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**RESEARCH ARTICLE**

# Legal Effects of the Use of Artificial Intelligence Tools by Administration in the Zoning Plan Process of Preparation and Implementation*

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**Abstract**

One of the most important stages in terms of regulating land plots and ensuring that construction is carried out in an orderly manner is the process of preparing zoning plans. Accurate preparation of zoning plans based on real numerical data will facilitate the implementation process and will also reduce the legal disputes that will arise. At this point, the use of artificial intelligence tools in zoning plans will be beneficial in terms of ensuring the optimisation of setback distances, identifying public goods and facilitating zoning programs and zoning plan applications based on them. However, the use of these tools, especially when operated autonomously or because of machine learning, can also lead to machine-based defects. Accordingly, the preparation and implementation processes in zoning plans should be carried out in a way that includes human intervention, considering the connection between settlement, property and the right to live in a healthy and balanced environment. This study will explain the legal powers of the use of artificial intelligence (AI) tools in the preparation and implementation processes of zoning plans and how this situation will be reflected in the judicial review phase will be explained, also taking into account the principles of zoning law.

**Keywords**

Zoning plan, Artificial intelligence, Zoning program, Planning, Implementation

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## Introduction

In land planning activities carried out by administrative authorities, the determination of the current situation and the prediction are at the forecasting. Accordingly, the accurate determination of the current situation and identification of the needs constitute the main output of this activity. At this point, it is necessary to draw attention to the use of AI tools in administrative activities under the influence of the digital transformation phenomenon. Thanks to the use of AI tools, it will be possible to accurately reveal how the relevant area is actually used, urban design, design alternatives and which areas are needed.[1] In planning activities that are inefficient due to the use of analogue tools, alternatives cannot be produced and real digital data cannot be collected and processed.[2] During the preparation phase of zoning plans, it is possible to act in accordance with the purpose of public benefit by considering the urban texture, to comply with the principle of gradual unity of plans, and to create satellite photographs, aerial photographs and digital data sets for the planned areas using AI tools.[3] In this way, the land planning activity, which is in the '*data hungry*'[4] as expressed in the doctrine, is fed by large data sets and forms a basis for subsequent transformation and similar activities.[5]

In particular, thanks to the algorithms to be entered, the positive and negative aspects of the area to be planned for the future will be analysed as a result of quantitatively revealing issues such as the size of the area and its suitability for construction.[6] In addition, population and pedestrian densities, precedent and height values can be determined in a healthier way. Likewise, in this way, the coastal edge line, the location and number of cultural and natural assets and the boundaries of archaeological sites that should be considered in the planning process can be determined with fewer errors. In addition, the AI tools used will help to determine the elements that need to be taken into account during the implementation of zoning plans, such as the public goods, whether there is a need for expropriation, the location of the parcels where the buildings are located in relation to each other, the determination of the setback distances from the road, and the amount and optimal location of the deduction of the development readjustment share (DRS).

1 Wei He and Mingze Chen, '*Advancing Urban Life: A Systematic Review of Emerging Technologies and Artificial Intelligence in Urban Design and Planning*' (2024) 14 (3) Buildings <https://www.mdpi.com/2075-5309/14/3/835> accessed 9 March 2025.

2 Dorota Kamrowska-Załuska, '*Impact of AI-Based Tools and Urban Big Data Analytics on the Design and Planning of Cities*' (2021) 10 (11) Land <https://www.mdpi.com/2073-445X/10/11/1209> accessed 12 February 2025.

3 Okan Yılmaz and Mehmet Alkan, '*Applicability of Spatial Planning System Package for the LADM Turkey Country Profile*' (2024) 28 (4) Transactions in GIS 858, 860.

4 Thomas W. Sanchez, Hannah Shumway, Trey Gordner and Theo Lim, '*The Prospects of Intelligence in Urban Planning*' (2023) 27 (2) International Journal of Urban Sciences <https://ideas.repec.org/a/taf/rjusxx/v27y2023i2p179-194.html> accessed 9 March 2025.

5 Kamrowska-Załuska (n 2) 12.

6 Sanchez et al (n 4) 181.

In this case, it can be said that the use of AI tools will have positive effects in the creation and implementation process of zoning plans that affect the legal status of the area in terms of zoning law. It should be noted that in order for these effects to become evident in real terms, the applications to be made as a result of the use of AI tools should be made transparent. If this transparency is not guaranteed, it can be stated that legal disputes arising from the execution of administrative procedures carried out in secret will increase.[7] Undoubtedly, the fact that these tools are used and act within certain algorithms will not exempt administrative authorities from legal liability. The variety of tools and autonomous actions that can be used will bring to the agenda the lack of service or strict liability of the administration in the context of damages arising from the implementation actions taken as a result of the implementation of zoning plans.

Finally, administrative and judicial remedies should be open and effectively used in order to review the conformity with the law of zoning plans, which are regulatory administrative acts, as well as administrative acts within the scope of zoning plans.[8] In view of the obligation to announce zoning plans through announcements, the announcement of the effective date of these acts as a procedural stage that has an impact on the litigation process can also be achieved through the use of AI tools.[9] In particular, following the contribution of individuals in the preparation of zoning plans, it will be easier to follow the final process and this process will be more accessible to individuals. This is because it is possible to talk about a plan that can be made accessible to more people through AI tools, rather than just a simultaneous announcement on the local government website.[10]

## I. The Legal Nature of the Preparation and Implementation of Zoning Plans and the Effect of the Use of AI Tools on the Process

When the planning activity of the administration appears in the form of land planning activity in addition to economic and social planning[11], the legal instrument

7 Łukasz Dubiński, '*The Issue of Openness and Impartiality of Administrative Proceedings Resolved on the Basis of an Algorithm*' (2021) (192) Procedia Computer Science 2807, 2812-13.

8 Also see; Nilay Arat, 'Administrative Silence under Turkish Law' in Pedro Aberastury, Oscar Aguilar Valdez (eds.), *Administrative Silence* (Intersentia 2023) 435ff; Halit Uyanık, '*Türk İdare Hukukunda Zımni Red ve Zımni Kabul Müesseseleri Üzerine Değerlendirmeler*', İstanbul Üniversitesi Hukuk Fakültesi Mecmuası (Prof. Dr. Vecdi Aral'a Armağan), (2014) 72 (1) 673, 675-76.

9 Dubiński (n 7) 2813.

10 Art. 8/b of Law No. 3194: '*(...) These plans shall be announced simultaneously for one month from the date of approval in the announcement places determined by the mayor's office and on the websites of the relevant administrations. Plans may be objected to within one month of the announcement period. The objections and plans sent to the municipal council by the mayor's office shall be examined and finalised by the municipal council within fifteen days*'.

11 See; Turgut Tan, *Planlamanın Hukuki Düzeni* (TODAİE Yayınları 1976) 17; Oya Turunçoğlu, *Türk Plancılığının Pozitif Hukuk Açısından Görünümü ve Değerlendirilmesi* (DPT Yayınları 1977) 2; Lütfi Duran, '*Türkiye'de Planlamanın Hukuki Rejimi*' (1975) 8 (3) Amme İdaresi Dergisi 3, 4; N. İlker Çolak, *İmar Hukuku* (2nd edition, On İki Levha Yayıncılık 2014) 77; Kerem Canbazoğlu and Dilhun Ayaydın, '*İmar Planlarının Yargısal Denetimi-I*' (2011) (93) Türkiye Barolar Birliği Dergisi 239, 242.

that enables this is the zoning plan. In this respect, zoning plans are one of the subcategories of the term '*planning*', which is a higher concept.[12] Zoning plans also differ from the concept of a cadastral map as a document that determines the current topographic situation of the city and provides the representation of public goods in various dimensions.[13] As a matter of fact, the country plans[14] (development plans, as expressed in the doctrine[15]) are the hierarchical top plan, which also constitutes the basis for zoning plans.[16]

The provision of public services by administrative authorities in a continuous and sustainable manner, the solution of problems arising from urbanisation on a macro scale, the allocation of space for urban functions on the urban land and the protection and development of historical and natural values depend on it.[17] The zoning planning activity appears as a specialised planning activity that enables the administration to manage the existing immovable properties in a sustainable manner.[18] It is necessary to have some documents in order to build a new city on the existing land and to plan the construction of an old city, that is, to determine and define the shape it will take in the future.[19] It is known that many plans made by some people who have limited power and who are ignorant of this science, but who are very technical men, are not applicable and cause many damages and mistakes that cannot be repaired and

12 In this respect, zoning plans express a '*technical planning*' and differ from the concept of '*urbanisation*' which aims at the social development of the city's health problems, housing problems, proximity of certain people to their workplaces and economic and social conditions. Sadık Artukmaç, *Türk İmar Hukuku* (4th edition, Ayyıldız Matbaası 1976) 14.

13 Artukmaç (n 12) 14. '*A baseline map: It is the map that will be the basis for the plan studies and shows the current use of the land, public buildings, topographic situation*'. Yıldızhan Yayla, *Şehir Planlamasının Başlıca Hukuki Meseleleri ve İstanbul Örneği* (İstanbul Üniversitesi Hukuk Fakültesi Yayınları 1975) 34. Also see; Sait Karabulut, Aslıhan Er and Refhan Abdioğlu, *Şehir Planlama Hukuku* (On İki Levha Yayıncılık 2023) 57. The concept of a baseline map is a document that provides technical data for the preparation of zoning plans and shows the factual reason. Article (Art.) 5 of Law No. 3194 mentions that in the preparation of the zoning plans, it is necessary to first create the state-of-the-art maps. Likewise, polygon and triangulation points to be taken as a basis in the survey maps and the pattern and characteristic points required to determine the topographical condition of the land in specific areas and all fractures, existing roads, underground surface facilities, detail points with appropriate distribution and density to be reference to the equivalent height curves are measured in a way that can also benefit from AI tools. A digital terrain model is produced based on these detailed points. See Regulation on Industrial Areas and Industrial Workplaces in Disaster Areas Art. 7/1.

14 Art. 166/1 of the 1982 Turkish Constitution ('*Constitution*'): '*Planning the economic, social and cultural development, in particular the rapid, balanced and harmonious development of industry and agriculture throughout the country and the efficient use of national resources by taking inventory of and evaluating them, and the establishment of the necessary organisation for this purpose are the duties of the State*'. See also for the concept of the country plan. Hasan Gök, *İmar Mevzuatına Aykırılık Hallerinde Uygulanacak İdari ve Cezai Yaptırımlar* (Yetkin Yayıncılık 2021) 24; Canbazoğlu and Ayaydın (n 11) 242. The information to be obtained about the country and regional planning to which urban planning is connected will help to better understand planning. İ. Hulusi Güngör, *Şehirler Nasıl İmar Edilir* (Çeltüt Matbaacılık 1969) 18.

15 Eraslan Özkaya, *İmar Hukuku Ders Notları* (Yeditepe Üniversitesi Hukuk Fakültesi Yayınları 2007) 27; Denizer Şanlı, '*Planlama Yetkisinin Analizi*' (2009) (3) Ankara Barosu Dergisi 47ff.

16 The Strategy and Budget Presidency is tasked with the duty of preparing a national plan as stipulated in the Constitution. The purpose of Presidential Decree No. 13 is to regulate the procedures and principles regarding the establishment, organisation, duties and powers of the Strategy and Budget Presidency with a general budget under the Presidency of the Republic. Official Journal (OJ). 24.07.2018-30488. It is possible to conclude when the provisions of Art. 5, 56 and 57 of the Constitution are evaluated together.

17 Ruşen Keleş, *100 Soruda Türkiye'de Şehirleşme, Konut ve Gecekondu* (3rd edition, Gerçek Yayınevi 1983) 44.

18 Muharrem Güneş and Mehmet Uzunay, '*Belediyelerde İmar Planlama Süreci ve Denetim*' (2017) (6) Ombudsman Akademik 161-62.

