

Certain flexibilities in land-use plans Towards a method for assessing flexibility



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ARTICLE INFO

Keywords:

Land-use plans
Flexibility
Legal certainty
Assessing flexibility

ABSTRACT

The trade-off between flexibility and legal certainty is inherent in every planning system. This trade-off is especially apparent within a land-use plan. Flexibility and legal certainty are often seen as communicating vessels: the demise of one leads to an increase in the other. Within land-use plans, however, the connection between the two is more subtle. For a land-use plan, the choice between being specific or open, and rigid or adaptable, determine the amount of flexibility. With these choices a land-use plan can increase its flexibility without decreasing legal certainty. Within reason the legal certainty can even benefit from more flexibility. However, current academic literature lacks a structured way to analyse flexibility contained within a land-use plan. Such a method is necessary for analysing and comparing different land-use plans. This paper will provide such a method and analyse thirteen different land-use plans in the Netherlands on their flexibility. It will show that a structured method can prove to be useful for analysing and comparing different land-use plans. The research provides insight into the complex balance between flexibility and legal certainty and presents an assessment tool which can be used for further academic research.

1. Introduction

In the heart of each planning system lies the trade-off between flexibility and legal certainty (Buitelaar and Sorel, 2010), every planning system contains some of both. The connection between flexibility and legal certainty has already been extensively discussed (Van den Broeck, 2014; Van der Valk A., 1998; Tjepkema, 2012). General thoughts on this subject tend to describe a shift from a comprehensive planning approach towards a more participatory or adaptive planning approach. Some describe the relation between flexibility and legal certainty as a negative correlation (Tonnaer, 2015). According to this assumption, they have an inverse relationship, which means that an increase of one leads to a decrease of the other. This paper will put this perspective into a new theoretical framework. It will show that flexibility and legal certainty within a planning system are not necessarily opposites, but are intertwined with one each other in a more complex manner. The relationship between flexibility and legal certainty is much more nuanced than often believed in academic literature. Understanding this complex relationship is a necessity for understanding the social impact of the trade-off between flexibility and legal certainty. The phrasing of ‘trade-off’ implies a negative correlation between flexibility and legal certainty. Therefore this paper will describe the

relationship between the two as a ‘balance between flexibility and legal certainty’. This paper aims to contribute to the understanding of the complex relationship between flexibility and legal certainty. While academic literature explains in great detail the theoretical relationship between flexibility and legal certainty and case studies research this relationship in practice, a comparative research over a multitude of cases is lacking. This paper will draft a method or ‘assessment tool’ to compare the flexibility and legal certainty over a multitude of cases. This paper will also test this tool and examine whether or not this tool is suited for application further research.

A land-use plan regulates the allowed activities for a certain location (Needham, 2014). The amount of flexibility and legal certainty influences the society and the institutions within this society. In the broadest sense, institutions are simply rules (Steinmo et al., 2001). Therefore, a land-use plan is simply a translation of municipal values and principles. Formal organizational structure and behaviour is shaped by institutional forces, professions, public opinion and the law (Powell, 2007). The law and land-use plans can also be viewed as institutional fields. This field is not easily changed through coercive, normative and mimetic processes (DiMaggio and Powell, 2000). For institutions, regulations are as much an endogenous force as an exogenous constraint (Edelman, 1992; Edelman et al., 1999). Changes in regulations and

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other normative systems can reshape institutions and institutional fields (for example: Scott et al., 2000; Sahlin-Andersson and Engwall, 2003). In regard to land-use plans this means that the rules provided in a plan influence institutions, institutional fields, and society as a whole. Holtslag-Broekhof et al. (2014) showed that rules and institutions also influence interpersonal and intrapersonal aspects. The choice between flexibility and legal certainty can provoke changes and activities or can establish a standstill. Therefore, the decision to either be flexible or provide certainty should be a well thought out one. This paper will help planners understand the relationship between flexibility and legal certainty in more detail. With this land-use plans will be more capable to influence social actions, institutions, institutional fields and the society as a whole.

The influence of the land-use plan on other institutions makes the decision between providing flexibility or giving legal certainty an important one. Legal certainty concerns the degree to which rightful claimants are certain of their defined right, including the predictability of government action respecting these rights (Van Damme et al., 1997). In this context flexibility means the ability of a land-use plan to cope with unforeseen events and provide room for development. A land-use plan considers both the demand for flexibility as well as the demand for legal certainty and decides between these two.

Although the balance between flexibility and legal certainty exists within every planning instrument, the land-use plan has the most considerable impact on this balance. It contains public binding regulations, whereas a spatial vision only sets out policy outlines, and a permit contains only individual binding regulations. A land-use plan prescribes what kind of activities are allowed for a certain location (Needham, 2014). On the one hand, a plan can be precise in regulating and allowing activities. For example, it can allow only one type of activity with very strict building requirements. At first glance this is perceived as a move for legal certainty above flexibility. In practice this only provides one version of legal certainty: procedural certainty. A deviation from the land-use plan is necessary and must await the formal procedure of this permit (For Example, Buitelaar and Sorel, 2010; Alfasi et al., 2012). On the other hand, a land-use plan can allow multiple kinds of activities, such as working, living, or trading in the same location. This makes the plan capable of coping with future activities that are not yet present in the zoned location. Booth (1996) described this as the inevitable certainty-discretion dilemma: strict and detailed land-use plans become rapidly incapable of guiding uncertain futures, while general and flexible land-use plans often do not provide enough certainty for business, citizens or even governments. Savini et al. (2014) described this principle as the regulation dilemma. This dilemma also entails the tension between either providing general regulations and open procedures versus the need to provide legal certainty. and Given the importance of the land-use plan in the balance between flexibility and legal certainty the assessment tool will be primarily designed to examine the flexibility and legal certainty in land-use plans.

