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Green plans or green physical planning?

A comparison between the Dutch and Portuguese plan systems regarding environmental criteria for urban development decisions

(draft version)

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1. Introduction

This paper deals with environmental criteria and the role of plans in locating activities in two different planning systems, comparing the Netherlands and Portugal. The definition of the kinds of activities which will be allowed in the different parts of a municipality is usually made through local land-use plans. These spatial plans normally regulate the use of land and specify where industrial installations, residential areas, recreational facilities, tourist development, conservation zones, for example are to be located. Besides spatial plans many municipalities all over the world have adopted environmental declarations, strategies and action plans. A general term for these plans that address environmental problems is green plans or environmental (policy) plans. These environmental plans exist alongside the more traditional spatial plans.
A major push to developing these green plans has been given by the appeal in Agenda 21 to municipalities to take there responsibility to develop Local Agenda's 21. Chapter 28 of Agenda 21 does not explicitly demand that plans should be the output of an LA21-process but it is clear that they will lead to the need to formalise local sustainable strategies in some form of framework (Coenen, 1998a), especially in spatial plans. Spatial planning can play a role in promoting sustainable development of the Community's territory and ensuring that economic growth is balanced against the need to protect the environment and heritage (EU,1997, 21). The concept of spatial planning varies significantly from system to system being inextricable linked to historical, political and administrative national features, as well as, with particular environmental characteristics as with he case of The Netherlands. Some planning systems are more related to economic policies, others more to public sector activity, or to control private investment. Because of these differences spatial planning can be referred to as the methods and institutional arrangements used largely by public sector to influence the future distribution of activities in space being undertaken with the aims of creating a more rational territorial organisation of land-uses and the linkage between them, to balance demands for development with the need to protect the environment, and to achieve social and economic objectives (EU, 1997, 24).
The spatial planning system can be viewed as state decision making concerning the detail, location and spatial patterning of the built environment and change in the environment

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(Rydin, 1997). Spatial planning systems are normally structures into different levels of intervention according to the administrative and political features of each country. At local level, in spite of many differences among countries they usually consist of action to control and guide conversion and use of land. It is the level where regulations tend to more site specific and integrate detailed provisions for buildings design, environmental quality protection and management, among other aspects. The main instruments available are local land-use and urban plans, together with building regulations. These plans vary in detail and in force of law. Some have a blue-print character and imposing its content when controlling development, others, on the contrary have a policy purpose, and are not mandatory.

The role of spatial planning in the prevention of environmental degradation has been criticised on the grounds of limited successes in practice, as well as one the growing strengthening of environmental policy instruments. Conceptually, however, the role of spatial planning in promoting development strategies able to integrate environmental quality with economic and social objectives, can not be neglected. With regards to environmental protection, planning determines land-use patterns, avoids juxtaposition of incompatible land-uses (see Pinho, 1988), determines intensity levels of use and also controls the type of construction. From these types of procedures it is acceptable to conclude that their contribution is particularly relevant at policy and plan-making stages. In practice, these procedures have not been fully successful and have often been shaped by other development objectives opposite to environmental protection purposes.

Planning approaches to development control vary from among the different administrative levels of implementation. At local level, its particularity lie, especially, in the design and control of development, having in mind spatial, environmental and social-economic, specific features of localities. There are many factors influencing the positive role of planning, ranging from political, economic, education and training.

2. Problem definition and research question

Green plans or environmental policy plans are developed in addition to statutory development land-use plans. They contain a wide range of strategies from very comprehensive addressing all policy areas of local government to sector plans like waste or energy, and from strategic long term visions to very operational environmental action plans. Elements of these plans could be environmental status reports, impact of local government policy on environmental conditions, description of polices, targets, action points and costs.

The relation between local physical, land-use or spatial planning and these forms or environmental or green planning varies from planning system to system (Sustainable cities project, 1994). The increasing debate on sustainable development and environmental sustainability has, among other issues, contributed to a raise in attention for environmental planning and its integration with the traditional perspective of physical planning at local level. In some countries these planning functions are combined while in other countries they are quite separate. At policy and plan making levels high expectations for a surplus value of environmental plans seem logic, however, at licensing level new procedures and criteria to improve environmental input to decision-making seem worthless. Are the new environmental plans adding an environmental input into decision-making at local location permit level?

Because environmental protection and management must be considered as an intersectoral approach where each development sector and societal group should be co-responsible, local environmental policy plans have a special role in promoting new attitudes from different local actors. While exerting it, local environmental plans should aim to, not only to shape new

environmental ethics but to inform technically and instrumentally new decision-making practices.
At licensing level, building permits criteria are usually dominated by building rules related to aesthetic, security, design and urban integration. Environmental permits will control the direct nuisance of pollution sources. Environmental plans could propose some sort of structure of criteria to improve decision-making. This paper aims to compare the licensing procedures currently enforced in the Netherlands and in Portugal in order to highlight the contribution of environmental plans to the traditional decision-making processes under physical planning.
The hypothesis we are testing here is *that in a planning system with separate local green plans environmental considerations in location processes are taking better into account than in systems who rely at the local level mainly on spatial plans.*
The paper is structured into three main parts. The first part deals with theoretical framework for the comparison of the planning at the local level. In the second part the planning systems at local level of the Netherlands and Portugal are described in terms of the context of the theme. The third part of the paper compares the two system from the perspective of the possible added value of green plans.