19 Celâl Esad Arseven, *Şehircilik (Urbanizm)* (Devlet Basımevi 1937) 22.

corrected afterwards.[20] However, it is useful to first understand what these types of plans are.

## A. Zoning Plan and Plan Types within the Scope of the Planning Activities of the Administration

In order to ensure the healthy development of cities and towns, the plan that guides, controls and serves the development of land use is called the zoning plan.[21] In this respect, zoning plans differ from physical plans, which are '*a type of planning that deals with the land use of a settlement and the solution of zoning problems at the planning level, but does not include the solution of social and economic problems*'.[22] The main purpose of the administration in preparing zoning plans and the amendment of existing zoning plans is to ensure the public interest, as in other administrative acts.[23] Indeed, zoning plans, which '*aim to meet the social and cultural needs of the people of the region they affect, to create a healthy and safe environment, and to improve the quality of life*'[24], are prepared by the competent administrations by considering the scientific, environmental, artistic and health conditions of the region.

Although zoning plans are referred to by this name, they do not refer to a single plan, but are in a gradual unity[25] with the higher plans and the programmes[26] and implementations prepared by the related zoning plans. This principle of unity makes it necessary for the hierarchically lower plans in the hierarchy to be made in accordance with the upper plan.[27] As can be seen from the definitions of various zoning plans, it

20 Arseven (n 19) 6.

21 Karl B. Lohman, *Şehir İmar Planları Tanzimi Esasları (Transl. Ulusan, Celal M.)* (Ulusal Matbaa 1942) 7.

22 Erol Ünal, Feridun Duyguluer and Z. Ersin Bolat, *İmar Terimleri Sözlüğü* (TODAİE Yayınları 1998) 38. However, there are also common aspects in terms of the planning technique. For example, in zoning plans, there are '*determination and research phase*', '*data evaluation phase*' and '*planning phase*' phases, respectively. Ayten Çetiner, *Türkiye'de İmar Planlama Eylemleri ile Dayanması Gereken Bilimsel Kurallar* (İstanbul Teknik Üniversite Matbaası 1965) 5-6.

23 Although the purpose of administrative acts is to ensure the public interest, special powers may be granted to administrative authorities for specific public interest. Halil Kalabalık, *İmar Hukuku Dersleri* (9th edition, Seçkin Yayıncılık 2019) 153ff.

24 Repealed Regulation on the Principles of Plan Making, Art. 3/11.

25 Art. 6 of the Law entitled '*Levels of Planning*' stipulates that plans shall be prepared as '*Regional Plans*' and '*Development Plans*' in terms of the areas and purposes they cover, and that development plans shall be prepared as '*Master Development Plans*' and '*Implementation Development Plans*', and Art. 8 sets out the principles to be followed in the preparation and implementation of plans, and subparagraph (b), It is explained that zoning plans shall consist of a master development plan and an implementation zoning plan, and that the '*master*' and '*implementation zoning plans*' of the places within the municipal boundaries shall be made or commissioned by the relevant municipalities by ensuring compliance with the regional plan and environmental layout plan decisions, if any, and shall enter into force upon approval by the municipal council. File nr. 2018/381, Decision nr. 2018/1207 (Konya Regional Administrative Court 2nd Administrative Case Chamber, 5 June 2018). See also. Melih Ersoy, 'Planlar Arası Kademelenme' in *Bölgesel Kalkınma ve Yönetişim Sempozyumu* (ODTÜ Mimarlık Fakültesi Yayınları 2006) 215.

26 The limited financial means of the municipalities in comparison with the magnitude of the services to be provided, the level of organisation of the municipal administration being at the same level with these services, and the lack of sufficient quality and quantity of technical, administrative and auxiliary staff in the municipalities make the implementation process of zoning programmes difficult. However, the main purpose of zoning programmes is to put into practice zoning plans that create directive and multiplying effects in their surroundings. Zühtü Can, 'Belediye Yönetimleri Açısından İmar Planları ve Programları' in Tamer Gök (ed) *Türkiye'de İmar Planlaması* (ODTÜ Mimarlık Fakültesi Yayınları 1980) 203.

27 Although the hierarchically higher zoning plans determine the basis and rules of the following plan, a unique plan independent of the upper scale plan is created by the administration. Ömer Köroğlu, *İmar Hukukunda Planlama Süreci*

will be seen as country plan[28], regional plan[29], spatial strategy plan[30], environmental (order) plan[31], master development plan[32] and implementation zoning plan.[33] AI tools will also contribute to observe the compatibility of these plans with each other. Because, because of the use of these tools, it will be determined which details will be included in accordance with the upper plan, rather than simply extending the plans of different scales.

It is possible to exemplify the zoning plans, which must keep pace with the needs of transforming and changing cities and are prepared directly for individuals, can be described as master zoning plans and implementation zoning plans. Master development plans and implementation development plans, which are called zoning plans in the narrow sense, are administrative acts.[34] Zoning plans, which lay down general abstract norms that affect the status of the area they affect,[35] appear as regulatory acts, although they have aspects that differ from the abstract character of regulatory acts.[36] It is also not appropriate to make any scale distinction in terms of the use of AI tools. Likewise, AI tools can be used in cases where there is a specific purpose, such as the protection of coasts, the construction that can be carried

*ve Arazi ve Arsa Düzenlemeleri* (On İki Levha Yayınları 2016) 45. There are also decisions of the Council of State in a similar context. File nr. 2011/5864, Decision nr. 2014/5208 (Turkish Council of State ('TCS') 6th Chamber, 9 July 2014); File nr. 2010/6336, Decision nr. 2014/4768 (TCS 6th Chamber, 17 June 2014); File nr. 2012/1220, Decision nr. 2014/4420 (TCS 6th Chamber, 5 June 2014); File nr. 2019/17643, Decision nr. 2023/5006 (TCS 6th Chamber, 23 May 2023); File nr. 2019/16837, Decision nr. 2022/8321 (TCS 6th Chamber, 4 October 2022).

28 When the justification of Art. 6 of the Law No. 3194 is analysed, it is explained that the existing plan levels are regulated in order to create a zoning planning in accordance with the objectives of national development and to make local administrations effective in the formation of these plans.

29 Art. 5 of the Law No. 3194: '*(...) The plan to be prepared to determine socio-economic development trends, development potential of settlements, sectoral targets, distribution of activities and infrastructure...*'.

30 Spatial strategy plans, which are mentioned in the Zoning Law but do not have a clear definition, are a type of plan that is prepared on the basis of regional plans and determines development strategies for the plans under it. Büşra Akdemir, '*İmar Planlarında Hiyerarşi*' (2021) 1 (1) Konya Barosu Dergisi 133, 135; Karabulut, Er and Abdioğlu (n 13) 20.

31 Art. 5 of Law No. 3194: '*(...) it is a plan that determines the principles and criteria within the framework of general land use decisions that guide the sub-scale plans for settlements, development areas and sectors in accordance with the objectives and strategies of the spatial strategy plans, if any, and is prepared in the region, basin or province as a whole, and is a whole with its plan provisions and report...*'.

32 Art. 5 of Law No. 3194: '*(...) drawn on the base maps in accordance with the general spatial principles of the regional plans, if any, and the environmental layout plans, if any, with the cadastral status, if any, and showing the general usage patterns of the land pieces, the development directions and sizes of the settlement areas, population densities and thresholds, transportation systems, and as a basis for the preparation of the implementation zoning plans...*'.

33 Art. 5 of Law No. 3194: '*(...) drawn in accordance with the principles of the master development plan on the certified state-of-the-art maps, with the cadastral status, if any, processed, and showing in detail the building blocks of various regions, their density and layout, roads, and the implementation stages and other information that will be the basis of the zoning implementation programmes required for implementation ...*'.

34 Yayla (n 13) 14; Hatice Kansu, '*Türk Hukukunda İmar Planlarının Düzenleyici İşlem Niteliği*' (DPhill thesis, University of Istanbul Institute of Social Sciences 1994) 20.

35 M. Ayhan Tekinsoy, '*İmar Planlarının Hukuksal Niteliği, İmar Planı İptalinin Bu Plana Dayanılarak Verilmiş Ruhsatlar Üzerindeki Etkisi*' (2008) (2) Ankara Barosu Dergisi 46, 48.

36 Cenk Şahin, '*Danıştay Kararlarına Göre İmar Planının Yargı Yerince İptal Edilmesinin Hukuki Durumuna Etkisi Eleştirel Bir Bakış*' (2018) 76 (2) İstanbul Hukuk Mecmuası 757, 764. There are also decisions of judgement the in a similar context. File nr. 2010/887, Decision nr. 2013/3816 (TCS Administrative Appeals Board, 11 November 2013); File nr. 2010/887, Decision nr. 2013/3816 (TCS Administrative Appeals Board, 11 November 2013); File nr. 2008/39, Decision nr. 2008/134 (Turkish Constitutional Court ('*TCC*'), 22 July 2008); File nr. 2018/9388, Decision 2020/2880 (TCS 6th Chamber, 2 March 2020); File nr. 2018/3991, Decision nr. 2020/3807 (TCS 6th Chamber, 12 March 2020).

out within the framework of the implementation zoning plan on coastlines or the determination of the type of construction in special protection zones.[37] Here, just as the will of the administrative authority is at the forefront in determining the scale and details in terms of the preparation of zoning plans, the use of these tools will also be the product of the will of the administrative authority.[38] At this point, the autonomous use of artificial intelligence tools and the preparation of zoning plans in this way can be considered. This problem will be addressed in the remainder of the study.

## B. AI Integration in the Preparation of Zoning Plans

Since zoning plans are '*prepared on the basis of research and data on the economic, demographic, social, cultural, historical and physical characteristics of the city, determining urban settlement and development trends by creating alternative solutions, land use, protection, restriction decisions, organisation and implementation principles*', they are the joint responsibility of engineers, urban planners and administrative authorities.[39] Considering the speed of change in the society and the current complexity of zoning plans, it is inevitable for the administration to use technological tools while preparing zoning plans. It will be necessary to determine the most appropriate AI tool by evaluating the current conditions of the day in the preparation of zoning plans.[40] The main reason for this need is to ensure the principles of '*adaptation*'[41], '*continuity*' and '*equality*'[42], which are essential in the provision of public services.

In the preparation of zoning plans, local administrations will need to transfer less financial resources, while these plans will need to be presented in the fastest and most effective way.[43] In fact, the use of AI tools; since it can process and analyse different types of data at the same time, it will be able to prepare faster and adaptable plans

37 Elif Orta, *İmar Hukukunda Plan Hiyerarşisi ve Planların Çatışması* (Legal Yayıncılık 2005) 76-7.

38 Jean-Bernard Auby, '*Administrative Law Facing Digital Challenges*' (2020) 1 (1) European Review of Digital Administration & Law 7, 8; Xiaoyu Liu, '*Legal Regulation of Automatic Administration in the Era of Artificial Intelligence*' (2022) 2 Innovation Economics and Management Research (IEMR) 238, 239; Filip Geburczyk, '*Automated Administrative Decision-Making under the Influence of the GDPR-Early Reflections and Upcoming Challenges*' (2021) 41 Computer Law&Security Review 1, 12 <https://doi.org/10.1016/j.clsr.2021.105538> accessed 11 February 2025; Camilla Ramotti, '*Participation in Algorithmic Administrative Decision-Making*' (2024) (3) BioLaw Journal 455, 455.

39 İlhan Tekeli, '*Mülkiyet Kurumu, Kamu Yararı Kavramı ve İmar Planları Üzerine*' (1988) 88 (2) Planlama Dergisi 6, 6.

40 İl Han Özay, *Günışığında Yönetim* (Filiz Kitabevi 2004) 237.

41 Although the determination of public services is within the discretion of the legislative organ, it is within the discretionary power of the administration to adapt the content of the existing public service to the current conditions. Ahmet Bağrıaçık, '*Kamu Hizmetinin Uyarlama İlkesi Üzerine Bir Değerlendirme*' (2018) 26 (3) Selçuk Üniversitesi Hukuk Fakültesi Dergisi 155, 162.