Every planning system copes with the tension between providing flexibility or giving legal certainty. In the Netherlands this tension is now more apparent. The Netherlands is currently drafting 'The Environment and Planning Act' (Kamerstukken II, 2013/14 33962, 1-3). This is a major revision of existing planning laws and will be put to practice in 2021 (Binnenlands Bestuur, 2017). It attempts to revise the tension between flexibility and legal certainty. It proposes that land-use plans should be more flexible and there should be fewer legal obligations and restrictions to draft an open land-use plan. Some municipalities are experimenting with the upcoming Act and are making an 'extended land-use plan'. Analysing both the extended land-use plans and regular land-use plans on the subjects' flexibility and legal certainty is necessary to fully comprehend the difference in how these plans cope with the balance between flexibility and legal certainty. A structured method for this analysis is not provided in the available literature. Hence this paper will provide such a method. Designing this method requires a further understanding of the balance between flexibility and

legal certainty.

This paper aims to explain the relationship between flexibility and legal certainty and put the relationship within a new theoretical framework. While academic literature extensively describes the theoretical relation between flexibility and legal certainty, and contains a great variety of case-oriented research, it lacks in comparison a multitude of cases with one each other. The paper therefore also aims to lay the groundwork for further comparative academic research concerning the balance between flexibility and legal certainty in land-use plans. The paper will draft a methodology to compare the balance between flexibility and legal certainty to help understand the differences in the balance between different land-use plans.

2. Theory: legal certainty versus flexibility

To analyse the balance between flexibility and legal certainty more thoroughly, both terms will be viewed in detail. First, we will look at the meaning of **legal certainty**. "*Certainty is a slippery concept, hard to pin down with its multiple nuances and its relationship to a raft of other closely related definitions and meanings. These include knowledge, belief, doubt, justification, truth, conviction, intuition, opinion, judgement, risk and a host of others*" (Fingland, 2011, p. 1). However, relating the concept of certainty to a legal perspective provides a direction in prescribing a definition. Government regulations are produced to ensure a certain amount of legal certainty. For example, laws guarantee uniform rules, principles and categories to steer social dynamics and regulate future actions (Pirie, 2013). Laws are rational translations of social values and offer assurances (Weber, 1954). Land-use plans are no exception to this concept. They are produced to predict and regulate future activities. Healey (2004) also makes a comparison with the prediction of future activities. According to her, the main target of planning is determining wise interventions to realise a desired situation. In the belief of Pirie (2013) this would be described as steering social dynamics. Although the future is never set in stone (Fingland, 2011), especially in the domain of spatial planning and environmental studies (Van Buuren, et al., 2013), a land-use plan must be capable of providing some legal certainty. A specific and rigid land-use plan does not give right to the amount of uncertainty in the spatial domain. A specific plan will never be able to regulate (unforeseen) future events. This uncertainty within the spatial domain does not mean legal certainty cannot be provided.

Two types of certainty can be distinguished in planning systems (Van Damme et al., 1997). The first form is **material certainty**. This refers to the amount of certainty regarding the content of the right of ownership (including the certainty provided by land-use plans) (Buitelaar and Sorel, 2010). Material certainty concerns normative rules like the maximum building height, building sizes, maximum sound production or the allowed maximum traffic generation. The second form of certainty regards the **procedural certainty**. Procedural certainty refers to how much certainty people have that they will have a say when restrictions on these rights of ownership change (such as during a land-use plan revision) (Buitelaar and Sorel, 2010). In other words, it concerns the decision process of how activities are allowed. A long lasting, participation-filled process with considerable legal protection provides more procedural certainty than a short process with almost no objections and appeal possibilities. The interrelation between both material and procedural certainty determines the amount of legal certainty. It will be made apparent that this distinction between material and procedural certainty also relates to what is meant by 'flexibility'.

Second, we will look at the meaning of **flexibility**: this is usually seen as the exact opposite of legal certainty (Tonnaer, 2015). Whenever the flexibility increases, the legal certainty will suffer. However, this relation does not hold when looking at land-use plans. Flexibility is better seen as a connected subject to legal certainty but not as an absolute opposite. This is further confirmed when the distinction between material and procedural certainty is followed.

