.

Box 8. Spatial planning and the environment

Environmental protection objectives are realised through the implementation of a range of regulatory instruments. *Spatial plans* at various spatial scales are used to create the preconditions for harmonising socio-economic development goals with environmental protection imperatives. *Environmental assessment* constitutes another key regulatory instrument. National plans, programmes, regional development and land use plans as well as sector plans and policies are subjected to Strategic Environmental Assessment. Individual projects resulting from these policy instruments are subjected to Environmental Impact Assessment in most countries. In all countries, environmentally related *permits* work together with environmental assessments to ensure that environmental considerations are taken into account in the siting of industrial installations (large, medium and small) that would have significant impacts on the environment.

7. CONCLUSION

This study has provided an overview of spatial and land use planning systems in OECD countries, accounting for differences and similarities. The analysis covered different governance structures and how they shape the institutional and legal frameworks for spatial planning, as well as the various policy instruments used to articulate spatial development objectives, manage physical development and protect the environment. The study showed that different terminologies are used among countries to describe the evolving processes, institutional and legal arrangements for spatial planning. In most countries, the terms *land use planning, urban and regional planning and spatial planning* are commonly used alongside local terminologies.

The analysis revealed a strong relationship between the formal national governance structures and spatial planning systems across OECD countries. The majority of countries operate the *decentralised unitary* system of governance, where spatial planning competences are shared between very powerful local authorities and central government institutions. Similar power sharing arrangements exist in the *regionalised unitary states* where elected regional governments have a high degree of autonomy. Competences rest mainly with local government authorities in most *federal states*. In the *centralised unitary states* of Ireland and Israel, substantial powers rest with the national government.

A combination of four broad traditions characterises spatial planning in all OECD countries. Almost all countries combine the '*comprehensive integrated'* and *'land-use management'* approaches. Under these approaches, a hierarchy of *spatial development plans* is used to articulate and realise spatial development objectives at different spatial scales and across sectors; planning also focuses on regulating and controlling land use. The *'regional economic planning'* approach is the main trend of planning in countries including France, Portugal, Ireland, Sweden and Hungary. The *'urbanism'* tradition which emphasises urban design and building control is the dominant feature of planning in Greece, Italy, Spain and Portugal. In the USA and Canada, the 'new *urbanism'* tradition has become the dominant trend in planning; this approach emphasises traditional town-planning values such as walkable communities, mixed-use development and the creation of environmentally-sustainable and healthy communities.

The study identified two broad typologies of planning policy instruments used across countries. These are (i) *development plans* (i.e. national policy and perspectives, strategic regional plans, structure/master plans and local/sub-division plans) used to integrate social, economic and environmental issues into land use allocation and activity distribution decisions, and (ii) *development management instruments* applied to control, regulate and or stimulate desired development outcomes. Development management instruments fall within three broad categories, namely: (i) regulatory instruments (e.g. *zoning policies, greenbelts, urban growth boundaries* and *rate-of-growth-controls*), (ii) fiscal instruments (e.g. *property taxes, special assessment taxes, land value taxes* and *development exactions*), and (iv) incentive-based instruments (e.g. *transfers of development rights, brownfield redevelopment incentives* and *historic preservation credits*).

Environmental protection objectives are realised through a range of regulatory and incentive-based economic instruments. *Spatial plans* at various spatial scales are used to create the preconditions for harmonising socio-economic development goals with environmental protection imperatives. National plans, programmes, regional development and land-use plans, as well as sector plans and policies, are subjected *to strategic environmental assessment*. Individual projects resulting from these policy instruments are subjected to *environmental impact assessment*. In most countries, *environmentally-related*

permits work together with environmental assessments to ensure that environmental considerations are taken into account in the siting of industrial installations that would have significant impacts on the environment.

The environmental assessment process in most countries is fraught with a number of challenges including: (i) political influence, (ii) high cost of the assessment process to businesses, (ii) limited consultation periods, and (iv) limited technical capacity of institutions. There is the need, therefore, to implement transparent technical systems that would limit potential influences of corporations and powerful individuals on the outcome of the assessment process. Moreover, in countries where the assessment and permitting processes remain cumbersome and costly to businesses, the integrated permitting approach adopted in EU countries could provide useful lessons for streamlining and simplifying the process. Institutions charged with the responsibility for spatial planning and environmental management, particularly at the local government level, would require their capacities enhanced in the areas of human resource development and the use of modern technologies as decision-support systems. Finally, an agreement on realistic timelines for public participation and stakeholder consultations would have to be reached between businesses and public sector institutions, in order to reduce the cost burdens on businesses and provide an effective platform for various stakeholders to participate in the assessment process.

Environmental objectives would be best achieved through the spatial planning system by effectively combining regulatory, incentive-based and fiscal (taxes and exactions) policy instruments. Combining brownfield redevelopment incentives and TDR programmes with urban containment policies, could ensure continuous supply of land in existing built-up areas and direct developments where they are needed, compensate the loss of development rights in affected areas and ultimately limit encroachment on protected areas. Protected areas could be acquired by governments at the national and local levels to ensure their preservation. Transparent systems backed by extensive stakeholder consultations could be established and used to facilitate the incremental release of land in formally protected areas, should the need arise. Scheduled infrastructure investment programmes could help strengthen the authoritativeness of spatial development plans, increase investor certainty and ensure that development activities are directed where they are planned to occur. Various types of development exactions and taxes could also be levied on developments that impact the environment. The revenues raised could be invested in offset and mitigation programmes to improve the built and natural environment.

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ANNEX A: FURTHER READING

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