42 Onur Karahanoğulları, *Kamu Hizmeti* (Turhan Yayınevi 2015) 188ff.

43 Tuğrul Akçura, *İmar Kurumu Konusunda Gözlemler* (Orta Doğu Teknik Üniversitesi Yayınları 1982) 37. For this reason, in addition to planning at the commune level, planning is also organised at the central administrative level. Çetiner (n 22) 18-19. However, these studies may also lead to incompatibility in terms of the compatibility of different plans or differences in will. See also; Oğuz Sancakdar, *Belediyenin İmar Planını Yapması-Değiştirmesi ve İptal Davası* (Yetkin Yayıncılık 1996) 81-2.

according to the needs. The method, also known as '*game theory*'[44] will simulate the most appropriate plan and its alternatives. It will be possible to measure the post-implementation impacts of different zoning plan possibilities before the plans are prepared, and thus it will be easier to identify the prioritised needs. The identification of prioritised needs will ensure efficient use of resources and prevent unnecessary financial resource transfers.[45] As environmental impact assessments can be carried out before the implementation of land use plans, cities that are better suited to sustainable environmental conditions can be built.[46] The risk of error will be reduced as human error will be eliminated in the data analysis process of AI tools and in the preparation of zoning plans after this process.

In the preparation of zoning plans, ensuring the participation of citizens by local administrations,[47] informing the people who will be affected by the zoning plan to be made and ensuring '*transparency*' in the preparation of zoning plans will become more possible with AI tools. Taking all these advantages into consideration, the use of AI tools by administrative authorities is a necessity today rather than an option.

### C. AI Integration in the Implementation Phase of Zoning Plans

The dimension of compliance with the technical criteria set out in the plans and the continuation of construction activities in this direction with various permits (building construction and occupation etc.) brings the level of applicability of the plans onto the agenda in the plan implementation phase after the '*preparation*' and '*approval*' of the plans in the context of planning activity.[48] In this respect, the integration of AI tools also has effects and consequences in the implementation phase of the plans.

44 Selim Taşkaya, '*Creating City Based Zoning Plans with Game Theory Approach, Example of 1000 Plans*' (2023) 35 (3) International Journal of Advances in Engineering and Pure Sciences 297, 304; Steven Tadels, *Game Theory (An Introduction)* (Princeton University Press 2013) 101; Martin J. Osborn and Ariel Rubinstein, *A Course in Game Theory* (The MIT Press 1994) 24; Robert Gibbons, *Game Theory for Applied Economists* (Princeton University Press 1992) 29.

45 Murat Erol, '*Yapay Zekanın Kamu Hizmetinin Sunumuna Etkileri*' (2021) 148 (66) Adalet Dergisi 293, 300.

46 Environmental Law No. 2872, Art. 2/4: '*(...) The process of improvement, protection and development in all areas (social, economic, physical, etc.) of all environmental values that constitute the environment of both present and future generations, without jeopardising the existence and quality of the resources that future generations will need...*'.

47 For the view regarding the inclusion of citizens in the process because of the digital transformation of local administrations as an example of e-municipalism, see also. Yakup Karaca and Namık Kemal Öztürk, '*Yeni Nesil Belediyecilik: Dijital Belediye Uygulamaları*' (2019) 2 (3) Uluslararası Yönetim Akademisi Dergisi 528, 534.

48 Tolga Ünlü, '*Planlamada Denetim Mekanizmalarının Yeniden Tanımlanması Gerekliliği Üzerine*' (2003) (3) Planlama Dergisi 41, 42.

In particular, it will be possible to determine the places to be expropriated[49] and reserved as public service areas, widening of roads, creation of new service goods,[50] the determination of the situations in which land division, subdivision and unification[51] should take place and DRS deductions should be made, and the produce different scenarios can be produced in this regard. The question of how to create healthy and organised cities and feasible plans that can meet all the needs of the inhabitants of these cities[52] can be solved through the use of AI tools.

According to Arslan, '*the phenomenon of urbanisation determines the changes in the urban structure according to the speed and form of the change in the relations of production*'.[53] Indeed, although the general appearance of industrialisation and urbanisation in Turkey is in the form of population agglomeration, the class structure and income groups of the cities are changing rapidly.[54] Since it is possible to evaluate the population structure despite changing situations and to analyse statistical data with AI tools, compliance with the changing situation can be ensured more easily. In order to obtain a plan with these characteristics requires, first of all, multidimensional and disciplined studies must be carried out before and during the planning process. In this respect, the ability of AI tools to collect and process more data will contribute to the easier progress of the process. In addition, the use of AI tools can be a good alternative for preventing problems arising from the risk of natural disasters.[55] In

49 Art. 13/2 of Law No. 3194: '*The payment of the property tax shall be suspended until the areas included in the land development plans are expropriated. When the expropriation is realized, the property tax to be accrued between the date of suspension and the date of expropriation shall be paid by the administration which executed the expropriation. Where the places stated in the first paragraph are allocated to a purpose which does not require expropriation by a change in the plan before expropriation is realized, the property owner shall pay the property tax for the time passed since the date of suspension*'. <https://www.lawsturkey.com/law/law-on-land-development-planning-and-control-3194> accessed 11 February 2025.

50 The success of the implementation of zoning plans depends to a great extent on the expropriation of privately owned urban land. Especially in areas allocated for public service, the construction of service goods will be possible by transferring the privately owned land to public ownership. For this reason, expropriation is considered a suitable legal instrument for plan implementation. However, the realisation of expropriation is difficult due to inadequate and in some cases incomplete legal regulations. Ümit Doğanay, 'Metropoliten Planların Uygulanmasında Yasal ve Parasal Sorunlar' in Mehmet Çubuk (ed) *Türkiye'de Metropoliten Alan Planlama Deneyim ve Sorunları Kolokyumu* (Mimar Sinan Üniversitesi Sosyal Bilimler Enstitüsü Yayını 1985) 337.

51 Art. 16 of Law No. 3194: '*Municipal executive committees or provincial administrative committees shall approve the compliance with this Law and regulations of the subdivision or amalgamation ex officio or upon request, establishment or deletion of easement on immovable properties within municipal boundaries and adjacent areas. The approval procedure shall be completed within 30 days starting from the receipt of the request by municipalities or governorships, and notified to the land registry office for registration or deletion. The land registry office must complete the registry procedure within one month. Where owners of the immovable properties placed under joint ownership pursuant to the provisions of this Law fail to reach an agreement among themselves within six months from the date of notification by the relevant administration, or if no petitions to eliminate joint ownership are filed with the court, then the relevant administration may initiate a legal action to eliminate joint ownership as if it were an owner. The elimination of joint ownership and partition of the land by consent of the parties or by court ruling shall be subject to the foregoing provisions*'. <https://www.lawsturkey.com/law/law-on-land-development-planning-and-control-3194> accessed 11 February 2025.

52 Mehmet Gürler, *İmar Planları ve Uygulama Tekniği* (TMMOB Harita ve Kadastro Mühendisleri Odası Yayınları 1983) 57.

53 Rıfkı Arslan, 'Metropoliten Alanlarda Uygulama ve Finansman Güçlükleri' in Mehmet Çubuk (ed) *Türkiye'de Metropoliten Alan Planlama Deneyim ve Sorunları Kolokyumu* (Mimar Sinan Üniversitesi Sosyal Bilimler Enstitüsü Yayını 1985) 351.

54 Arslan (n 53) 351.

55 In particular, risk estimation and predictability based on the smart city concept can minimise disaster-related damages in urban areas. Acting on the said risk estimation during the implementation of zoning plans will give basic answers to the questions of the depth, height and building material of the constructions in that place. Federico Cugurullo and Ying Xu,

this way, it may be possible to ensure that settlements in areas that will be exposed to disasters caused by earthquakes, floods and fires are made in consideration of this situation or that building bans are applied.[56]

## II. Scope and Legal Aspects of the AI Tools Used

It is possible to classify the AI tools that can be used in the process of zoning planning into AI tools to be used in the process of preparation of zoning plans and AI tools to be used in the process of implementation of zoning plans. However, the AI tools used in the preparation and implementation of zoning plans also show transitivity within themselves. If this transitivity is divided on the basis of subject: ***(i)*** *Data collection with satellites and geographic information systems*, ***(ii)*** *Preparation of simulations on urban planning and implementation*, ***(iii)*** *Application with blockchain in zoning parcels*.

### A. Data Collection and Analysis with the Satellite Imaging System

In the preparation of zoning plans, the main source of the administration is the information on the current situation of the relevant region and the future projections based on this information. It seems impossible for the relevant administration to obtain and process all this information accurately in a short period of time, given the problems of convening boards, the lack of infrastructure and personnel, and the expanding cities.[57] For this very reason, simulation tools that can perform data storage and processing at the same time accelerate the preparation process of zoning plans. The Tensorflow[58] and Earth Engine[59] programmes especially help urban planners to determine the parcel conditions, to determine the density of the city and to identify the areas where the density is progressing.[60]

To reveal the physical conditions of the scattered parcels and to create zoning areas in line with the needs of the region and to use the relevant AI tools in the

*'When AIs Become Oracles: Generative Artificial Intelligence, Anticipatory Urban Governance, and the Future of Cities*' (2024) Policy and Society 1, 13; Sayed Ahmad Eslaminezhad, Mobin Eftekhari and Mohammad Akbari, '*GIS-Based Flood Risk Zoning Based On Data-Driven Models*' (2020) 6 (4) Journal of Hydraulic Structrues 75, 75; Maryam Mokhtari, Sahar Abedian and Sayed Ahmad Almasi, '*Rock fall Susceptibility Mapping Using Artificial Neural Network, Frequency Ratio, and Logistic Regression: A Case Study in Central Iran, Taft County*' (2020) 4 (1) AUT Journal of Civil Engineering 63, 63.

56 Erol Ünal, *İmar Planlama Uygulama* (Bayındırlık ve İskan Bakanlığı 1996) 63ff.

57 Ahmet Menderes, '*İmar Plânı Konusuna Genel Bakış*' (1966) 22 (246) İller ve Belediyeler Dergisi 148, 149.

58 Yao Yao et al, '*Sensing Urban Land-Use Patterns by Integrating Google Tensorflow and Scene-Classification Models*' <https://www.alphaxiv.org/abs/1708.01580> accessed 4 February 2025.

59 Zelal Kaya and Adalet Dervişoğlu, *'Determination of Urban Areas Using Google Earth Engine and Spectral Indices; Esenyurt Case Study*' (2023) 10 (1) International Journal of Environment and Geoinformatics 1, 2.

60 There is also. Supattra Puttinaovarat and Paramate Horkaew, '*A Geospatial Platform for Crowdsourcing Green Space Area Management Using GIS and Deep Learning Classification*' (2022) 11 (3) ISPRS International Journal of Geo-Information 1, 2 <https://www.mdpi.com/2220-9964/11/3/208> accessed 12 February 2025.

redistribution and allocation of parcels[61] will facilitate the provision of urban justice.[62] The determination of the areas covered or not covered by the plot and land arrangements (PLA) and DRS applications[63] in the broad sense, which we encounter in the arrangement of scattered parcels and making them in accordance with the zoning plan, or the determination and definition of public property, can also be easily determined with AI tools.

Processing the information obtained through navigation devices[64] and satellite imagery that we use in our daily lives through deeplearning[65] will enable the planning activities of the administration to proceed more effectively. It can be used not only for urban density[66] or traffic optimisation[67] but also for planning energy consumption to create green cities.[68] Determination of areas under disaster risk with the use of satellite imagery tools[69] and AI tools that help to identify risky structures and structures contrary to the licence will also help to reduce the damage caused by disasters.[70]

## B. Geographical Information System (GIS) and AI Extensions in Zoning Planning

GIS, which continuously records information such as population density, energy demand, determination of public service requirements and traffic density,[71] is also an

61 Xiaoping Liu et al, '*Classifying Urban Land Use By İntegrating Remote Sensing And Social Media Data*' (2017) 31 (8) International Journal of Geographical Information Science 1675, 1679.