As noted, the material certainty concerns the right of ownership, and it contains a trade-off within itself. On one side of the axis, the plan is precise. It describes in detail what kind of activities are allowed and which conditions must be met. A specific plan gives limited room for alternative activities and does not foresee any events in the future. In practice these land-use plans are usually framed as ‘conservation plans’. One might believe a specific plan gives a high amount of material certainty. However, when viewed within the whole of the planning system, this is merely a persuasion. [Fingland \(2011\)](#) and [Van Buuren et al. \(2013\)](#) stated that the future within the spatial domain is uncertain. Whenever a land-use plan is specific and precise, it cannot regulate future activities in a certain way. The plan might give the impression that one is protected, but deviations from the plan are frequently needed. The planning practice in an area planned by a (to) precise land-use plan consists of planning deviations, amendments and permit-planning. With such a precise plan the only certainty is that a deviation will follow. An open plan, on the other hand, gives room for alternative future scenarios. The number of allowed activities in one location can be higher. But better predictions on activities in the future do not mean a demise of certainty. Even the regulations themselves can have broader characteristics. Instead of requiring a norm of 1.4 parking spaces per residence the regulation can contain ‘enough parking facilities’. These kind of ‘open regulations’ might not be optimal for the material certainty, but a specific plan isn’t either. The optimal value for the material certainty lies somewhere around the middle of the axis between a **specific and open** land-use plan. What is clear is that a more open plan can more quickly facilitate activities in the future. This is made apparent in [Fig. 1](#), where an open land-use plan can provide more regulating rules for activities than a plan with a more limited scope. It might be preferable to be roughly right than precisely wrong.

The procedural certainty refers to how much certainty people have that they will have a say when restrictions on these rights of ownership change. Relating this to flexibility there is once again an internal trade-off within the procedural certainty. On the one hand a land-use plan (and the planning system as a whole) can be very rigid. Deviations from the plan require a long procedure, a lot of participation and there are several legal protections. Therefore, deviations from the plan are time consuming. The procedural certainty in this case is high. On the other hand, procedures can be quick without a lot of participation requirements and even with minimal to no legal protection. This makes procedures quicker and the plan better suited to cope with unforeseen events. It makes the land-use plan more adaptable. In this case, the procedural certainty is low. On the axis of **rigidity and adaptability**, the connection with procedural certainty is linear. The more rigid, the higher the procedural certainty; the more adaptable, the lower the procedural certainty. However, the more adaptable the plan, the quicker it can anticipate unforeseen activities. [Fig. 2](#) illustrates this principle.

All the above describes two axes which determine the legal certainty and flexibility of the plan. The choice in this balance between flexibility and legal certainty is derived from the amount of material and procedural certainty in the plan. The material certainty is determined by the

amount of specificity and openness of the land-use plan. The procedural certainty is rated by the rigidity and adaptability. In the end, the balance between legal certainty and flexibility consists of two fundamental choices within a land-use plan: the choices between *specificity versus openness* and *rigidity versus adaptability*. [Fig. 3](#) illustrates the two fundamental choices which influence the flexibility and legal certainty.

3. Framework: assessing flexibility

With use of the two axes, an assessment tool can be developed. For this assessment tool, it is important to maintain an integral view on both axes and avoid a sectoral analysis. First, both axes are viewed independently to describe an assessment unit. After determining these assessment units, both axes are then combined into one assessment tool. For the **axis between rigidity and adaptability**, the assessment unit is largely determined by the time it takes to deviate from the land-use plan. A law provides instruments for deviations from the land-use plan, which influence the procedure time within the land-use plan and regulate how most permits are granted. The maximum amount of rigidity, as well as the maximum amount of adaptability, is easily derived. For most western planning systems, the most rigid a land-use plan can be is to not regulate a certain activity. When the start of such an activity is requested, a permit for deviation of the land-use plan must be provided, or the land-use plan must be changed. Both of these are very time consuming. In the Netherlands, this permit is known as the ‘extensive deviation procedure’ (uitgebreide afwijkingsprocedure). The most adaptable way of planning in a land-use plan is to directly allow activities; a permit is not required in these cases. Consequently, there is no procedure. However, between these two maxima the law decides what possibilities exist for influencing the rigidity or adaptability of a land-use plan. In the Netherlands the law provides the ability to work with (from rigid to adaptable) a ‘delegation decision’, a ‘deviation plan’ an ‘operation plan’, an ‘internal deviation’, a permit for a ‘land-use plan activity’, a ‘notification requirement’ or a ‘policy rule’. In the case of the Netherlands the law provides a wide and diverse arrangement of instruments that affect the axis between rigidity and adaptability.

Every land-use plan in the Netherlands contains some of these instruments. A municipality decides which instruments are most suited for the area influenced by the land-use plan. Of course, some instruments are more used than others. For example, the ‘land-use plan activity’ is an instrument provided since early 2018 and therefore not yet fully applied in practice. The ability to work with this instrument is also restricted to a quarter of the municipalities— those that are experimenting with the ‘extended land-use plan’. What is apparent for the Dutch planning law is that it provides many instruments to influence this axis. For Dutch land-use plan drafters the instruments are theirs for the taking. There is a broad municipal freedom to choose for a rigid or adaptable land-use plan. The formal procedure/ planning instrument used for allowing new activities will be used as indicator to determine the amount of procedural certainty. Because procedural certainty relates to how much certainty people have that they will have a say when restrictions of their rights change and the formal procedure determines

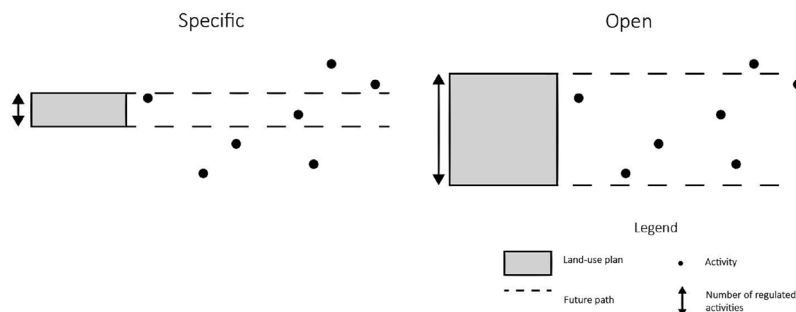


Fig. 1. specificity and Openness.