3. Theoretical framework for comparison

In development control all planning systems wrestle with the tension between flexibility and control but which lead to different solutions and different models (Thomas et.al. 1983, Faludi, 1985, Bos 1997). Two basic types can be distinguished (Bos, 1997):

- Type A - planning systems who stress the control of changes in land-use with little plan-led influence on these changes.
- Type B - planning systems who stress the guarantee of the existing situation

We can see this not only as a distinction in land-use planning system but as a general problem in the relation between permit and plan. In land-use planning type A is typical for countries like England and Ireland where all spatial alternations need a planning permission, while exceptions are dealt with at a central level. Since 1991 English plans have become more 'plan-led' because departures need 'material considerations', like changed circumstances which need to be explicitly motivated. In the past in England the plans were quit weak and were relatively easy be departed from. On the European continent plans would be of the B-type, which means that the plan is dominant above the permit. The problem here is the dynamic of any developments. This leads to partial plan reforms, departure procedures or anticipation on new plans often with an unclear status. Environmental considerations and criteria will contribute to this kind of dynamic.
This is illustrated by the example of EIA-procedures. Environmental impact assessment (EIA) is concerned with the assessment of environmental impact of projects and programmes during project planning and implementation. In the European context it aims at providing the competent authorities with relevant information to enable them to take a decision on a specific project in full knowledge of the project's likely significant impact on the environment (Council Directive 85/337/EEC, 27 June 1985). In the recent past problems to adopt and implement EIA-procedures in land-use planning became clear (Rivas et.al., 1994). Spatial planning laws have preceded EIA-regulations which makes later incorporation more difficult. EIA-procedures expect another type of education and training of planning, especially in the environmental science. Further there can be tensions between the development interest of land-use planners and the adding of environmental considerations, especially when land purchases have already been done and there are financial stakes involved.

A new directive aims at strategic environmental assessment (SEA) as a tool in integrating environmental considerations in plans and programmes that are likely to have an environmental impact, with the aim to take account of these likely effects before adoption and implementation of these plans and programmes (EU-directive 96/304). The idea is that plans and programmes establish the framework for subsequent development consent decisions. Decisions which are formally require and EIA often result from 'up stream' decisions which prepare the formal decision which requires an EIA. These 'up stream' decisions, for instance on the location of projects which require an EIA, define the subsequent decisions. SEA could be a continuous decision-making tool for integrating environmental effects into plans and policies, aiming at the identification of the cumulative consequences of policies, governmental programmes and plans with impact on the environment, introducing sustainability principles into decision-making. It can also provides a mechanism for public participation in discussions relevant to sustainability at a strategic level.

It will be clear to whatever the arguments for a strategic assessment of plans and programmes are it will be an impossible task to perform a formal strategic assessment for every strategic decision within other governmental fields (Coenen, 1998). Strategic assessment will be restricted to the most important environmental relevant plans. This is especially the case when SEA leans on the methodology of EIA, done with the same stringency as EIA and using EIA principles of documentation, procedure, significance, alternatives and the involvement of the public.

EIA has had an important contribution to interpolicy co-operation and the development of concepts and methods for a more comprehensive approach of the environment. Furthermore it lead to a professionalisation of the study of environmental effects of decisions.

The problem is not only that EIA and SEA have to be restricted to the more complex, formal and important decisions, there are also fundamental differences in philosophy between land-sue planning and EIA. Land-use planning is often founded on the premise of adaptability in which an era is planned in general terms with specific adjustment to be made in the plan as new projects are brought forward for review and approval. EIA is meant to act in a preventive mode to stop development of restrict it for environmental reasons.

Two aspects of this different philosophy will be taken into account here; different philosophies on the implementation of plans and different ideologies underlying planning law. The fundamental tool available in land-use planning is regulation which can operate on different levels and on different aspects of the built environment. Regulation can take different shapes. Through land-use planning areas of land could be defined for categories of development. Environmental criteria are brought in through restricting certain developments, possibly combined with a zoning system. Central elements are the plan and the following location permit. Above we mentioned the distinction between type A en B planning system. If we narrow it down to the relation between plan and permit it comes down to a question of implementation of plans and the acceptance of plan departure.

A comparative study on physical planning in the Netherlands and Great Britain (Thomas et al., 1983) showed that Dutch municipal physical plans had little effect on the shape of the built environment. The original plan was constantly deviated from. The researchers advocated municipal physical plans which have less pretensions of determining future spatial planning in line with the work of Friend and Jessop (1968). This decision-centred view of planning (Faludi, 1987) recognises the uncertainties regarding choices or decisions which can be taken in future. Decision making becomes planning if the problems of choice which arise are connected with other choices which are related to them. The importance of planning is that it provides 'a guideline for future decisions' (Friend and Jessop, 1968, p. 111). Here, a plan is 'a

statement of future intent'. Directly opposed to the idea that plans are statements of future intent is the thought that a plan is something that has to be executed. In their most extreme form we speak of blue-print plans. Blue-print planning aims at determining and executing a desired final condition. In blue-print planning, the uncertainties with which we are confronted in planning are insufficiently taken into account. From the decision-centred view Faludi (1987) has argued that different criteria should be used for strategic and blue-print plans. A strategic plan gives guidance. If a strategic plan is abandoned, this does not mean that it did not work. We have to look at the usefulness of the plan to the decision-makers.
An interesting perspective on the essence of the two philosophy problems lies in the differences in planning law ideologies. McAuslan (1980) distinguishes three competing ideologies. The first one is the traditional common law perspective that law exists and should be used to protect private property and its institutions. The origins of this perspective lay in the need to do something about the living conditions of the working class in the mid nineteenth century, which meant that government had to take powers to control and regulate the use of property-land and houses. The property-owners in urban areas turned against this intrusion and called upon law and courts to protect and preserve their rights of property. So this ideology stresses private property, its uses and transactions.
The second competing ideology distinguished by McAuslan is the public interest ideology. In this ideology law is seen as providing the backing and legitimacy for a programme of action to advance the public interest. This could be necessary against the selfish interest of private land-owners. Courts were prepared to accept that there were limits on the extent to which land-owners should be protected against governmental action given by the public interest.
The third ideology sees law is a vehicle for the advancement of public participation. Rights to participate in not based on property ownership but more abstract principles of democracy and justice, property-owners don't get a special place in participation.