62 The notion of '*urban justice*' will appear as one of the basic principles to be followed in making and implementing zoning plans. Aydın Gülan, '*Türk İmar Hukuku'nda 'Hamur Kuralı' Uygulaması, 3194 Sayılı İmar Kanunu'nun 18. Madde Uygulamasına İlişkin Teorik Bir Yaklaşım*' (Associate Professor Thesis 2000) 38-9.

63 On the method of PLA and the determination of the area by the administration see also. Tahir Muratoğlu, *Teşkilat, Planlama ve Uygulama Boyutuyla İmar Hukuku* (2nd edition, Seçkin Yayıncılık 2021) 244ff; Celâl Karavelioğlu and E. Cemil Karavelioğlu, *İmar Kanunu 18. Madde Uygulaması* (5th edition, Karavelioğlu Hukuk Yayınevi 2010) 35ff.

64 Mark Bilandzic, Marcus Foth and Alexander De Luca, '*CityFlocks: Designing Social Navigation for Urban Mobile Information Systems*' (2008) Association for Computing Machinery 174, 178.

65 Jun Zhang et al, '*Extraction of Urban Built-Up Area Based on Deep Learning and Multi-Sources Data Fusion-The Application of an Emerging Technology in Urban Planning*' (2022) 11 (8) *Land* 1212, 1213 <https://doi.org/10.3390/land11081212> accessed 11 March 2025.

66 Pengjun Wu et al, '*Deep Learning Solutions for Smart City Challenges in Urban Development*' (2024) 14 Sci Rep 1, 2 <https://doi.org/10.1038/s41598-024-55928-3> accessed 5 January 2025.

67 Muhammad Aqib et al, '*Rapid Transit Systems: Smarter Urban Planning Using Big Data, In-Memory Computing, Deep Learning, and GPUs*' (2019) 11 (10) Sustainability 2736.

68 Guangtao Fu et al, '*The Role of Deep Learning in Urban Water Management: A Critical Review*' (2022) 223 Water Research 1, 3.

69 Munish Bhatia, Tariq Ahamed Ahanger and Ankush Manocha, '*Artificial Intelligence Based Real Time Earthquake Prediction*' (2023) 120 Engineering Applications of Artificial Intelligence 1, 4.

70 Saman Ghaffarian, Firouzeh Rosa Taghikhah and Holger R. Maier, '*Explainable Artificial Intelligence in Disaster Risk Management: Achievements and Prospective Futures*' (2023) 98 International Journal of Disaster Risk Reduction 1, 12 <https://doi.org/10.1016/j.ijdrr.2023.104123> accessed 11 March 2025.

71 Rima Sultani, Ahmed Soliman and Khalid Al-Hagla, '*The Use of Geographic Information System (GIS) Based Spatial Decision Support System (SDSS) in Developing the Urban Planning Process*' (2009) 20 APJ, Architecture & Planning Journal 97, 113; Avishai Ceder, *Public Transit Planning And Operation: Modeling, Practice And Behavior* (2nd edition, CRC Press 2016); Thomas Cornillie, '*Public Transportation Systems: Principles of System Design, Operations Planning and Real-Time Control*' (2022) 88 (1) Journal of the American Planning Association 145, 146; Pawel Gora, '*Designing Urban Areas Using Traffic Simulations, Artificial Intelligence and Acquiring Feedback From Stakeholders*' (2019) 41 Transportation Research Procedia 532, 533.

AI tool for modelling the data. GIS, which was first used in Canada[72] and used only for land surveying in its first form, has transformed with developing technologies and has taken its present form. In North America and Europe in particular, GIS-derived satellite data[73] play a useful role in the ongoing development of the respective regions, neighbouring settlements and infrastructure facilities.[74]

GIS, which collects data to determine current land use, necessary and potential service management,[75] environmental impact and ecosystem assessment, transport and infrastructure, and property value,[76] is also used in Turkey within the Ministry of Environment, Urbanisation and Climate Change.[77] Today, the National GIS[78] is used as an administrative support in the collection and processing of geographic data[79] within the Ministry under the General Directorate of GIS of Turkey and in disaster management and urban planning with the development of technology. The establishment of GIS in Turkey was provided by the Action Plan published by the abolished State Planning Organisation in the context of the Information Society Strategy.[80] GIS, which regulates the mapping, infrastructure and superstructure, and zoning plan activities of local governments, provides the coordination of urban information systems.

### C. Use of Simulation Tools in Urban Planning

In the context of the preparation of zoning plans, the administration tries to predict the future needs and development of the city.[81] Many factors are considered,

72 Mahnaz Gümrükçüoğlu, '*Coğrafi Bilgi Sistemleri: Anlamı, Yararları, Sorunları ve Geleceği*' (2003) 7 (1) SAU Fen Bilimleri Enstitüsü Dergisi 67, 68.

73 Paul A. Longley, '*Geographical Information Systems: Will Developments in Urban Remotesensing and GIS Lead to 'Better' Urban Geography?*' (2002) 26 (2) Progress in Human Geography 231, 233.

74 Sonila Xhafa and Albana Kosovrasti, '*Geographic Information Systems (GIS) in Urban Planning*' (2015) 1 (1) European Journal of Interdiciplinary Studies 74, 80.

75 Eman Alshari, Khalil Al-Wagih and Ebrahim Mohammed Senan, '*Artificial Intelligence for Analyzing Decadal Land Changes in Sana'a- Yemen From 1980 to 2020 Using Remote Sensing & GIS*' (2024) 1 (2) Al-Razi University Journal of Computer Science and Technology 1, 2.

76 Peter Burrough and Rachael Mcdonnell, *Principles of Geographical Information Systems* (Oxford University Press 1998) 28.

77 Vida Maliene, Vytautas Grigonis, Vytautas Palevicius and Sam Griffiths, '*Geographic İnformation System: Old Principles With New Capabilities*' (2011) 16 (1) Urban Design International 1, 5.

78 Presidential Decree No. 47 (OJ.07.11.2019/30941).

79 Art. 3 of Presidential Decree No. 49: '*(…) d) Geographic information system: The hardware, software, human resources, standards and methods required for the production, supply, storage, processing, management, analysis, sharing, presentation and keeping up-to-date of all kinds of geographic data, e) Geographic data: All kinds of data containing location information, f) Geographic data service: Work and processes aimed at sharing geographic data and data information in accordance with standards, g) Geographic data theme: A group of geographic data prepared in accordance with national or international standards on a specific subject…*'.

80 Tapu ve Kadastro Genel Müdürlüğü, '*T.C. Başbakanlık DPT Bilgi Toplumu Stratejisi Eylem Planı (2006-2010) Kamu Yönetiminde Modernizasyon 75 Numaralı Eylem 'Coğrafi Bilgi Sistemi Altyapısı Kurulumu' (Kym-75 Cbs-A Kurulumu) Fizibilite Etüdü Hizmet Alımı Fizibilite Etüdü Raporu ve Ekleri*' (2010) <https://webdosya.csb.gov.tr/db/cbs/dokumanlar/2024-2030--8230-93941-20250221102114.pdf> accessed 12 March 2025; Hande Bilir and Emin Bank, '*Türkiye Ulusal Coğrafi Bilgi Sistemi Altyapısına Servis Edilecek Mükerrer Üretimi Söz Konusu Olan Mekânsal Verilere Yönelik İhtiyaçların Belirlenmesi ve Önceliklendirilmesi*' (2011) 3 Jeodezi ve Jeoinformasyon Dergisi 104, 104.

81 Minjun Kim et al, '*Application of Explainable Artificial Intelligence (XAI) in Urban Growth Modeling: A Case Study of Seoul Metropolitan Area, Korea*' (2023) 12 (1) Land 1, 1.

such as population growth and the associated need for infrastructure and social facilities. For this reason, it will be possible to complete the forecasting activity in a data-oriented and need-based manner by preparing the most optimal zoning plan. Considering the consequences of more than one plan, the administration will have to implement the plan that achieves the most efficient result with the least interference in the rights of the persons concerned. For this reason, AI tools that simulate the effects of the data obtained from the relevant area on different development plans will help the administration to transfer its resources in the most accurate way.

Although simulation tools such as UrbanSim were initially used only for determining the transport infrastructure, their scope has expanded today.[82] Simulation tools that present the possibilities of development plans[83] that can be applied to the relevant region in 3D considering the data entered into it will help the preparation of realistic and sustainable development plans.

## D. Execution of Registration-Related Works with Blockchain as a Result of Implementation of Zoning Plans

Immovable property, which is mostly the subject of zoning plans, is a right that must be registered. According to the Turkish Civil Code, the registration of the property right provides a legal guarantee for the relevant right. In the context of zoning law, registration and cancellation of the previous rights are obligatory in the formalisation of the existing immovable property rights as a result of acts such as subdivision, unification and settlement of disputes, especially as a result of PLA.[84]

This information, which is open to be learnt by the relevant person in accordance with the principle of reliance on the title deed, can also be learnt online through E-government[85] and RECIS[86] in accordance with electronic governance (e-governance). However, there are still erroneous records in the title deed information registered by the relevant public officials, and these erroneous records are the responsibility of the administration. The blockchain application will ensure that these records are kept and

82 Sirivilai Teerarojanarat, David Fairbairn and Sanphet Chunithipaisan, '*Urban Growth Simulation with Urbanism*' (12-14 September 2004) Proceedings of the FOSS/GRASS Users Conference-Bangkok, Thailand 1, 3.

83 Xiang Yan, Xinyu Liu, Xilei Zhao, '*Using Machine Learning for Direct Demand Modeling of Ridesourcing Services in Chicago*' (2020) 83 Journal of Transport Geography 1, 4.

84 Kalabalık (n 23) 381. Also see; H. Burak Gemalmaz, *Mülkiyet Hakkı*, Anayasa Mahkemesine Bireysel Başvuru El Kitapları Serisi-6, (Avrupa Konseyi 2018) 2-5.

85 Yılmaz Üstüner and Nilay Yavuz, '*Turkey's Public Administration Today: An Overwiew and Appraisal*' (2018) 41 (10) International Journal of Public Administration 820, 829.

86 In Turkish TAKBIS. Veysel Başpınar, '*Elektronik Tapu Sicili Düzenlenirken, Tapu Sicilinin Aleniyeti ve Diğer Alanlarla İlgili Alınması Gereken Tedbirler*' (2008) 57 (3) Ankara Üniversitesi Hukuk Fakültesi Dergisi 97, 99; İpek Çevik, '*Alman Hukukunda Elektronik Tapu Sicilinin Gelişimi ve Oluşumu*' (2018) 24 (2) Marmara Üniversitesi Hukuk Fakültesi Hukuk Araştırmaları Dergisi 1086, 1089; Hülya Meral, Md Moynul Ahsan, '*Türkiye'de Tapu Sicilininde Hisse Hataları*' (2021) 3 (2) Türkiye Arazi Yönetimi Dergisi 66, 67.

audited more accurately and will speed up the land subdivision and division acts that are carried out with the consent of the property owners.

Unlike traditional land registries, the records added to the blockchain system, which has no centre, are encrypted and unchangeable. Therefore, the blockchain is more secure,[87] transparent and faster.[88] In fact, in the context of different countries,[89] the registration of land registry records on the blockchain also appears in the form of pilot applications.