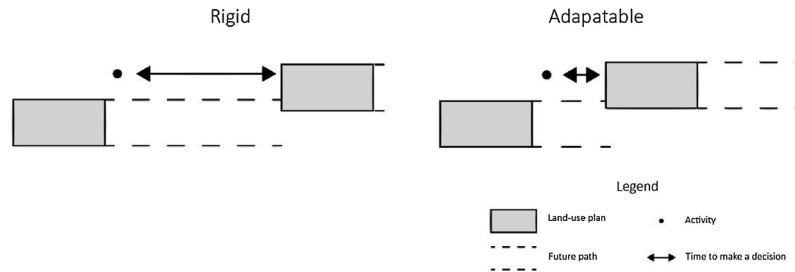


Fig. 2. Rigidity and Adaptability.

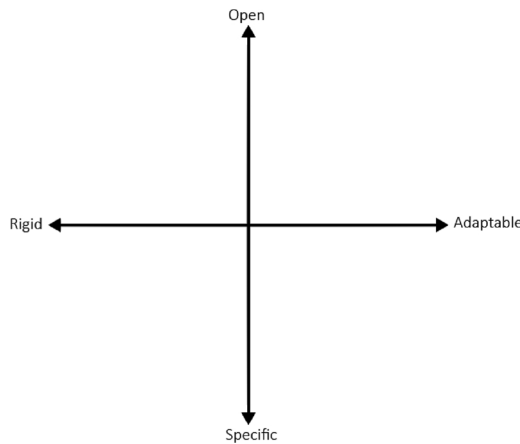


Fig. 3. Matrix for flexibility.

how stakeholders will be involved in the planning process, using the formal procedure as an indicator provides a firm basis for analysis.

The axis between specificity and openness is mostly decided by a policy decision of the municipality. The municipality can either choose to allow multiple activities in a certain location or can only zone that which is already present. In the latter there is almost no room for new activities. The characteristics of the area are influential on this decision. A living area with a small supermarket and a primary school does not require a wide array of activities. An inner city with mixed usages requires a more diverse land-use plan. The choice for many or few activities in a location is considerably context-dependent.

The amount of covered activities by the regulations in the land-use plan is the axis assessment unit. In the Netherlands, land-use plans are designed following a strict guideline called ‘standard comparable land-use plans’ (*Standaard Vergelijkbare Bestemmingsplannen*). This allows for a strict distinction between what kinds of activities are allowed with what kind of zoning. In total there are fourteen different distinguishable activities. Of course, a land-use plan for an inner city contains a larger number of these activities than a land-use plan for a living area. These two areas cannot be compared. But this method does provide a basis for comparison between areas that share some characteristics. In addition to the number of regulated activities, the openness within the regulations of a specific activity also determine the openness of a land-use plan. An example is a ‘catering industry’ activity. There exists a great difference in allowing a coffee bar or a night club, but both are (in the Netherlands) regulate by the ‘catering industry’ activity. The law dictates that there are five different categories distinguishable, one being small activities with a small impact on the environment and five being large activities such as an hotel or night club. In this case the openness of the plan is not only determined by the amount of total activities, but also by what is regulated under these specific activities. In Dutch planning practice most categories within activities are regulated or uniform over all the land-use plans. Contain these specific regulations and comparing them to other land-use plans is therefore possible.

Furthermore, while looking at the specificity and openness of a

land-use plan, a distinction between usage-rules and building-rules must be made. With usage-rules the number of regulated activities is a determining factor. However, this is not the case for building-rules. The building regulations relate to all activities; the number of activities does not influence the building regulations. These building regulations must be viewed independently per building plot. The maximum openness should be at 100 % building occupation of a plot and the maximum specificity should land at zero to no building rights.

The two axes can be combined into one assessment tool. The horizontal axis is determined by the number of instruments that influence procedures and the vertical axis is formed by the number of activities that can be allowed on certain land. The number of rows and columns varies per planning system. However, the analysis does not change in structure or methodology. An assessment tool which is not yet orientated on a specific planning system is presented in Fig. 4.

3.1. The Dutch assessment tool

An assessment tool orientated on the Dutch planning system was necessary for this specific analysis. However, it is possible to differentiate the scaling of the axis to accommodate analysis of different planning systems. The variables of the horizontal and vertical axis have already been described. Vertically, the number of activities that can be regulated has been set at a maximum of 14. This number is given by a Dutch standard for drafting land-use plans (SVBP). The horizontal axis is formed by the planning law, more specifically the number of instruments that influence the procedure. The Dutch planning system provides many instruments such as the delegation decision, operation or deviation plan, the internal deviation, the notification requirement, the policy rule, or the directly allowed activities. All instruments follow a different legal procedure to allow activities. Therefore the horizontal axis is divided in these six instruments (in order of more time-

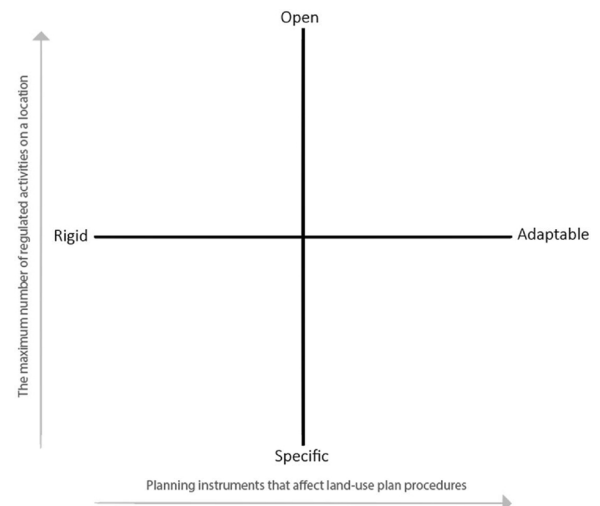


Fig. 4. Assessment tool format.