4. Research design

This paper is not based on a formal designed cross country comparative research project. It stems for a comparison of two independently started research projects which have as a similar interest in the influence of environmental criteria on municipal decision making.
The Portuguese research case is related to the undergoing doctorate research of Teresa Fidelis which aims to evaluate the integration of environmental concerns in local permitting around an environmentally sensitive area involving 10 municipalities. The focus of the empirical.
research was dedicated to the detailed analysis of the permitting procedures and related environmental criteria used, during the last five years of urban land subdivision and building project proposals. In the all 642 decision-making procedures have been identified and analysed.
The Dutch doctorate research project of Frans Coenen was an evaluation of the experiences with Dutch local environmental policy planning. Here especially the part of the evaluation concerning the influence of environmental policy plans on environmental related decision making is relevant, specifically the relation between environmental policy plans and the recruitment of new firms and location of new firms, which we call here the decision research. A broader aspect of the research is the relation with physical plans.
The core of the research design consisted of a seven municipalities multiple-case study. Within these cases the environmentally relevant decisions with respect to the plan constitute the points of measurement for the quantitative and qualitative decision research. The quantitative decision making study consisted of a contents analysis of decision making

documents of the mayor and aldermen. All in all, 511 decisions were judged, distributed over the seven municipalities. The qualitative decision making study consisted of reconstruction interviews with officials in the seven case municipalities. The interviews were supplemented with the contents analysis of the decision making documents like plans, minutes and proceedings. In addition to the decision research in the case-municipalities, research was performed into the implementation of the environmental plans of all 110 municipalities with more than 30,000 inhabitants using a survey, (plan)document analysis and secondary analysis. The collaboration and attempt to comparison results from a two-months research trip of Teresa Fidelis to the Netherlands as a visiting researcher to the Centre for Clean Technology and Environmental Policy, University of Twente in 1996.

5. The Portuguese system

According to the Portuguese Constitution, the political and administrative structure is constituted by three main levels - the central, the regional and the local level. Currently the regional level is only represented by two Autonomous Regions - Azores and Madeira. In the main land this administrative level is still to be implemented. Local level consist of municipalities which vary significantly in terms of population and area (population figures vary from 340 in interior to 663000 in littoral most dense municipalities and area varies from 7 to 1480 Km2). Currently, there are 305 municipalities. Local level, represented by local councils or municipalities, have, among other, competence in water supply, sewage treatment and solid waste disposal systems, urban planning and land management (except for areas under special legislation, e.g. port authority areas, natural reserves). Municipalities have reflected a growing importance and activity related to attracting and shaping development in their own territories, nevertheless, they still face problems of co-ordination with each other and between them and the central level, as well as a lack of technical and financial resources.
Although many of development control and environmental protection strategies and instruments are originated at central level, which formally reflects a significant role at central level, municipalities deter a stronger role than apparently believed. Their involvement in the design of some land-use control instruments and their leadership in designing their own municipal land-use and urban plans, together with their responsibility in the implementation, explain part of their importance.
Land-use planing and development control is considered by the Portuguese Constitution as a public administrative duty and must seek adequate location of different economic activities, balanced social and economic development and biological sound landscapes. It is also considered in the environmental framework law dated from 1987 as an environmental policy instrument. There is not a strong tradition of spatial planning in Portugal. Its origins are mainly based on plan and urban design. The current Portuguese Planning system is characterised as "plan-led" system (see, Pires et al, 1995). More recently, planning has received increased attention and led to the multiplication of types of plans, reflecting growing expectations attributed to role of planning in the control of development, safeguarding environmentally sensitive and heritage areas as well as preventing strong dispersed urban growth. In general terms, i.e., outside particular jurisdictional areas such as ports or natural reserves, the set of development control instruments used at local level to judge a location and building permit can be synthesised in the following paragraphs. Table 1 summarises the main related instruments.

Table 1 - Main Development Control Instruments in Portugal

level of government	spatial planning	environmental /sector planning
National	National regulations of land buildings, works, land subdivision	(REN) National Ecological Reserve (RAN)National Agricultural Reserve (PNA) National Water Plan (AIA) Environmental Impact Assessment
Regional	(PROT) Regional Spatial Plans	(PAP) Natural (decentralized) Reserves Plans (POOC) Coastal Plans (PBH) Water Basin Plans
Municipal	(PDM) (Master Municipal Plans) (PU) Urbanisation Plans (PP) Detailed Urban Plans	

From the central level the fundamental instruments include National Regulations of Buildings, Private Works, and Land Subdivision. These are laws and decrees determining rules and procedures for location and building permits all over the country. In addition, there is the

National Agricultural Reserve ("RAN - Reserva Agricola Nacional") and the National Ecological Reserve ("REN - Reserva Ecologica Nacional"). The first consists on a protection scheme of good agricultural soils and where, development cannot take place, unless for specific public interest purposes. The second consists on a protection scheme of environmentally sensitive areas, including, in broad terms, the natural areas network plus other areas considered relevant and associated to river margins, under the risk of erosion, mountain areas, etc.. Development is also prohibited in these areas unless a specific public interest purpose is proved. Although with a positive purpose REN often leads to misleading results. On the one side, the large area of the main land where development is prohibited causes opposition attitudes from public and development agencies. On the other side, the weak set environmental criteria to be used outside REN weakens development control, turning these areas "heaven" for environmentally careless development purposes (see Nogueira & Pinho, 1997). This instrument, together with the National Network of Natural Areas, constitute the main national environmental zoning schemes. At the central level one must also make reference to the Environmental Impact Assessment Procedure, under which principles no large development project referred to in the related regulations may be approved before prior assessment and public consultation.

In addition, there is a set of environmental criteria integrated in environmental policy regulations, mainly related to water and air quality management, waste and noise management. The majority of these regulations impose maximum levels of effluent discharges and to specific development activities and minimum quality standards for environmental media, applicable to the national territory. The regulations, however also include relevant spatial constraints to prevent environmental impacts of pollution events (see Pinho, 1991).