## III. Providing the Principles to be Followed in the Preparation Process of Zoning Plans by Using Artificial Intelligence Tools

The phases to be followed in the preparation process of zoning plans can be expressed as the preparation of a baseline map, obtaining reports and opinions from relevant institutions, and threshold analysis.[90] In addition to the construction of the baseline map, the use of AI tools to determine the basic zoning plan bases and to prevent overlap, analysis and synthesis will also ensure compliance with the principle of gradual unity of plans.[91] The preparation can be done in stages according to the plan scenarios to be created, since there is no obligation to make all of the zoning plans at once. Based on the definitions made for areas of use in Art. 5 of the Regulation on the Preparation of Spatial Plans[92], the legal status and boundaries of areas such as official institution area, industrial area, cultural facility area, and industrial zone can be taken into consideration in more detail and conflicts will be minimised. This situation also makes it possible to identify the factual reasons for any changes to be made to the zoning plan.

Undoubtedly, with regard to specific plans such as the spatial strategy plan or environmental layout plan, thanks to the fact that AI tools can process more data in a shorter time, the objectives set within the framework of '*development plan*', '*regional plan*', '*regional development strategies*' and '*other strategy documents*', facts such as the texture and silhouette of the environment will be taken into consideration.[93] Due

87 Russell Paulet, Md. Golam Kaosar, Xun Yi and Elisa Bertino, '*Privacy-Preserving and Content-Protecting Location Based Queries*' (2014) 26 (5) IEEE Transactions on *Knowledge and Data Engineering* 1200, 1204.

88 Krishnapriya S and Greeshma Sarath, '*Securing Land Registration using Blockchain*' (2020) 171 Procedia Computer Science 1708, 1715.

89 Alexandru Oprunenco and Chami Akmeemana, '*Using Blockchain to Make Land Registry More Reliable in India*' (UNDP, 1 May 2018) <https://www.undp.org/blog/using-blockchain-make-land-registry-more-reliable-india> accessed 12 March 2025; Viljar Peep, '*Land Administration in Estonia: A Synthesis of Old Institutions and Modern Technology*' (Land Law & Administration, 21 March 2024) <https://www.bk-agarwal.com/post/land-administration-in-estonia-a-synthesis-of-old-institutions-and-modern-technology> accessed 12 March 2025; Anetta Proskurovska and Sabine Dörry, '*Is a Blockchain-based Conveyance System the Next Step in the Financialisation of Housing? The case of Sweden*' (2018) 17 SSRN Liser Electronic Journal 1, 7.

90 Kalabalık (n 23) 95ff.

91 Hasan Nuri Yaşar, *İmar Hukuku* (Filiz Kitabevi 2008) 31-2.

92 OJ.14.06.2014/9030.

93 Art. 6/5 of the Spatial Plans Production Regulation: '*The objectives set out in the development plan, regional plans,*

to the ability of AI tools to better determine the needs in urban areas in a more optimal way (=*population, intensity of use of goods/services*), zoning plans are prevented from being limited to issues such as enlargement or reduction of certain plans and the principle of generality will be ensured.[94]

The principle of protection of the environment and natural and cultural values is ensured by thematic planning according to the location of the natural and cultural historical values.[95] In this respect, within the framework of the accessory theory[96] of the situation in question, the zoning plan drawn up according to the legal status of the area and/or property also changes thematically. In this sense, the factual and legal situations determined in urban spaces with the help of AI tools will facilitate the access and participation of disadvantaged groups such as the disabled and the elderly in cultural and social infrastructure areas in the context of the principle of equality.[97] The same applies to areas that can be used in the event of disasters and emergencies, road widening to reduce vehicle traffic, or the creation of car parks to meet parking needs. In this way, public benefit is enshrined as a fundamental value.[98]

The use of AI tools, which will contribute to the creation of a '*data pool*' for both updating zoning plans and obtaining the opinions of relevant public institutions and organisations (=*principle of cooperation*)[99], will also provide '*predictability*' in issues such as '*transport system, water, risk, infrastructure, economy and specialisation zones, areas with limited development*'.[100] In this way, risk-mitigating measures will be taken and individuals will act in accordance with the principles of '*legal certainty and security*' in terms of freedom of settlement and the use of property right. Finally, in accordance with Art. 19 of the Regulation on the Preparation of Spatial Plans, it will be possible to ensure that land use decisions on zoning plans (such as preventing uses that may cause environmental problems, conducting micro zoning studies, identifying energy lines that may affect human health, stream protection areas and areas under the risk of disaster, compliance with special rules in the use of agricultural lands), the definition of the coastal edge line and the use of schematic and graphic

*regional development strategies and other strategy documents shall be taken into account when preparing spatial strategy plans and environmental layout plans*'.

94 Çolak (n 11) 93.

95 A. Kürşat Ersöz, 'Koruma Amaçlı İmar Planlarının Hukuki Niteliği ve Yargısal Denetimi' in Ümit Süleyman Üstün et al (eds) *II. Selçuk Hukuk Kongresi Tam Metin Kitabı* (On İki Levha Yayıncılık 2022) 465. Also see; Zehreddin Aslan, '*Doğal Çevrenin Korunmasına Yönelik Alınan Önlemler ve Yasaklar Karşısında Danıştay'ın Tutumu*', (1995) (11-12-13) İstanbul Üniversitesi Siyasal Bilgiler Fakültesi Dergisi, 91, 91.

96 Benjamin Blaquière, *Les 100 mots du droit administratif* (PUF 2024) 11.

97 Art. 10/3 of the Constitution: '*Measures to be taken for children, the elderly, disabled people, widows and orphans of martyrs as well as for the invalid and veterans shall not be considered as violation of the principle of equality*'.

98 File nr. 2020/6414, Decision nr. 2024/5059 (TCS, 30 September 2024); File nr. 2020/4275, Decision nr. 2024/1925 (TCS, 20 March 2024) Lexpera, 01.03.2025. For the term '*public interest*' and similarly used concepts, see; Cemil Kaya, *Kararlarından Hareketle Kamu Yararı Kavramına Danıştay'ın Bakışı* (On İki Levha Yayıncılık 2011) 52ff.

99 Çolak (n 11) 103.

100 File nr. 2017/7727, Decision nr. 2021/1296 (TCS, 4 February 2021); File nr. 2018/6901, Decision nr. 2022/1288 (TCS, 9 February 2022) Lexpera, 01.03.2025.

grammar are compatible with the documents contained in the plan and its annexes.[101] In fact, the issue of technical research, which is currently has to be carried out by plan authors, can be done by minimising the use of personnel, cost and margin of error with the use of AI tools. This situation, especially when the relevant infrastructure is in place, will also reduce the cost concerns of local administrations in relation to the preparation of zoning plans.

## IV. Providing the Principles to be Followed in the Implementation Process of Zoning Plans with the Use of Artificial Intelligence Tools

In terms of administrative law, the implementation of a regulatory act as a basis for individual acts in such a way that disputes do not arise afterwards will be evaluated by the appropriateness of the data sets used in the preparation phase of that administrative act, as well as by minimising the negative impact on the fundamental rights and freedoms of individuals during the execution phase. In this context, utilisation of AI tools during the implementation phase of zoning plans will reduce the number of requests for revisions, additions and amendments to these plans (*=it will play a positive role in terms of the principle of continuity in the context of the principle of administrative stability*[102]). In order to minimise the usage problems arising from zoning activities during the implementation phase and to comply with the principle of prohibition of misuse, determination of the ratio of residential use in the mixed areas of '*Housing+Commerce*', '*Commerce+Residential+Tourism*', '*Tourism+Commerce*' will reduce the practices involving negative interference with fundamental rights and freedoms during the implementation process.

According to Art. 13 of Law No. 3194, the legal instruments used in the implementation of zoning plans can be counted as expropriation, subdivision and unification, and PLA activities, including the deduction of the DRS.[103] Since all of these implementation tools involve the use of public power, they may be unlawful depending on the ability of the zoning plans to be implemented. At this point, with the use of AI tools, it can be accurately determined which implementation tool will be prioritised. For example, by accurately identifying public goods, the transfer of immovable property or the allocation of certain goods to the relevant administrative authority as stipulated in Law No. 3194 may be realised (Art. 11/1)[104], or areas that

101 Art. 19 of the Spatial Plans Production Regulation: '*(...) g) Establishing land use decisions by determining preventive strategies and policies for resources that cause environmental problems...*'.

102 Çolak (n 11) 95.

103 Art. 13 of Law No. 3194: '(…) *Where property owners transfer the portions beyond the share of common use reserve from redivision as prescribed in this Law in the land and landlots at locations indicated in the first paragraph on the approved land development plans to the relevant administrations free of charge, such transfer shall not be subject to property transfer taxes*'.

104 Art. 11/1 of Law No. 3194: '*The land and landlots owned by the Treasury and special administrations, except the immovable property owned by the General Directorate of Foundations and military forbidden zones, security zones and places of operational and defence purposes owned by the Turkish Armed Forces directly related to national security, which*

have been previously deducted/not deducted from the DRS may be identified. This will undoubtedly reduce public expenditures (*=the principles of fiscal balance and appropriation will be observed*)[105] and may also remove the financial and legal liability of the relevant public official through the use of AI tools before the administrative authority performs expropriation in the context of development programmes.

Finally, because of the implementation of the zoning plans, individual acts such as building licences and occupancy permits may also be established.[106] The Planned Areas Zoning Regulation[107] should also be considered in terms of the legality of these acts. In this framework, issues such as determination and application of the ratio of floor and floor area, building height, setback, minimum size of the parcels, whether the parcel has a road frontage, whether there are parcels that cannot be built as a result of the application of subdivision and unification, whether earthquake joint gaps are left, and whether non-residential functions can be used in residential areas can be determined by using AI tools. In addition to this, in order to ensure the optimal use of the fragmented parcels created by expropriation, it will be possible to ensure that the parcel is established in such a way that the parcel is suitable for building, and that the parcels that will become buildable as a result of the merging of the parcels will be subject to the unification process.[108] It should be noted that since all of these applications aim to create certain scenarios during the implementation phase of zoning plans and to take into account the legal disputes that may arise, they contribute to the creation of the best scenario depending on the AI tools and the data sets entered.

## V. The Effect of the Use of Artificial Intelligence Tools by the Administration on the Legal Liability of the Administration

The preparation and implementation of zoning plans may affect the interests of the persons concerned, and therefore the contractual and extra-contractual liability of the administration will be in question.[109] In addition, the use of AI tools makes the process

*fall in such places earmarked for public services as public squares, roads, parks, green areas, parking lots, public transport stations and terminals shall be transferred abandoned free of charge to municipalities within municipal boundaries and adjacent areas or to special provincial administrations outside municipal boundaries and adjacent areas upon a proposal from the municipality or governorship and the approval by the Ministry of Finance and Customs and the entry at the land register shall be deleted. However, if there are buildings on such places, the present value to be appraised only for the buildings except for the landlot shall be paid. The price and form of payment shall be agreed by the parties*'.

105 Çolak (n 11) 334.

106 Taner Ayanoğlu, Yapı Hukukunun Genel Esasları (Vedat Kitapçılık 2014) 157.

107 OJ.03.07.2017/30113.

108 Halil Kalabalık, '*İmar Hukukunda İfraz ve Tevhid Yöntemi ve Karşılaşılan Sorunlar-II*' (2008) (30) Yerel Siyaset Dergisi 71, 72.