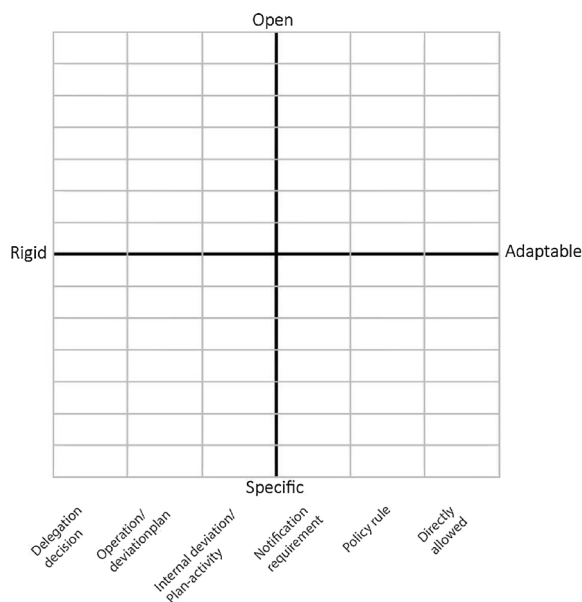


Fig. 5. Dutch assessment tool.

consuming procedure to shorter procedures) Fig. 5 presents the assessment tool for the Dutch case.

With the axis of the assessment tool tuned on the Dutch planning system, Dutch land-use plans can be examined. Applying the model to land-use plans a short analysis of every individual land-use plan is a necessity. Dutch land-use plans follow a strict format, as formulated by the SVBP. A land-use plan can contain a maximum of 14 different land-uses. Every land-use is regulated by one of the six planning instruments within the plan (or none if the activity is not allowed). Every regulated land-use fills in one box in the corresponding planning instrument pillar. The Dutch planning system provides two complications. First of all, there is a strict distinction between building regulations and usage regulations. Building regulations are, with few exceptions, regulated by the internal deviation permit. A municipality can hardly deviate on the horizontal axis. Also, the building regulations are not per definition directly related to the usage regulations. Therefore, the openness of these regulations must be interpreted on a different way. Mainly by calculating the percentage of an area that is allowed to be built on, the height of the allowed buildings and regulations concerning the aesthetics of a building. Secondly, land-uses can be regulated by multiple planning instruments. One industry category can be regulated by an internal deviation while another category industry is regulated by deviation of the land-use plan. When this occurs the block is divided by the number of used planning instruments and distributed accordingly.

The assessment tool can also present an overall score of the land-use plan. This overall score is useful for quick comparisons between land-use plans. The score is determined by two calculations. The vertical position is given by the average openness of both the building regulations and the accumulation of all usage regulations. The horizontal position is provided by the weighted average (according to the number of activities per planning instrument) of all usage-regulations.

The model (as described above) has been applied to 13 different 'extended land-use plans'. These 13 land-use plans have been selected due to their progress in the planning process, type of land-use plan area, and comparison possibilities with other land-use plans. All 13 municipalities of the land-use plans wanted to cooperate with this research. As an illustration, one concluding assessment tool of a specific land-use plan is provided in Fig. 6. The tool provides a clear view on how the usage and building regulations relate to the axis rigidity-adaptability and the axis openness-specificity. These thirteen different land-use plans are mostly examined to test the assessment tool. Its aim was to view what kind of obstacles arise while using the assessment tool and

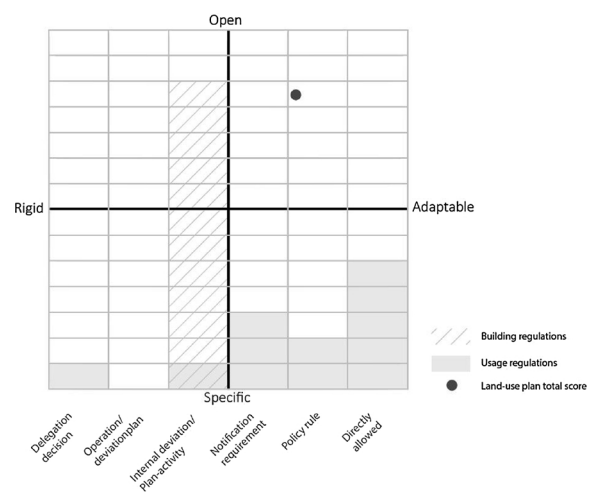


Fig. 6. Example of assessment tool.

Table 1
Analysed land-use plans.