The spatial elements are related to protected areas where admissible levels of pollution levels may be stricter. The noise regulations refer to a zoning system of three level constraints, namely the prohibition of buildings sensitive to noise in "very noisy and noise areas", the

limiting of buildings sensitive to noise taking into account existing noise levels, to condition road and train corridors less disturbing to close activities and land-use.
A National Environmental Policy Plan, from the responsibility of the Ministry of Environment, has recently been adopted, however, this is mainly a political document focusing on central level investments on environmental quality infrastructure and on national environmental education. There has been no translation, so far, to regional or local level policies.
At regional or supra-municipal level there are the Regional Land-use Plan (PROT - Plano Regional de Ordenamento do Territorio) from the responsibility of the decentralised agencies of the Ministry of Planning and Territorial Administration. These plans determine regional strategies of development which must be followed by plans of local level, however, in practice some of them have been prepared after the adoption of local plans, and therefore are hardly more that a sum of local plans. At supra-municipal level there are also the recently established, coastal plans (POOC - Planos de Ordenamento da Orla Costeira). These plans are meant to cover all coastal areas of the mainland and to establish strong control measures to control development. In practice they can impose stricter measures than plans already in existence. The water basin plans (PBH - Planos de Bacias Hidrograficas) also impose measures to control development in the vicinity of water courses.
At local level the main instruments available for development control are the Municipal Spatial Plans (PMOT - Planos Municipais de Ordenamento do Territorio), namely the Municipal Master Plan ("PDM - Plano Director Municipal"), Urbanization Plan ("PU - Planos de Urbanizac|o") and Detailed Plans (PP - Planos de Pormenor). These plans are usually prepared at local level but have to be ratified by national level in order to check their conformity with national level planning instruments. The Municipal Master Plan can be considered as a key instrument in the development process because it filters and translates all the upper hierarchical principles and measures into the municipal practice and decision-making. These plans establish the local land-use patterns and the main function areas such as housing, industry, public services, the locations of the local infrastructures.
They also establish the main urban density criteria, which are then more specific in detailed urban plans. They have a binding role in the private and public control of development. According to Pinho (1991, 14) the Municipal Master Plans are key instruments in the development control of municipalities as they articulate spatial aspects with sector investment initiatives. The environmental input in these plans is very limited. In the case of PDMs the legislation determining their content does not include specific principles or guidance concerning environmental protection (see Pinho & Margalha, 1993). This does not mean that they do not integrate environmental protection measures, but these are mainly the translation of REN and non-edificanti zones. Procedures to allocate functions and intensity of use balanced to environmental constraints and criteria as referred to above are nearly intuitive and not based on technical environmental methods.
In spite the international pressures for the adoption of Local Agenda's 21, Portugal has not made a significant progress in this area, yet. However, some local initiatives have recently occurred, consisting on the preparation of local environmental plans. These are still in a very early to phase to allow any form of evaluation. In addition, because they are not integrated in any form of formal planning system not framed in national legislation, no compulsory and comprehensive role for decision-making renewal can be expected in the near future.

Location permit for a building and land-subdivision project

This type of development project consists on the subdivision of a large parcel of private land into plots which will then be used for building purposes ("loteamento"), and can only be located on urban land. When the Master Municipal Plan is approved and ratified, local councils have the power to give this sort of permit (if the development project is of more than 10ha or 500 dwellings, decision-making is undertaken at superior administrative level).
Basically the decision-making process includes two permits - the subdivision of land itself and the building one. We are focusing on the first part as it is more related with the location issues. The basic steps of the procedure include (Decree-Law 448/91 and Regulatory Decree 63/91):
- the submission to the Local Council of a set of information including a map with the location of the land, topography (existing and proposed) integration in road network, water supply and sewage systems, the division of plots, area of building and impermeabilization, number of floors, public equipment, green and public use areas. It should also be stated the adequacy of the project for the place according to the content of existing Master Plan or Detailed Plans.
- the application is checked and then submitted to local council departments in order to be judged its adequacy and constraints. When there is a Master and detailed plan the decision-making is facilitated as, the location is assessed through the main land-use pattern established and the urban density criteria foreseen for the proposed place. Environmental criteria used to judge proposals, is mainly related to the integration with water supply or sewage systems, and very rarely to waste management schemes. Even for these there is no system to assess any risk of overloading of current related infrastructures of water and waste management likely to happen with a large number of new development proposals of this type.
- the local council may consult other public agencies before reaching a decision on the proposal.
- permits can only be refused, according to the regulations, based on (and referring only criteria related to environmental issues) damage caused to existing natural or built patrimony, unacceptable surcharge to the existing urban infrastructures.
- permission can be given with constraints, namely responsibility for management of green areas, preventing the damage of existing trees in the land, payment of compensation for the extra demand on urban infrastructures.
- the procedure includes a public consultation and an appeal procedure.

Generally, environmental criteria is similar to every project independently of their relative location to an environmentally sensitive area or a environmentally disturbing area provided that it is included in land for urban development purposes. There are no guiding manual to help the technical daily environmental assessment of development proposals that do not fall in the formal Environmental Impact Assessment procedure.
The following procedure based on a real development project proposal illustrates the this type of decision-making process in the Portuguese context. A land subdivision project proposal has been submitted to a Local Council in the end of 1992. The project consisted on a land parcel of 29300m2 to be divided into 23 plots for collective housing and commerce with 3 floors. It was estimated to have 189 dwellings and approximately 756 in-habitants. The function of the project was in accordance with the use foreseen in the plan. Initially the project proposal application was found to be incomplete and had to be filled accordingly. Later on the urban solution proposed by the proponent was considered inadequate for the place and had to be

reformulated several times. Location permit has been given within a time span nearly two years. Conditions of approval only included urban design criteria.

Location permit for an industrial project

Licensing activity is classified into three main groups - A, B, C or D according to their type, dimension, as well as, human and environmental nuisance. The first two can only be located in Industrial Zones foreseen in the Municipal Master Plans or outside urban areas. The approval procedure of a location permit, under approved Municipal Master Plan is granted by the Local Council. The procedure for granting a location permit under these circumstances includes the following steps: - the proponent must submit a description of the industrial activity, a location map and number of employees. Requirements of environmental information varies among municipalities. Usually, if there is an approved Detailed Plan for the Industrial Zone, environmental information required is specified into detail, namely data on water consumption, quantity and type of raw material used, type and quantity of liquid and solid waste, air pollution and related reduction equipment, type of water and solid waste management systems to be used, noise levels, etc. - the conformity of the application is checked and submitted to evaluation within the services of the local council, consultation to other public agencies such as the Regional Directorate of Industry and Energy may occur. - After the granting of location the approval procedure continues with the technical assessment of the industrial project by the Regional Directorate of Industry and Energy. Large industrial projects referred to in the Environmental Impact Assessment Regulations are subject to a prior assessment and public consultation process. Two major comments must be made on the integration of environmental criteria in the process of industrial location permit. The first major phase lies the location of the Industrial Zones themselves. These zones have been established under the designing process of the Municipal Master Plans and their major objective was, not only to offer alternative location for undesired existing industries within urban boundaries, as well as, to attract new economic investment and employment to municipalities, offering space and infrastructures at lower costs. The location criteria for these zones was largely influenced by available land and adequate distance from urban centres in order to prevent environmental nuisances. Location processes included some environmental assessment, namely related to soil adequacy, wind direction, proximity to environmentally sensitive zones but mainly through informal and, often intuitive, methods. The second phase lies in the location permit. Once the industrial zone is established the major objective of municipalities, is strongly economic development influenced and so, to fill in the industrial plots becomes the major target. Once the foreseen infrastructures, namely for water and waste management, are completed it is hardly likely that a location permit is refused exclusively on environmental basis.