109 The main source of the contractual responsibility of the administration is that the responsibility of the administration is a primary responsibility regardless of who provides the services in the duties and powers of the administration. Özay (n 40) 250. As a matter of fact, the fact that the administration bears an objective responsibility reveals the responsibility of the administration in the form of defective and strict responsibility. Ragıp Sarıca, '*Hizmet Kusuru ve Karakterleri'* (1949) 15 (4) İstanbul Üniversitesi Hukuk Fakültesi Mecmuası 858, 860. One of the constitutional duties imposed on the

of preparing zoning plans more efficient,[110] ensures that the process of preparing development plans is more in line with more democratic administrative principles[111] and reduces human error;[112] the uncertainties regarding AI data processing and decision-making will not change the fact that AI tools are not infallible and may make wrong decisions.[113] For this reason, the use of AI tools in the preparation of the zoning plan will not eliminate the responsibility of the administration.[114] However, the AI-specific '*black box*'[115] and '*deeplearning*'[116] phenomenon in the decision-making process of AI tools makes it difficult to clearly attribute fault and causality in the resulting damage.[117]

Another problem in determining responsibility in areas where AI tools are used is whether or not the AI tools have a personality.[118] However, although artificial

administration by the principle of (social) rule of law is that the administration must be held accountable for all its acts and actions. İl Han Özay, *Devlet İdari Rejim ve Yargısal Korunma* (Filiz Kitabevi 1986) 39; Lütfi Duran, *Türkiye İdaresinin Sorumluluğu, Sorumluluğun Temeli ve Sebepleri Sorumluluğa Yol Açan Olgular* (Sevinç Matbaası 1974) 12; Yıldızhan Yayla, *Anayasa Hukuku Ders Notları* (Fatih Yayınevi Matbaası 1985) 90; Gürsel Kaplan, *İdari Yargılama Hukuku* (10th edition, Ekin Basım 2024) 280; Turan Yıldırım and Gül Üstün, 'İdarenin Sorumluluğu' in Nur Kaman (ed), *İdare Hukuku* (9th edition, On İki Levha Yayınları 2024) 629ff; Onur Karahanoğulları, *İdare Hukuku* (Turhan Kitabevi 2022) 546; Ender Ethem Atay and Hasan Odabaşı, *Teori ve Yargı Kararları Işığında İdarenin Sorumluluğu ve Tazminat Davaları* (2nd edition, Seçkin Yayıncılık 2010) 56; Şeref Gözübüyük and Turgut Tan, *İdare Hukuku Cilt I* (14th edition, Turhan Kitabevi 2021) 701; Mehmet Akif Bardakcı, '*İdarenin Eylemlerinden Kaynaklanan Sorumluluğu'* (DPhil thesis, 2013) 70; Müzeyyen Eroğlu Durkal, '*İdarenin Sorumluluğunun Ortaya Çıkışı ve Temeli'* (2019) 23 (1) Ankara Hacı Bayram Veli Üniversitesi Hukuk Fakültesi Dergisi 159, 164. The responsibility of the administration and the principle of social rule of law are also included in various judicial decisions. For some of these judgements, see also. Seyfettin Örgen, App no 2021/21101 (TCC, 23 October 2024); Mehmet Evelek, App no 2020/27829 (AYM, 3 October 2024); Mehmet Gasır, App no 2019/8569 (TCC, 20 December 2023); File nr. 2001/257, Decision nr. 2003/702 (TCS 10th Chamber, 25 February 2003); File nr. 1996/5023, Decision nr. 1998/807 (TCS 10th Chamber, 11 February 1999); File nr. 2016/3756, Decision nr. 2021/1916 (TCS 10th Chamber, 26 April 2021); File nr. 2016/8146, Decision nr. 2017/3270 (TCS 10th Chamber, 20 June 2017); File nr. 2011/4976, Decision nr. 2015/3234 (TCS 8th Chamber, 13 April 2015); File nr. 2015/39, Decision nr. 2015/3244 (TCS 10th Chamber, 24 June 2015); File nr. 2011/4976, Decision nr. 2015/3234 (TCS 8th Chamber, 13 April 2015); File nr. 2013/2544, Decision nr. 2016/1201 (TCS 10th Chamber, 8 March 2016); File nr. 2015/1000, Decision nr. 2020/3597 (TCS 10th Chamber, 12 October 2020); File nr. 2016/14661, Decision 2020/3643 (TCS 10th Chamber, 12 October 2020).

110 Qiand Meng, Minyue Ge and Zhang Feng, '*The Integration of Artificial Intelligence in Architectural Visualization Enhances Augmented Realism and Interactivity*' (Preprints, 14 August 2024) <https://doi.org/10.20944/preprints202408.1048.v1> accessed 4 March 2025.

111 Ayşe Almıla Tanrıverdi, '*Yapay Zekanın Kamu Hizmetinin Sunumuna Etkileri*' (2021) 1 (66) Adalet Dergisi 293, 295.

112 Sema Bayındır, '*Otonom Araçlarda Sözleşme Dışı Hukuki Sorumluluk Hallerinin Değerlendirilmesi*' (2021) 7 (2) İstanbul Aydın Üniversitesi Hukuk Fakültesi Dergisi 383, 384.

113 Constantine E. Kontokosta, '*Urban Informatics in the Science and Practice of Planning*' (2018) 41 (4) Journal of Planning Education and Research 382, 389.

114 Onur Kaplan, '*Yapay Zeka Kavramına İdare Hukuku Açısından Bir Yaklaşım*' (2020) ICCDSS 161, 167.

115 Tan Yiğitcanlar, Kevin C. Desouza, Luke Butler and Farnoosh Roozkhosh, '*Contributions and Risks of Artificial Intelligence (AI) in Building Smarter Cities: Insights from a Systematic Review of the Literature*' (2020) 13 (6) Energies 1, 16.

116 Thomas Krabichler and Josef Teichmann, '*A Case Study for Unlocking the Potential of Deep Learning in Asset-Liability-Management*' (Frontiers, 22 May 2023) <https://www.frontiersin.org/journals/artificial-intelligence/articles/10.3389/frai.2023.1177702/full> accessed 12 March 2025; Zhixia Lv, '*Problems and Effective Countermeasures in Joint and Several Liability of Civil and Commercial Law Based on Deep Learning Assessment'*(2024) 120 Journal of Combinatorial Mathematics and Combinatorial Computing 285, 289.

117 Fotios Fitsilis, *Imposing Regulation on Advanced Algorithms* (Springer 2019) 15.

118 There are various views whether AI tools should have a personality of their own. The main argument of those who advocate that AI agents should have a personality is that AI agents that may become autonomous should be held directly responsible for their own actions. Serkan Seyhan, *Yapay Zeka Teknolojileri Kapsamında İdarenin Sorumluluğu* (On İki Levha Yayınları 2023) 89. There are academics who think that a legal entity-like personality can be assigned to AI tools. Armağan Ebru Bozkurt Yüksel et al, *Fütürist Hukuk* (Aristo Yayınevi 2018) 19; Selin Çetin, 'Yapay Zekâ ve

intelligence can establish transactions, it does not have a will of its own. The AI tools, which produce the transactions it establishes mostly as '*automatic act*' as a result of the tasks assigned to it, will not have a personality, nor will it have the capacity of right and action.[119] However, considering the development of technology, it is foreseen that in the future, AI tools will not only be an administrative support tool but also an autonomous zoning planner.[120]

For these reasons, it will be possible to categorise the responsibility of the administration arising from the use of AI tools while preparing the zoning plans as follows: ***(i)*** *the liability arising from the machine errors caused by the inadequacy of the AI tools,* ***(ii)*** *the liability arising from the faulty use of the AI tools by the persons carrying out the public service.*

## A. Liability for Machine Defects Caused by the Inadequacy of the AI Tools

Determining the responsibility of the administration to compensate for the damages caused as a result of the zoning plan prepared by using AI tools and the implementation of this zoning plan is valuable in terms of establishing the financial liability of the administration.[121] However, if the resulting damage cannot be attributed to the person using the AI tool, it will be necessary to determine whether there is a causal link between the damage and the AI tool.[122] Indeed, incorrect and incomplete programming of AI tools may lead to incorrect results despite the correctly processed data. In such a case, the AI tool manufacturer,[123] who is the right holder in relation

Hukuk ile İlgili Güncel Tartışmalar' in *İstanbul, Ankara ve İzmir Baroları Çalıştay Raporu* (2019) 57 <https://www.istanbulbarosu.org.tr/files/docs/yapay_zeka_caginda_hukuk2019.pdf> accessed 12 March 2025. Another view is that AI tools should have a sui generis personality, and in fact, the European Parliament's 2017 recommendation also proposed the creation of an electronic type of personality. European Parliament Report, '*Report with recommendations to the Commission on Civil Law Rules on Robotics (2015/2103(INL)), Introduction B*' <https://www.europarl.europa.eu/doceo/document/A-8-2017-0005_EN.html> accessed 12 March 2025. For opinions in a similar direction, see also. Sinan Sami Akkurt, '*Avrupa Parlamentosu'nun "Robotik Hakkında Medenî Hukuk Kurallarına İlişkin 16 Şubat 2017 Tarihli Tavsiye Kararı"nın Genel Bir Tahlili ve Yasalaştırma Öngörüler*' (2019) 17 (198) Legal Hukuk Dergisi 2537, 2550-1; Şebnem Akipek Öcal, 'Yapay Zeka ve Hukuki Niteliği' in Erdem Büyüksağiş (ed), *Hukuk Perspektifinden Yapay Zeka* (On İki Levha 2022) 20; Erdem Doğan, *Yapay Zekanun Hukuki Statüsü ve Sorumluluğu* (Seçkin Yayıncılık 2022) 209.

119 Kemal Gözler, *İdare Hukuku Cilt I* (3rd edition, EkinYayınevi 2019) 189.

120 This situation is also referred to as the four stages of AI-based development planning. These stages were determined by anticipating technological developments regarding the use of AI tools in zoning planning processes. As a matter of fact, the transformation of AI tools, which are currently used in Turkey only at the stage of data collection and mapping based on these data and preparation for zoning plans, into the main body that prepares zoning plans with limited human intervention with the developing technology, is revealed with these stages. Zhong Ren Peng, Kai Fa Lu, Yanghe Liu and Wei Zhai, '*The Pathway of Urban Planning AI: From Planning Support to Plan-Making*' (2023) 44 (4) Journal of Planning Education and Research 2263, 2269.

121 Hasan Nuri Yaşar, '*İdarenin Sorumluluğu Üzerine Düşünceler*' (2008) 66 (1) İstanbul Üniversitesi Hukuk Fakültesi Mecmuası 201, 214.

122 As a rule, a causal link is not required in the context of the strict liability of the administration. However, in order for the administration to be liable for the damage caused by the use of the AI vehicle, it will be necessary to determine the source of the damage in order to determine the fault rate of the administration. As a matter of fact, the imposition of a legal liability on the administration for selecting the AI vehicle can be ensured by this causal link. Nida Malbeleği and Merve Ayçe Özmeriç, '*İdarenin Sözleşme Akdetme Zorunluluğu ve Sözleşme Görüşmelerinden Doğan Sorumluluğu*' (2020) 2 (1) Türk Alman Üniversitesi Hukuk Fakültesi Dergisi 133, 145.

123 Mark Burry, 'A New Agenda for AI-based Urban Design and Planning' in Imdat As, Prithwish Basu, Pratap Talwar (eds) *Artificial Intelligence in Urban Planning and Design: Technologies, Implementation, and Impacts* (Elsevier 2022) 17.

to the AI tools, will also be the person who should assume the responsibility.[124] In addition, even if there is no defect in the AI tools utilised by the administration, the strict liability of the administration will continue in the damages that may be caused will continue.[125]

In order to determine the responsibility of the administration, it will also be necessary to reveal who created the faulty AI tool. The AI tools, which are the tools to be used in the preparation of zoning plans, may be prepared by the administration itself[126] or, if it is authorised to have them prepared, they may be acquired through procurement.[127] If the inadequacy of the AI tools created by the administration itself or through the use of public service procedures for land use planning is caused by the administration that created the tool or had it created, there is a service failure.