Land-use Plan	Municipality	Planning target
'Oosterwold'	Almere	New residential Area
'De Kade'	Maassluis	New Residential Area
'BavoTerrein'	Noordwijkerhout	New Residential Area
'Binckhorst'	Den Haag	Transformation Area
'Hembrug'	Zaanstad	Transformation Area
'Rijnhaven Oost'	Alphen aan den Rijn	Transformation Area
'Binnenstad'	Oldenzaal	Inner City
'Laan1945'	Beuningen	Inner City
'BrainportPark'	Eindhoven	New Business District
Business Centre Treeport	Zundert	New Business District
Dordtse Kill IV	Dordrecht	New Business District
Countryside	Borsele	Rural Area
Countryside	Boekel	Rural Area

whether or not land-use plan drafters find the conclusion agreeable.

Table 1 states which land-use plans were examined. The table also provides insight in what type of area is planned by the related land-use plan. Applying the assessment tool to these 13 land-use plans serves the main purpose of testing the tool and look at what academic relevance the outcomes provide. Applying the tool to these 13 land-use plans also serves as a first attempt to generate insight in the amount of flexibility derived from these specific land-use plans. These insights will be shared in the concluding paragraph of this paper assessment. The outcomes of the tool must be recognizable, agreeable and reproducible. Therefore interviews have taken place with the land-use plan drafters of these specific land-use plans and other researchers of planning departments of universities. The land-use plans drafter were the project leaders of the respective municipalities.

With 8 of these land-use plans, a detailed interview has taken place with the land-use plan drafters. In these interviews the results of the assessment tool were discussed, as well as the main characteristics of the land-use plan. After an explanation on how the assessment tool was constructed, all interviewees agreed with the findings. From a methodology perspective it was necessary to emphasize that the conclusions of the assessment tool are still subjective. The value of the tool lies within structuring and reproducing the same subjective method for a multitude of land-use plans.

4. Assessment tool in practice

All examined extended land-use plans are categorized into types of areas. There are five distinguishable areas: a 'new residential area', a 'transformation from business to mixed usage', an 'inner city', a 'new

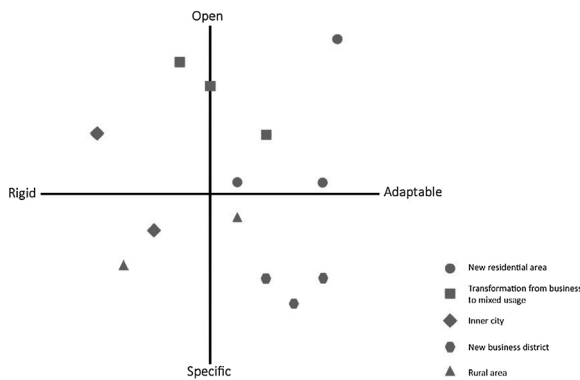


Fig. 7. Total score examined land-use plans.

business district’, and a ‘rural area’. The total score of each land-use plan can be compared to the other total scores. Fig. 7 illustrates the total score of all the examined land-use plans and distinguishes the different types of areas for which they are made.

This testing of the assessment tool with these 13 different land-use plans already provides first insights in the relationship between flexibility, a land-use plan and the type of area the land-use plan regulates. Land-use plans for a new residential area are all found in the Open-Adaptable corner of the assessment tool. Looking at the specific regulations within these land-use plans it is found that there are some uniform choices in regulations. These land-use plans tend to favour directly allowed activities above approval via an internal deviation. In the two most specific land-use plans for new residential areas there was a master-plan available. This might explain why the regulation contain mostly directly allowed activities. The municipality can use other planning instruments (for example an agreement with the land-owner) to steer the development.

The land-use plans regulating new business districts show comparison with the new residential areas on the rigid-adaptable axis. However, they divers on the open-specific axis. The land-use plans for new business districts regulate less activities. These business districts are more mono-functional than the residential areas.

Furthermore it is shown that the land-use plans for a transformation area (from business area to a more multi-functional area, including living functions) score high on the open-specific axis. These regulations are open to allow for function mix. Although these land-use plans allow for a multitude of different land-usages they mandate a longer process to allow these land-usages. The land-use plans require a deviation plan, internal deviation or notification requirement to allow most land-usages. This might hold a relationship with the complexity of allowing for mixed usages. A municipality might want to more thoroughly test the living environment created by these mixed functions.

For the land-use plans regulating inner cities or rural areas there was no relationship found. The used visualisation is useful for comparing land-use plans. More variables are necessary to include in the assessment tool to provide a larger insight in the flexibility of a land-use plan.

All interviewees declared that the extended land-use plans are more open and adaptable than a regular land-use plan. The drafters of the land-use plans felt inclined to design a land-use plan that provided more room for developments. Although some of the examined land-use plans are still found in the rigid-specific quarter of the assessment tool, they are more adaptable or open than their regular versions. This conclusion must be seen within the context of the selected cases. All examined plans are made because the municipality wanted to provide more room for new initiatives. The experiment in which the municipalities participated is specifically designed for this purpose. Therefore, the position of all extended land-use plans as provided in Fig. 7 might not be representative of a general, normal, land-use plan in the Netherlands.

For drafting conclusions on the practical implications of the assessment tool, this does not create a constraint. The tool can position individual plans in context to each other and can help determine certain characteristics of land-use plans which are positioned close to each other in the matrix. Conclusions on the amount of flexibility of a land-use plan (also in relation to other land-use plans) can already be drafted. Looking at Fig. 7 it can be claimed that all land-use plans for a new residential area are more flexible than land-use plans for a rural area. The assessment tool can compare different land-use plans.