One example of an industrial location permit can be given by the following case. The application has been submitted to a municipality for the location permit of a metal industry, classified as type B, using a total are of 12000m2 and a total number of 20 employees. Additional information supplied included, energy power required, water consumption, building area. After analysis the application the local council required more information of water wastes and related treatment method. Seven months after the first submission permit was granted and the approval process has proceed to the Regional Directorate of Industry and Energy for technical assessment. Once this is completed the building permit is then given by the local council. The total time span for approval was of approximately 5 years.

5. The Dutch system

The Dutch system of government consists of three administrative levels, a national level, 12 provinces and over 600 municipalities. The Dutch planning framework contains two different tracks of policy planning at three levels of government which are historically related to the physical environment, but based on different planning laws. The oldest one is the law on physical planning (Wet op de Ruimtelijke ordening) and the more recent law on environmental protection (Wet Milieubeheer) contains a Planning Chapter since 1993, although since the seventies environmental law has known separate plans sectoral plans, like waste tretment plans.
Table one summarises the most important elements for this paper of the Dutch environmental and spatial planning framework. At all three levels some form of environmental and spatial plans are envisaged. On the municipal level both the environmental policy plan and the structural plan are compulsory. The table leaves out for this paper less relevant plans in both tracks. For instance other sector plans, like water and nature conservation plans on the national and provincial level and municipal sewage plans address contain parts of the environmental planning track.

Table 2 The Dutch environmental and physical planning system

Level of government		Environmental planning	Spatial planning
National		National Environmental Plan	National Spatial Plan
Provincial	Strategic	Environmental Policy Plan	'Streekplan' (provincial land-use plan)
	Operational	Environmental programme	
Municipal level	Strategic	Environmental policy plan	Structural plan
	Operational	Environmental programme	'Bestemmingsplan' (local land-use plan)

To understand local development control in the Netherlands some basic remarks on the content of these plans and the relation between both tracks and the three levels is necessary. We restrict ourselves to the location of business activities at the local level, the role of the local plans and the environmental criteria used. More could be said about the interesting relation between spatial and environmental policy in the Netherlands. A growing literature concerns itself with Dutch items like integrated spatial environment areas (ROM-gebieden), integrated environmental zoning, compact cities policy and (strategic) environmental impact assessment. For the purpose of this paper we accentuate the main features of the complex planning system necessary to understand the use of environmental criteria in location of local developments and the possible influence of municipal environmental plans. In contrary to the Portuguese case we will not explicitly go in to environmental criteria for housing projects. The Dutch zoning system for industries in local land-use plans a system of 'inward zoning' which means that it takes the source of pollution as a starting point. It places the polluting activity at a certain desired distance from the sensitive area, like for instance housing. 'Outward zoning' works the other way around which means that the sensitivity of the area

around a certain industrial area set the limiting zones for business activities within the industrial zone. In this sense both are related because existing housing gives the possibilities for new industrial location and existing industry gives the possibilities for housing.
In the spatial track the national level sets the broad strategic lines, which the provinces translate into specific features for their province preparing provincial plans according to the national strategies. Municipalities prepare detailed plans for land-use in accordance with the provincial plans. The plans allocate functions for certain areas like housing, industry, public services and lays down infrastructure like roads, canals, railway lines and parks. Regulations define for instance the height of buildings and the number , etc.
To achieve this a municipal land-use plan consist of the following mandatory parts:
- a map of the planned area;
- an explanation part with a description of the desired development and regulations;
- an overview of the environmental nuisance of various categories of business activities;
- an acoustic and soil contamination report of the planned area.
The local structural (struktuurplan) plans contains the strategic aspects of local development. The municipal land-use plans are very detailed plans defining the type and intensity of use of particular parcels of land within which the land-use plan concerns. The plans have to be approved by the province. Through the use of escaping procedures (art-19) in practice there is much more departure from these plans.
The role that physical plans can play in environmental protection is well defined in law and jurisprudence. The prime objective of the physical plan is 'good physical planning' which restricts the possibilities for conducting environmental policy through physical planning. Land-use plans include the environmental aspect of noise and soil in the form of obliged acoustic and soil contamination reports. But more and more municipal land-use plans contain 'green paragraphs' which deal with other environmental aspects within the objective good physical planning like ecological effects of spatial developments.
In the environmental track there is no formal hierarchical co-ordination mechanism between the plans at the different administrative levels. Of the larger municipalities (larger than 30.000 inhabitants) 82% had in the beginning of 1993 a strategic municipal environmental policy plan or a mixed strategic and operational plan (Coenen, 1996). These plans could be considered comprehensive in the sense that they involve a whole range of environmental sectors (waste, air, noise) and deal with environmental aspects of related policy sectors (traffic, housing, physical planning). The content of the specific plans differs considerably although there is always a mayor component of translation of national environmental policy for the local level.
There is also no formal horizontal mechanism in Dutch law to co-ordinate environmental and physical planning on the local level. For the national and provincial level a system were plans 'leap frog' over each other which means that when changes in one plan is introduced this will lead to changes in the other related plans. A same kind of system could be used on the local level, although not formally required. The problem on the local level is the difference in planning horizon (four against ten years) and the differences in juridical status and the weight of the plan changing procedures. There is at the local level a co-ordination mechanism on the operational or permit level between building and environmental permits (see below).
Both the spatial and the environmental policy track contain in plans and regulations important elements for municipal location policy. We will very shortly go over the most important aspects of the national and provincial policy determining or influencing local industrial developments.