If the AI tool, which is designed to be utilised at any stage of the preparation and implementation of the zoning plan and which works flawlessly in its initial state, subsequently starts to give erroneous results despite the administration's adequate and necessary supervision, only the strict liability of the administration will be in question here.[128] If the damage arises without any fault of the administration; if the damage arises from the existing autonomous decision-making process of the AI vehicle for an unforeseen reason despite all kinds of precautions of the administration, the administration's strict liability will be in question here.[129]

The administration will also be responsible for selecting the most appropriate product[130] because of the need and supervising this product. This liability will appear as a defect liability arising from the failure of the contracting authority to perform the public service correctly. The manufacturer may be held liable for the defect liability of the manufacturer of the AI tool tendered by the contracting authority due to the

124 Armağan Ebru Bozkurt Yüksel, '*Yapay Zeka Buluşlarının Patentlenmesi'* (2018) (11) Uyuşmazlık Mahkemesi Dergisi 585, 611.

125 John Kingston, '*Artificial Intelligence and Legal Liability*' (2016) International Conference on Innovative Techniques and Applications of Artificial Intelligence 269, 278; Paulius Čerka, Grigienė Juita and Sirbikytė Gintarė, '*Liability for Damages Caused by Artificial Intelligence*' (2015) 31 (3) Computer Law&Security Review 376, 385.

126 Here, the term '*administration*' is used to refer to the administration in a broad sense, including private law persons conducting administrative activities.

127 It is also necessary to evaluate the effects of the acquisition of an auxiliary AI tool in the preparation of zoning plans through tenders on the state in terms of cyber security. For detailed information on the subject, see also. Jenna Kerwin, '*What Is the Role of AI in Cybersecurity*' (Excelsior University, 1 August 2024) <https://www.excelsior.edu/article/ai-in-cybersecurity/> accessed 2 March 2025; Ahmet Efe, 'Yapay Zeka Odaklı Siber Risk ve Güvenlik Yönetimi' (2021) 5 (2) International Journal of Management Information Systems and Computer Science 144, 160.

128 Woodrow Barfield, '*Liability for Autonomous and Artificially Intelligent Robots*' (2018) 9 Journal of Behavioral Robotics 193, 197; Başak Bak, '*Medeni Hukuk Açısından Yapay Zekanın Hukuki Statüsü ve Yapay Zeka Kullanımından Doğan Hukuki Sorumluluk*' (2018) (35) Türkiye Adalet Akademisi Dergisi 211, 222.

129 However, if the administration also has a defect related to the supervision regarding the use of the faulty AI vehicle, then there will be a cumulative defect. Mesut Serdar Çekin, '*Otonom Araçlar ve Hukuki Sorumluluk*' (2018) (33) Türkiye Adalet Akademisi Dergisi 283, 298.

130 Melikşah Yasin, 'Kamu Hizmeti' in Nur Kaman (ed), *İdare Hukuku* (9th edition, On İki Levha Yayınları 2024) 254ff; Ali Erbaşı, '*Kamu İdarelerinin Mal Alımı İhalelerinde En Uygun Tedarikçinin Analitik Hiyerarşi Proses Yaklaşımı İle Belirlenmesi*' (2012) (9) International Journal of Economic and Administrative Studies 165, 166; Serkan Seyhan, *4734 Sayılı Kamu İhale Kanunu Kapsamındaki İhalelerin İdari ve Yargısal Denetimi* (On İki Levha Yayınları 2019) 5ff.

damage caused by a reason that was not recognised at first.[131] In determining the fault of the contracting authority for the damage caused by the defect of the AI vehicle tendered, the '*behaviour of the third party*'[132] should also be considered.

## B. Liability Arising from the Use of AI Tools by Persons Performing Public Service

Although the use of the AI tool reduces human error in the preparation and implementation of zoning plans,[133] the use of the AI tool will not eliminate the damages that will occur as a result of zoning plans. The use of AI tools today still involves human intervention,[134] so the resulting damage may be caused by the AI tool as well as by the people using the AI tool. For this reason, the primary responsibility of the administration regarding the use of AI tools is to train the personnel who will be involved in the zoning planning processes to understand these tools and make the necessary interventions.[135] As a matter of fact, the liability of the administration in the selection of the public personnel who will prepare and implement the land-use plan will be questioned.[136]

The liability of the AI tool may arise not only from the inaccuracy of the data on which it bases the zoning plan, or from the production of erroneous results based on these data, but also from the process of obtaining these data.[137] In the process of preparing zoning plans, it is essential to demonstrate that the necessary personal data are not processed[138] into the system without authorisation and that transparency[139]

131 Cemil Güner, '*Yapay Zekânın Verdiği Zarardan Doğan Sözleşme Dışı Sorumluluğa Uygulanacak Hukuk*' (2020) (15) Uyuşmazlık Mahkemesi Dergisi 229, 258.

132 Mutlu Kağıtçıoğlu, '*Yapay Zeka ve İdare Hukuku (Bugünden Geleceğe Yönelik Bir Değerlendirme)*' (2021) 11 (1) Hacettepe Hukuk Fakültesi Dergisi 118, 152.

133 Hulüsi Alphan Dinçkol, '*Yapay Zekanın İdari Yargı Üzerindeki Etkileri*' (2024) 12 (1) Sakarya Üniversitesi Hukuk Fakültesi Dergisi 47, 56; Ravil Mukhamediev et al, '*Review of Artificial Intelligence and Machine Learning Technologies: Classification, Restrictions, Opportunities and Challenges*' (2022) 10 (15) Mathematics 1, 10.

134 Mateusz Pszczyński, '*Administrative Decisions in the Era of Artificial Intelligence*' (2020) (11) Adam Mickiewicz University Law Review 251, 260.

135 Zafer Üskül, '*Kamu Yönetimi Personelinin Hizmet İçi Eğitimi*' (1975) 11 (1) Eskişehir İktisadi ve Ticari İlimler Akademisi Dergisi 281, 283; Zeynep Engin and Philip Treleaven, '*Algorithmic Government: Automating Public Services and Supporting Civil Servants in using Data Science Technologies*' (2019) 62 (3) The Computer Journal 448, 458; Dmitry Kuzmin, 'The Competencies of Civil Servants in the Field of Regulation of Technological Risks in the Practical Application of Artificial Intelligence' in Aleksei Bogoviz, Julia Ragulina (eds) *Industry Competitiveness: Digitalization, Management, and Integration* (Springer 2021) 911; Samuela Rostaş, '*Education and Professional Training of Public Servants in the Age of Artificial Intelligence*' (2024) 18 (1) AGORA International Journal of Juridical Science 231, 232. Hakan Dulkadiroğlu, '*Dijital Çağda Devlet Memurlarının Eğitimini Yeniden Düşünmek*' (2019) 52 (2) Amme İdaresi Dergisi 115, 118.

136 Harun Sağlam, '*Türk Hukukunda Kamu Görevlilerinin Kişisel Kusurlarından Kaynaklanan Zararlardan Dolayı İdarenin Sorumluluğu ve Kamu Görevlilerine Rücu Edilmesi*' (LLM Thesis, University of Atatürk 2010) 43.

137 Barış Özçelik, '*Yapay Zekanın Veri Koruma, Sorumluluk ve Fikri Mülkiyet Açısından Ortaya Çıkardığı Hukuki Gereksinimler*' (2021) (66) Adalet Dergisi 87, 99; Onur Sarı, '*Yapay Zekanın Sebep Olduğu Zararlardan Sorumlululuk*' (2020) (147) Türkiye Barolar Birliği Dergisi 252, 306; Şafak Narbay and Şerife Nur Kirazlı, '*Otonom Araçlarda Yapay Zekâ, Kişisel Verilerin İşlenmesi ve Sonuçları*' (2023) 11 (1) Sakarya Üniversitesi Hukuk Fakültesi Dergisi 49, 59.

138 Fitsilis (n 117) 49.

139 Stefan Larsson and Fredrik Heintz, '*Transparency in Artificial Intelligence*' (2020) 9 (2) Internet Policy Review 1, 9; Peter Parycek, Verena Schmid and Anna Sophie Novak, '*Artificial Intelligence (AI) and Automation in Administrative Procedures: Potentials, Limitations, and Framework Conditions*' (2024) 15 Journal of the Knowledge Economy 8390,

regarding the processed data can be ensured in order to ensure the principles of urbanism regarding zoning planning. For this reason, the rules regarding which data will be stored by the AI tools to be designed, how long these data will be stored and how they will be processed will need to be audited by the public official using the AI tool.[140] Otherwise, the administration will have to be responsible for the damages that may arise from non-compliance with the principles of the administrative procedure during the preparation of the zoning plans.[141] For example, the administration will also be expected to ensure the principle of urban justice and equality in the preparation and implementation of zoning plans. Nevertheless, if any damage is caused by the AI tool making zoning and proposals for the distribution of public services based on data on the crime rate and ethnic identity of the people living in the area that is the subject of the zoning plan in a biased manner; [142] this damage will be expected to be compensated by the administration.

The preparation of zoning plans is a process and the first contact of the public official and AI tools is to ensure that the data required for the creation of the plans are entered into the system correctly, or if these data are obtained with the help of AI tools, to test the accuracy of the data.[143] As a matter of fact, the determination of the purpose of use of the area that is the subject of zoning plans and the arrangements to be made on this area (land and/or plot) depends primarily on the quality of these data. The legal responsibility of the administration will be in question for the correct entry of the data and the supervision of the information obtained from the AI tools. For example, the administration will be liable for the damages that may occur in the zoning plan prepared as a result of the suggestion of places that are not suitable for construction within a local unit as a settlement area by the AI tool or the incorrect determination of the location of the cultural assets in the relevant region during the preparation of the zoning plans and the damages that may occur in the implementation of this plan, arising from the control of the data.

8391; Enrico Carloni, '*Transparency within the Artificial Administration Principles, Paths, Perspectives and Problems*' (2024) 16 (1) Italian Journal of Public Law 8, 9.

140 The administration is the data controller in the processes of collecting, storing and processing the data required for administrative activities. For this reason, there is a defective responsibility of the administration in the unauthorised processing and storage of data. Çağla Tansuğ, *İdari Faaliyetlerde İşlenen Kişisel Verilerin İdare Tarafından Korunması* (On İki Levha Yayıncılık 2023) 33.

141 Turan Yıldırım and Muhammed Göçgün, '*İdarenin Düzenleyici İşlemlerinde Eşitlik İlkesi*' (2016) 3 (2) İstanbul Medipol Üniversitesi Hukuk Fakültesi Dergisi 39, 40.

142 Burcu Zoğlar Durmaz, 'Kamuda Yapay Zeka' in Selin Çetin Kumkumoğlu et al. (eds) *Yapay Zeka Çağında Hukuk Yıllık Rapor* (İstanbul Barosu 2023) 24; Gregory Nelson, '*Bias in Artificial Intelligence'* (2019) 80 (4) National Library of Medicine 220, 221; Eirine Ntoutsi et al. '*Bias in Data-Driven Artificial İntelligence Systems'* (2020) 10 (3) WIREs Data Mining and Knowledge Discovery 1, 3; Osonde Osoba and William Welser, *An Intelligence in Our Image* (Rand Corporation 2017), 17.

143 Dominique Hogan Doran, '*Computer Says "No": Automation, Algorithms and Artificial İntelligence in Government Decision-Making*' (2017) 13 (3) Journal of the Judicial Commission of New South Wales 345, 350.

## VI. Effect of the Use of AI Tools in the Preparation and Implementation of Zoning Plans on the Audit of the Legality of Administrative Actions

The implementation of urban planning and zoning plans, which appear as regulatory acts, often restricts the various rights and interests of individuals, especially the right to property,[144] for the purpose of public interest.[145] Ensuring the balance between administration, which benefits from the presumption of legality with its unilateral will, and the individuals depends on the supervision of administrative acts by persons independent of the administration. For this reason, '*in the case of zoning plans, it is necessary to examine whether the purpose for which the immovable is allocated in terms of its location, size, location and function is appropriate in terms of urban planning principles, planning principles and public interest*'.[146]

Currently, AI tools still exist only as a tool and since they are the reason for the activities of the administration,[147] the audit of the zoning plans prepared mostly by using AI tools is not a special case. However, it is also observed that the use of only the data obtained from the AI tool and the absence of human intervention and examination in administrative acts regarding zoning based on AI tools is also a reason for the cancellation of some decisions.[148]

The zoning plans will not be finalised before the end of the announcement period; therefore, they cannot be subject to litigation before the end of the announcement period.[149] It will be necessary to discuss whether the information and data produced

144 Esin Örücü, *Taşınmaz Mülkiyetine Bir Kamu Hukuku Yaklaşımı: Mülkiyet Hakkının Sınırlanması* (İstanbul Üniversitesi Hukuk Fakültesi Yayınları 1976) 45; Çağatay Kesinok, 'Kent Planlama ve Uygulamasında Menfaat İhlali ve Dava Açma Ehliyeti' in Melih Ersoy, Çağatay Keskinok (eds) *Mekan Planlama ve Yargı Denetimi* (Yargı Yayınevi 2000) 15.