For determining characteristics of types of land-use plans a more in-depth analysis is necessary. This paper will scratch the surface of such an analysis and set out focal points for further research.

The assessment tool does provide a firm basis for making a distinction between different ‘types’ of land-use plans. The tool gives four quadrants in which the land-use plans can be positioned. The position is directly related to the amount of flexibility in a land-use plan. Therefore, each quadrant contains its own characteristics and is distinguishable from another. This distinction is, in essence, between the goals of the land-use plans. Depending on which quadrant a land-use plan is positioned in, a land-use plan can either be *protective*, *anticipative*, *reactive*, or *empty*. Fig. 8 illustrates this principle.

Distinguishing these four types of land-use plans helps in understanding the relationship between flexibility and planning. For example, it could be found that some specific areas are more often found in one of these four types than in others. Even the context of a land-use plan, such as what kind of demography of people are present in the land zoned by the land-use plan, can correlate with what type of land-use plan is provided. Furthermore, it could be found that certain characteristics are present within one type of land-use plan. A protective land-use could, for example, be more focused on legitimacy, and an empty land-use plan on efficiency. To draft these kinds of conclusions, a thorough analysis is needed. The following are some guidelines and focal points for this analysis, but it would be superficial to draft these conclusions.

The protective land-use plan mainly focuses on the protection of existing stakes and activities. The plan conserves current land-uses. It is believed that in practice most land-use plans of the Netherlands can be placed in this quarter, given that most complaints about land-use plans consider the amount of detail of the plan and the inability to be changed (Buitelaar and Sorel, 2010). Protective land-use plans are specific and rigid. It is therefore suggested that these types of plans are most suited for areas where almost no changes in the usage of land occur. A protective might influence citizens, businesses and governments towards a more conservative approach.

The reactive land-use plan tries to conserve existing activities while

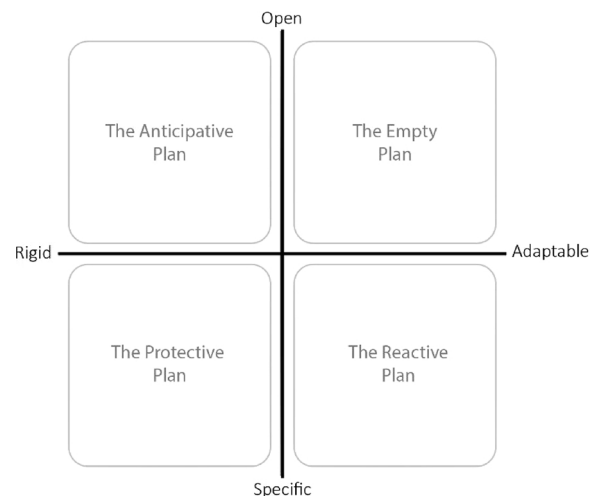


Fig. 8. Protective, Reactive, Anticipative and Empty land-use plans.

also providing short deviation procedures to allow new procedures. It is protective until a preferable activity arises. The land-use plan can be easily changed in favour of this new activity. However, because this procedure must be as short as possible to be as reactive as possible, the procedural certainty of the land-use plan is low. This type of land-use plan is specific and adaptable. New activities which can be allowed using short deviation procedure usually contain minor deviations from the existing plan, it is however possible to allow more major activities via flexible planning.

The opposite is true for anticipating plans. These types of plans try to foresee and predict future activities and regulate them in the present. Because there is a regulative framework in place for these activities they can be more easily allowed. The plan is anticipating (multiple) predicted futures. In this case the land-use plan is providing more freedom in the outcome of the planned area. The regulations within the land-use plan are open. When an activity occurs which is not foreseen, the plan is inadequate to regulate it. Because the outcome of the plan is more uncertain a land-use plan might built in more procedural certainties and obligations to (procedurally) assure a desired planning outcome.

The empty plan has the goal of allowing all sorts of activities as quickly as possible. This type of land-use plan provides regulatory room for multiple activities and is quickly changed whenever an activity does not fit within the regulative framework. The plan allows multiple kinds of activities in the same location with the use of a short procedure. The land-use plan is well-suited for development sites or organic developments. Out of the four different variants of land-use plans this type provides most freedom to developers, initiators or other parties who wish to start new activities.

This paragraph has tested the assessment tool in practice and has provided some initial results of the analysis. It has been showed that some types of land-use plans tend to cluster together, such as land-use plans for a new residential area. More research could confirm this clustering of land-use plans. Furthermore, four variants of land-use plans are determined. Each with their own weighing of the balance between flexibility and legal certainty. Because each variant of land-use plans puts the balance in practice in a different way, it is believed that the influence of every variant of land-use plans on citizens, businesses and governments is different.

5. Discussion

This paper breaks with the assumption that flexibility and legal certainty are negatively correlated (for example: [Tonnaer, 2015](#)). The belief that a demise of the one leads to the increase of the other does not take the full complexity of the balance between flexibility and legal certainty into consideration. In the words of [Booth \(1996\)](#) the 'certainty-discretion dilemma' consists of the dilemma between being either to strict and detailed which makes the land-use plan rapidly incapable of guiding uncertain futures and being to general and flexible which does not provide enough certainty for businesses, citizens or governments. [Buitelaar and Sorel \(2010\)](#) call this the trade-off between legal certainty and flexibility. Legal certainty refers to the degree to which rightful claimants are certain of their defined right, flexibility means, within the context of a land-use plan, the ability of a land-use plan to cope with unforeseen events and provide room for development. [Buitelaar and Sorel](#) also divide this trade-off in two axes or dilemmas, a material and procedural axis. This paper added upon the material and procedural axis by reshaping these axes into an assessment tool for analyzing the amount of flexibility in a land-use plan.