A first important aspect is the concentration of economic-infrastructure development in certain urban areas. A first important aspect is the concentration of economic-infrastructure development in certain urban areas, so-called 'city notes', leaving space for green areas. Starting point of this spatial development perspective was the Fourth National Spatial plan.
On the national level a location or mobility policy for offices and companies has been formulated in order to reduce unnecessary car traffic and to improve the liveability of cities. This policy, depending on the part of the country, has to be translated into the local land-use plans. starting point of the policy is that businesses with many employees (like offices) or visitors have to be settled nearby means of public transport. Industrial areas can be dived in 'accessibility profiles' leading to A, B and C-locations. A-location can be reached very easy by public transport or bicycle. The accessibility for cars is less important and the parking space for cars is limited. B-locations are well accessible by public transport and reasonably by car. C-locations are very well accessible for car traffic and there are no demands for public transport facilities. Getting the 'right business at the right place' means combing mobility features of firms like labour intensity, business car and goods transport dependency and visitors intensity with features of already existing or newly to develop business area.
At the provincial level the provincial land-use plan (streekplan) sets broad guidelines for spatial policy which can include location of transport infrastructure and defining parts of the provinces were further business area development is possible. Municipal land-use plans are checked by provinces against the background of the provincial plan, including the mobility policy. The Inspectorate for Environmental Hygiene, which represents the interest of the environment in spatial planning procedure, has developed a national guideline with criteria to check if the municipal land-use plans adequately deal with environmental aspects.
One of the themes within national environmental policy is the so-called disturbance -policy which has as a primary objective to reduce or prevent disturbances of the direct living environment of people. This theme is very much related with location of local developments because it deals with issues of emission loads and distance to the source which asks for a spatial separation of polluting source and sensitive activity. Within this policy theme solutions are sought for specific problems caused by conflicts between spatial necessary developments and environmental effects in the so-called City & Environment projects (see below).

Environmental criteria for industrial location in the Netherlands

Environmental criteria for industrial locations stem from both the environmental as the land-use track. As mentioned above several forms of environmental protection standards (like soil contamination, noise nuisance and industrial hazard) are laid down in national environmental law or other directives. For noise nuisance and industrial hazards zones are given in the regulation limiting so called 'sensitive use'. Around mayor sources of noise pollution or industrial hazard, zones or noise respectively risk contours are laid down. For noise sensitive uses means land use like housing, nursing homes and hospitals. They are not allowed of the noise levels exceeds 55 dB(A). Risk contours are expressed as levels of individual risk to inhabitants. Soil contamination standards are based on cumulation of toxic substances in the soil who limit the multi-functional use of land or even treated the further environment (groundwater pollution) or present risk for human health.
Within the land-use system the kind of activities which are allowed in the different parts of the planning area are defined by the plan which defines (1) a company list and (2) zoning ordinances. Through the combination of company list and zoning ordinance the land-use plan

specifies whether or not a certain type of business activity is allowed in the plan area, and at what distance from other functions

Since the beginning of the 1980's the zoning system was introduced in effort to reduce or eliminate the negative side-effects caused by the industry on there surrounding area. In national policy and in jurisprudence the so-called VNG (Association of Dutch Municipalities)-system is proclaimed. The zoning system is based on nine different nuisance-aspects (odour, dust, noise and risk expressed in necessary distance of 0-1500 meter and air-, water- and soil pollution, visual disturbance and traffic pull based on indexes ranging form 1 to three). Together they set a list of distances for types of business activities. As an addition to the land-use plans a list of business if formulated which would be allowed to settle in the plan area.

Apart from the VNG-zoning system a new system has been introduced through experiments for complicated industrial areas where there is a accumulation of environmental impacts on the surroundings. This system offers the possibility to add up different effects on the basis of individual ceilings. If measures at the pollution source would be insufficient houses need to be puled down and residents relocated.

The VNG-system described above means that if a business presents itself to the municipality and requests a building permit, it can be situated within the zone reserved for the specific category of businesses, if an environmental permit can be obtained. This depends on the environmental suitability of a specific business activity, which depends on environmental law. The main environmental law being the Environmental Protection Act. For specific activities which fall under the regime of the law it is tried through a system of permits to control the environmental effects of the activity on the environment of the activity. The limits for suitable or unsuitable are not sharply defined but depends on the ALARA (As Low As Reasonably Achievable)-principle (art 8.11 lid 3 Wet Milieubeheer). The maximal reduction of the environmental load is related to financial-economic possibilities of the business to achieve necessary measures at the source of the pollution. Point of departure is the application of the best technical means. Sometimes this is impossible and concessions have to be done in the direction of best practical means. The financial-economic burden of proof for the necessity of these concessions lay with the business. So the limits for what is reasonable depend on the local situation.

Before a local development project can be approved both permits are necessary. An environmental permit can only be refused in the interest of the goals protecting the environment. For instance a permit for business can never be refused on the basis of the economic argument that there would be to many competitors in a certain economic sector. A building permit can only be refuted on the basis of a violation of building regulations, the content of the land-use plan including the environmental zones.

Alongside spatial and environmental criteria economic criteria will also play a role. For instance municipal economic policy can ask for creating enough capacity for different categories of business activities with different levels of hindrance. When through a combination of zoning and environmental permits only 'light' business activities are settled in a specific business where 'heavier' would have been possible the market technical aspirations of this area could be not enough exploited. Another argument sometimes comes up if the municipality is the owner an main project developer of a certain business area and the interest on the investment is a heavy burden for the municipality. Selling business area than can become a goals in itself and competition between municipalities gets an extra dimension.

In municipal economic policy arguments for attracting or keeping enough business activities for employment are also valid. Although in practice heavy polluting business 'shop' around to find a location for settlement.

6. Relevance of green plans for location policy

The settlement of a specific business depends in the Dutch planning system on both environmental and statutory development demands. Green plans are not the basis for these demands although in some case-municipalities the principle was explicitly repeated in green plans of the case municipalities. There are clear differences in interpretation and enthusiasm with which the municipalities picked up national policy ranging from reluctantly to walking in front.

The origins for Dutch municipal location policy lay both in the wish to separate housing and polluting activities from an environmental perspective as well in market considerations from an economic perspective. In more recent years the environmental aspect of mobility was added. Already in the middle ages in city regulation ('keuren') we see regulation that tries to separate hindering activities as tanneries and slaughters form housing.

Not all case-municipalities had a specific municipal location policy. Such a policy means that the general national policy is translated into a more specific municipal policy. National policy only contains concrete standards for the A, B en C locations and parking standards (parking space for business) for specific parts of the country. The general idea and targets of driving back car mobility directed towards employers and visitors of business is clear.

A municipal location policy can also give attention to the kind of business the municipality wants to attract, what to do with firms in the highest pollution categories and the tuning of supply and demand of business area. Examples of questions raised in the case-municipalities were for instance if the municipality was prepared to accept distribution activities (much land needed and little employment) or a disco in a industrial area (much traffic). Which industrial activities would affect the status of a business area (catch words high-tech park, upgrading). Remarkable were the effects for future location possibilities in three case-municipalities caused by respectively the establishment of a prison, a hospital and a pesticide-producer. In all three cases their was insufficiently anticipated on future restriction for surrounding business activities. Other discussion points in location policy were if noise of hotel and catering industry could be reduced by concentration in certain areas and if business activities in housing areas could be moved to industrial areas.

In the recent past there was no municipal location policy. Interesting exception was one case-municipality who already was actively involved in location policy in the seventies. A location policy was conducted to attract and settle offices in the inner city nearby the railway station to fight demolition. Motives in that time were mainly land-use and economic, but would surprisingly fit into recent national mobility policy.

In the other case-municipalities were location policy was of a more recent date it's shape very much depended on the general strategic economic goals. In some municipalities were a strong growth of employment was the key issue they tried to apply national location and mobility policy as flexible as possible. In other municipalities who tried to stress it's green city features location policy was much more selective and national policy employed much stricter.

Location- and business settlement policy are closely related with physical planning. In the research besides physical planners also civil servants with specific business contact tasks like from Economic of Property Departments were interviewed. New business settlements have to

confirm to environmental standards who come form municipal tasks given by law. In that respect there is no planning task other than programming municipal activities and work load.
Some case-municipalities explicitly formulated targets about nuisance of business in housings areas. Two municipalities mentioned in there green plan a selective policy in attracting business. Businesses working in recycling, with clean products, energy saving or making use of sustainable energy sources would be favoured if they want to settle.
The interviews with the civil servants from Economic departments etc., showed the tension between economic and environmental task. This tension becomes stronger if in the municipalities there is a lack of business area because of the wish to attract additional employment generating industry or the wish to move existing industry, if there is a wish to reduce outgoing labour commuting ('sleep cities') or if there are problems in physically separate industry and housing.
One respondent was quit explicit in saying that only national location policy is relevant and noting specifically from the own municipality was added. As mentioned before one municipality was already conducting a location policy based on economic-spatial arguments. Only one municipality was really conducting his own location policy from an environmental perspective introducing for instance mobility plans for small companies, being ahead of national government.
Local environmental plans seem to be not very influential for location policy. In case of a concrete request for development the land-use plan is consulted. If any targets from the green plan come in it will be trough consultation of the environmental department which could bring in environmental plan targets. National location policy can be of importance but can also be interfering in municipal decision making if options like a new railroad are kept open. Provinces also play a role trough the use of so called 'hardness clauses' allowing for departures form national policy.

7. Comparison

Environmental criteria in local plans
In Portugal the environmental input in local land-sue plans is very limited. For PDMs the legislation determining their content does not include specific principles or guidance concerning environmental protection. Environmental protection measures are mainly the translation of REN and non-edificanti zones and procedures to allocate functions and intensity of use balanced to environmental constraints are nearly intuitive and not based on technical environmental methods.
PDM usually include a special chapter on environmental issues but these are mainly related to REN or other special areas for natural protection. It is also frequent to find references to the relevance of Environmental Impact Assessment procedures prior to development approval, however, these do not establish stricter measures than those included in national regulations.
For the main Dutch municipal physical plan, the local land-use plan there is a obligation to involve acoustic and soil research in the land-use planning through established methods.
More and more municipalities make separate `environmental sections' in their physical plans, which contain compulsory elements. In all case-municipalities there was a greater involvement of the environmental department in physical planning, this department normally commented on the environmental section and delivered the acoustic and soil research. Some physical planning departments don't want to pull any environmental criteria into the land-use plan except for the mandatory elements. They reason that if elements in the plan are not

obliged they are very difficult to enforce, these plan statements about the importance of the environment are just considered as a waste of paper.

Instrumentation
In the Portuguese case there seem to be two opposite areas - one where no development is allowed (inside) REN, and another where the environmental input in permitting regulations is limited and, expectations of environmental concern would be drawn upon the plan design phase, which, as stated above, is also weak. EIA has a major role in the integration of environmental criteria into decision-making but this only happens for large development proposals. According to national EIA regulations design, the requirement of EIA for other projects than those referred to is very unlikely, if not legally restricted. The cumulative environmental effect of smaller development projects is hardly taken into account under the existing planning system.
In the Dutch case the instrumentation especially for zoning looks more formal and well-established. But the VNG-systematic, although widely accepted in municipalities and proclaimed in national policy and jurisprudence, is not a formal national regulation or directive. At the one hand in very dense populated areas a fundamental separation of spatial functions is nearly impossible. At the other hand the system leaves out environmental criteria which can be of importance to like ecological diversity or energy efficiency targets.