With the theoretical underpinned assessment tool it is possible to assess a large amount of land-use plans on the amount of flexibility they contain. Currently most analysis of land-use plans have a comparative case study character. This type of research provides in depth knowledge of multiple cases. With the drafted assessment tool it is now possible to add a more quantitative comparative view upon these in depth case

studies. This is a necessity to improve our understanding in the flexibility of land-use plans and answer the question what forces drive a plan to cope with the balance between flexibility and certainty in different manners. While the method was tested upon the Dutch planning system, the theoretical foundation of the method could be applied to other planning systems. Every planning system can be related to the material and procedural axis of the measuring tool. The operationalization of these axis differ for each planning system. More research with the provided methodology in other planning systems might prove useful to better understand the relationship between flexibility and legal certainty.

Furthermore, the assessment tool is capable of providing an overall 'score' on the amount of flexibility in a land-use plan. This overall score, and more specific measurements to draft to score, can be used to compare land-use plans. However, it might be profitable to accompany this research with more in depth analysis of individual land-use plans. This more in depth analysis might be provided by adding other independent variables to the assessment tool, which was not done in this paper. However, information that is not contained within the plan cannot be assessed. For that purpose a more qualitative analysis is necessary. While the assessment tool answers question on 'what' land usages are regulated and 'how' land usages are regulated, it does not provide insight in 'why' these land-usages are regulated the way they are. Again, an in depth analysis might give more knowledge on this subject.

The thirteen analyzed land-use plan in this paper served the purpose of testing the assessment tool. The outcomes of this testing do, however, show some clustering of type of land-use plan and the balance between flexibility and certainty. For example, the land-use plans for new business areas and new residential areas are fall in the same category of land-use plan, being the 'reactive plan' respectively the 'empty plan'. The quantity of land-use plans and the lack of more independent variable makes this analysis not suited for drafting general conclusions. Hence, it was not the goal for this analysis. Further research could add value to the assessment tool by introducing relevant independent variables and increase the amount of analyzed land-use plans.

This paper has shown how a land-use plan can cope with the dilemma of providing certainty or flexibility and argued that this is not a simple black-or white bias. The paper has moved towards a tool for assessing flexibilities in land-use plans.

6. Conclusion

This paper has analysed the complex balance between flexibility and legal certainty in land-use plans. The relationship between flexibility and legal certainty is a more complex one than generally believed. This paper has shown that the choice between being either rigid or adaptable and the choice between being either specific or open determines the amount of flexibility. That the balance between flexibility and certain is determined by these two choices, which both influence the balance in a unique way, emphasizes that the balance between flexibility and legal certainty is not a simple black or white bias. Following this theoretical analysis of flexibility and legal certainty, an assessment tool is presented which can determine the amount of flexibility in a land-use plan. With the assessment tool tested on different land-use plans, its outcomes confirmed and discussed with land-use plan drafters and with its outcomes being the same despite being applied by a different researcher, the tool has proven to be a uniform and reliable method for assessing the amount of flexibility in a land-use plan.

The assessment tool has proven capable of analysing different types of land-use plans, comparing them to one each other and categorizing them. The assessment tool is structured in an unambiguous manner to answer a subjective question: 'How flexible is a land-use plan?'. Applying the assessment tool on the 13 land-use plans provided first insights in the flexibility of specific types of land-use plans. It was

shown that land-use plans for new district areas tend to regulate less activities than other land-use plans. It was also shown that land-use plans for transformation areas requires longer procedure to allow new activities than land-use plans for, for example, new residential areas. Adding other independent variables to the assessment tool is necessary to find the reason for these occurrences. The drafting and testing of this assessment tool has further shown that every land-use plan can be categorized into one of four types of plans, being: protective-, reactive-, proactive- or empty land-use plans.

A protective plan focusses on protecting existing stakes and functions, and it does so by being rigid and specific. A reactive plan tries to be passive in allowing new activities but when new activities arise, the plan can quickly regulate them. The plan is therefore specific and adaptable. An anticipative plan tries to accurately predict future activities. Its regulations are more open, but changes in the regulations are not easily made, so the plan is rigid. Last, the empty plan tries to provide as much room for as many activities as possible. The regulations are open and the plan is adaptable for unforeseen activities.

Land-use plans influence institutions and citizens. The amount of flexibility or legal certainty is an important factor in how these institutions are influenced. The provided assessment tool can be an instrument to further analyse different land-use plan and assess how flexible they are. To do so a large amount of land-use plans must be analysed with the use of the assessment tool.

CRedit authorship contribution statement

Duncan Van den Hoek: Conceptualization, Methodology, Formal analysis, Investigation, Writing - original draft, Visualization. **Tejo Spit:** Conceptualization, Validation, Resources, Writing - review & editing, Supervision. **Thomas Hartmann:** Validation, Resources, Writing - review & editing, Visualization, Supervision.

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