The importance of environmental criteria
In the Portuguese situation it is hardly likely that a location permit is refused exclusively on a environmental basis. In the Dutch situation full filling the environmental and land-use demands theoretically is a condition sine qua non. In practice there are possibilities to by pass the system for economic reasons. Art-19 procedures give possibilities to by pass the land-use plan. With 'hardness clauses' the ABC-policy can be by passed, depending on the province, and sometimes 'tricks' are used. For instance planning means of public transport on a map, very unrealistic or only feasible in a very far future, and then locating offices on the basis of this upcoming pubic transport means.
From the other side more and more systematic attention is paid to environmental issues and because decision making takes environmental aspects into account at an earlier stage and in a more systematic way. Physical planners take more and more there own responsibility for sustainable development and see it less as something for the responsibility of the environmental department. In the Netherlands the input of environmental criteria looks stronger starting with conserving natural areas through concentrating urban development in 'urban concentration centres' , but also through national regulations like promoting energy efficient through building regulations and reducing car mobility through national location policy.

The importance of economic development
In the Portuguese situation filling a specific industrial location when it is realised is the major target. In the Dutch situation the recruitment and location of firms the overall economic growth target of municipalities is of major importance for the way these municipalities handle environment. Municipalities with a large growth target, where several thousands of new jobs have to be created and thousands of houses have to be built with the necessary infrastructure, showed a more reserved environmental policy. There were examples in the research of municipalities trying to set the national environmental policy aside, like the Dutch ABC-

location policy, on behalf of economic growth. They were at least stretching the boundaries one what was possible or allowed by higher government.
On the other hand, there are municipalities with a low growth rate, and fewer employment problems who advertise themselves as 'green cities'. They are able to make choices in attracting new businesses and refuse environmentally unfriendly businesses. These are often municipalities which are very popular as central locations for offices.

8. Reflection

The hypothesis were testing here is *that in a planning system with separate.local green plans environmental considerations in location processes are taking better into account than in systems who rely at the local level mainly on spatial plans.* This hypothesis can not be corroborated on the basis of the Dutch and Portuguese comparison. In the Dutch case environmental criteria are taken more into account but probably not because of the presence of a green plan.
How can this be explained? Principally the Dutch land-use planning system belongs to type B; the blueprint type. But in practice through the use of anticipating procedures more and more elements of type A come in. There is a law proposal at this moment which will change the anticipation-produce (art 19.) more into a separate project procedure which makes it even look more like type A, comparable with the English planning permission.
On the one side, one can say that, in global terms the Portuguese planning system is clearly a blue-print system, strongly influenced by regulatory and bureaucratic constraints. With the covering of the all national area with Municipal Master Plans, with its related regulatory nature, development control is mainly shaped by their content. This means that permitting, especially the location one, became an interpretation of the land-use patterns and intensity established by the plan, leaving short space of manoeuvre to the local authorities when development proposals are submitted. In some ways the plan has strengthened regulatory powers and weakened decision-making content. The revision of the plans, required for the approval of a development solution not foreseen in the plan, involves a long and bureaucratic process, deterring, therefore attempts to the flexibilisation of the system. The undergoing strong influence of economic objectives in opposition to natural resources and environmental protection, on private investors attitudes, however, suggests that any attempt to flexibilise the current system should be carefully designed. On the other side, national environmental criteria, nationally based, while in theory could be interpreted as strict procedure, in practice is allowing some form of discretion, mainly because of the limited environmental monitoring schemes and fiscalization.
So in both countries we see the tension between a blue-print type of plan and the location decision making afterwards, possibly not foreseen in the plan, were there is a need for departure formally not allowed for by the plan. This becomes even more complicated when environmental criteria come in through a two track plan system. Dutch environmental policy is very much directed towards type B, stressing environmental permits or EIA-procedures. There is no accent on the plans. Local environmental policy plans know by law a construction were plans have to be taken into account and not to be in accordance with the plan. The motivation for departure of plans is the same as the English plan-led system in the form of material considerations. These makes Dutch environmental policy type A oriented. But also here some changes are coming. In new proposals more and more we are leaving in Dutch system of national standards. For the modernisation of noise regulation and the 'City and environment-experiment the direction is towards less national standard setting and more

standard setting by local municipalities in their specific circumstances. But local standard stetting needs a place which will be the municipal environmental policy plan for the local noise standard. Interesting enough here the pubic participation aspects is added in the new regulation.
A type A kind of plan looks as a very good way to secure all interest in a plan, including certain type of environmental interest (conservation zones, etc). In the Dutch land-use plan could be seen from a private property ideology were one would to lay to down the existing situation and secure the consisting land-use. In daily practice of course the Dutch system is more and more going into the public administration ideology through anticipating procedures. This fits more in the idea that public administration wants to anticipate on dynamic developments in society without going through very severe procedures of changing the plan.
In the property ideology standard stetting is done at the local level, in every independent municipal land-sue plan the national standard has to be implemented. This makes changes in national standard stetting like the national noise standards quit difficult, because they have to be translated in the local land-use plans. From a public administration ideology these changes in national standards are typically needed. But two tracks with their own planning ideology must lead to tensions. And even the public participation ideology enters through the back door in the Dutch developments for the future were because of more local standards setting were there is a search for legitimacy.
The Portuguese plan system is traditionally mainly influenced and ruled by the private interests, the growing environmental problems are slowly influencing and changing procedures is such a way that public interests are getting more and more importance.
On the European level (Post-Seveso etc. EIA and SEA-procedures) there is also a bigger stress on the public participation ideology. In green or environmental planning in many countries it is already very common to involve citizens who are affected or even interested.
In the Netherlands the public participation ideology plays also a role in the difference in plan procedures between local environmental policy plans and land-use plans. It is very difficult and time consuming to change land-use plans because of the property ideology but also public participation procedures for whoever is affected.
Much of environmental policy is not, or is hardly, developmental policy, rather it is built around limiting instruments to counteract threatening developments (Salet, 1994). Therefore, environmental objectives may clash with the overall strategic objectives of municipalities. This aspect was clearly seen in the Dutch case municipalities due to the difference between municipalities focused on economic growth (and therefore employment) and the municipalities with a 'green' orientation, but is also very relevant in the Portuguese situation.
If the environment is to play a real part in the developmental policy of a municipality, it should either be given a central place in development plans, drafting integral plans for the surrounding environment, or the environmental plan should be seen as being equivalent to city development plans.

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