145 Tekin Akıllıoğlu, '*Kamu Yararı Kavramı Üzerine Düşünceler*' (1988) 9 (1-3) İdare Hukuku ve İlimleri Dergisi 11, 11; Ümit Doğanay, '*Toplum ve Kamu Yararı Kavramları*' (1974) (7) Mimarlık 5, 5. Although the public interest is the only objective of all administrative acts, considering the uncertainty of the concept, most of the time the limits of the concept of public interest are determined by the judicial body in each administrative act that is audited. Ruşen Keleş, 'Kent ve Çevre Değerleri Bağlamında Kamu Yararı Kavramı' in Melih Ersoy, Çağatay Keskinok (eds) *Mekan Planlama ve Yargı Denetimi* (Yargı Yayınevi 2000) 3.

146 File nr. 2017/762, Decision nr. 2020/5519 (TCS 6th Chamber, 17 June 2020); File nr. 2007/4479, Decision nr. 2009/1807 (TCS 6th Chamber, 25 February 2009); File nr. 1996/523, Decision nr. 1996/5823 (TCS 6th Chamber, 17 December 1996); File nr. 2006/4568, Decision nr. 2009/11206 (TCS 6th Chamber, 18 November 2009); File nr. 2006/4726, Decision nr. 2009/11204 (TCS 6th Chamber, 18 November 2009); File nr. 1998/2072, Decision nr. 1999/620 (TCS 6th Chamber, 7 December 1999).

147 Necip Fazıl Akburakcı, '*Yapay Zekânın İdarenin Takdir Yetkisi ve Karar Alma Mekanizmalarına Etkisi*' (2021) (20) İdare Hukuku ve İlimleri Dergisi 77, 86.

148 File nr. 2023/10303, Decision nr. 2024/3974 (TCS 4th Chamber, 13 June 2024) (TCS Kararlar Dergisi 2024/17); File nr. 2015/11397, Decision nr. 2020/130034 (TCS 6th Chamber, 17 December 2020).

149 Şevki Davut and Şenol Coşkun, '*İmar Planlarına Karşı Açılacak İptal Davalarında İdari Dava Açma Süresi*' (2011) 69 (1-2) İstanbul Üniversitesi Hukuk Fakültesi Mecmuası 1209, 1224; Andreea Raluca Slave et al, '*Assessing Public Opinion Using Self-Organizing Maps. Lessons from Urban Planning in Romania*' (2023) (231) Landscape and Urban Planning 1-3. Zoning plans have to be announced on the website of the relevant Municipality and on two different boards in the Municipality building. The publication of zoning plans on the website is related to the digital delivery of public services. It is tried to facilitate the relevant persons to have information and to ensure the transparency of the administration. For this reason, it should be evaluated within the concept of digital governance. Anutosh Das, '*Urban Planning, Information Technology and Artificial Intelligence: The Theory of Evolution*' (Preprints, 10 August 2021) <https://doi.org/10.20944/preprints202108.0228.v1> accessed 4 March 2025 ; Ahmet Tarhan, '*Halkla İlişkilerde Tanıma ve Tanıtma Aracı Olarak İnternet: Belediyelerin Web Sayfaları Üzerine Bir Analiz*' (2007) 4 (4) Selçuk İletişim Dergisi 75, 76; Pınar Eraslan Yayınoğlu, İdil Sayımer and Zafer Arda, '*Belediyelerin Kurumsal Web Sitesi Kullanımı Üzerine Bir İnceleme: Londra Büyükşehir Yönetimi ve İstanbul Büyükşehir Belediyesi Web Sitesi Ana Sayfalarının Karşılaştırılması*' (2007) 7 Galatasaray

by the AI tools, which appear as an auxiliary tool for the administration in the transactions to be established by the administration regarding the zoning plan, can be subject to litigation independently from the administrative case based on these data. It will be possible to evaluate the acts of the AI tools that will help the administration to carry out the public service as a '*preparatory act*'[150] and as a '*declaratory act*'[151] that may constitute the reason for the administrative activities.

Due to the fact that zoning plans are regulatory acts, it is thought that a full remedy case cannot be filed for a damage caused by a zoning plan, based on the idea that regulatory acts do not directly violate the rights of individuals. Although it is not possible to find an example of this, it would not be correct to say that only the decrease in the value of the immovable property of the person with the zoning plan will not create a violation of rights for the person.

In order to implement the zoning plans, a case for annulment may be filed against the acts of the administration based on the zoning plan, and if there is a violation of a right, a full remedy case may be filed by the person concerned. However, the period within which a case may be filed for the implementation of the zoning plan and the zoning plan is limited by a special article in the Law.[152]

Rather than creating a separate will in the preparation and implementation of zoning plans, AI tools constitute the reason for the unilateral executive will of the administration. Within the scope of Law No. 6306[153], the relevant area

Üniversitesi İletişim Dergisi 129, 136; Aslı Yağmurlu, '*Siyasal Katılım ve Halkla İlişkiler: Ankara Merkez İlçe Belediyeleri İnternet Siteleri Üzerine Bir İnceleme*' (2011) (471-472) Türk İdare Dergisi 197, 200 ; However, zoning plans are not exempt from legal review in this process. In this process, an administrative appeal may be filed for the cancellation of the zoning plans. Semin Yavuz Gargın, '*İmar Planlarından Doğan Hukuki Uyuşmazlıklarda Dava Açma Süresi*' (2025) 29 (1) Ankara Hacı Bayram Veli Üniversitesi Hukuk Fakültesi Dergisi 413, 455; Hüseyin Melih Çakır, '*7221 Sayılı Kanunla İmar ve Parselasyon Planlarına Karşı Dava Açma Süresinin Sınırlandırılması*' (2024) 30 (2) Marmara Üniversitesi Hukuk Fakültesi Hukuk Araştırmaları Dergisi 506, 510; Melih Ersoy, '*İmar Planı Değişiklikleri ve Yargı Denetimi*' (1997) 17 (1-2) ODTÜ Mimarlık Fakültesi Dergisi 53, 58. Administrative appeal is not a mandatory remedy and the decision rendered by the administration as a result of this appeal is definite. Kaya Burak Öztürk, *Hak Arama Özgürlüğü Çerçevesinde Zorunlu İdari İtiraz* (Yetkin Yayınları 2015) 52; Dilşat Yılmaz, '*Türk İdare Hukuku'nda İdari İşlemin "Kesin"liği Üzerine Bir Değerlendirme: "Kime Göre?", "Ne İçin?" Kesinlik*' (2017) 21 (2) Gazi Üniversitesi Hukuk Fakültesi Dergisi 105, 112.

150 Yıldızhan Yayla, *İdare Hukuku* (2nd edition, Beta Yayıncılık 2010) 109; Metin Günday, *İdare Hukuku* (9th edition, İmaj Yayınevi 2017) 124; Ender Ethem Atay, '*Müfettişlerin Hazırladıkları Disiplin Soruşturma Raporlarından Dolayı Sorumlu Tutulabilirliği Sorunu*' (2016) (7) Uyuşmazlık Mahkemesi Dergisi 167, 172; Hulüsi Alphan Dinçkol, '*İcrai Olmayan İşlem Türlerinden Yol Gösterici İşlemin Hukuki Değeri*' (2021) 27 (2) Marmara Üniversitesi Hukuk Fakültesi Hukuk Araştırmaları Dergisi 1107, 1110.

151 Onur Kaplan, *İdari İşlem Teorisi Açısından İdare Hukukunda Tespit Edici İşlemlerin Yeri* (On İki Levha Yayıncılık 2021) 343. '*Acts of the administration*' that do not produce a legal effect for those concerned and are not executory cannot be subject to judgement as per the law. Dilşad Yılmaz, *İdari İşlemin İcrailik Özelliği* (Astana Yayınları 2014) 28. However, it can be handled and audited together with the administrative act for which it constitutes the basis. Onur Kaplan and Gül Fiş Üstün, '*Tespit Edici İşlemlerle Bağlantılı Olarak İdari Yargılama Hukukunda Tespit Davalarının Uygulama Alanı ve Gerekliliği Üzerine Bir Değerlendirme*' (2020) 26 (1) Marmara Üniversitesi Hukuk Fakültesi Hukuk Araştırmaları Dergisi 131, 140.

152 Even though the time period for filing a case for the cancellation of the zoning plans prepared with the assistance of the AI tool has passed, an action for the cancellation of the zoning plan may also be filed within a period of five years from the finalisation of the zoning plan, together with the implementation action taken by the administration based on the zoning plan. Art. 8/13 of the Law No. 3194: '*A lawsuit may be filed against finalised zoning plans or parcelisation plans within five years from the date of finalisation in any case'.*

153 Law on the Transformation of Areas Under Disaster Risk, OJ.31.05.2012/28309.

may be determined as a risky area due to the risky buildings and unlicensed buildings detected by the AI tool, or although an immovable property suitable for the public need has been detected by the AI tool, a DRS[154] may have been taken from the immovable property belonging to the real person in order to create a public service area.[155] At this point, the lawfulness of the procedural element of the administrative act shall also be examined in accordance with the ordinary judicial procedure.

Another possibility regarding the use of the AI tool is the determination of the area and immovable property regulated by the zoning plan, in other words, the determination of the subject matter of the administrative act. In fact, the administration using the AI tool and, if a causal link can be established, the administration producing the AI tool and other relevant institutions may be responsible for the determination of the zoning areas determined[156] during the preparation of the zoning plans in violation of the principles of urbanism.

For all these reasons explained, the legal review of the zoning plan and the implementation procedures to be carried out because of this zoning plan will not be separated from the ordinary procedures. However, since it is difficult to determine the authority to which we will address the claim for the damages resulting from the use of AI tools, a recourse problematic will arise.[157] If the contracting authority is not at fault for the damage caused by the AI vehicle produced by persons other than the contracting authority in connection with the use of the AI vehicle and the tender procedure, the contracting authority may require the private person producing the AI

154 İbrahim Karaaslan, Nuh Azgınoğlu and Murat Taşyürek, *'İmar Uygulamalarında Dağıtımın Veri Madenciliği Yöntemi Kullanılarak Yapılması*' (2022) 11 (3) Nigde Omer Halisdemir University Journal of Engineering Sciences 506, 509.

155 The deductions to be made from the immovable property belonging to private law persons, or the deductions that are applied when there is no need for such a deduction or such a deduction, and that are contrary to the principle of equality that must be complied with when deducting the DRS, should be cancelled as they violate the right to property. For similar decisions, see also. File nr. 1989/641, Decision nr. 1990/2207 (TCS 6th Chamber, 20 November 1990); File nr. 2011/7373, Decision nr. 2013/956 (TCS 6th Chamber, 18 February 2013); File nr. 2001/2999, Decision nr. 2003/1045 (TCS 6th Chamber, 19 February 2003); File nr. 2010/12286, Decision nr. 2014/1512 (TCS 6th Chamber, 3 March 2014); File nr. 2008/3603, Decision nr. 2010/4508 (TCS 6th Chamber, 5 May 2010). For principles see also; Melikşah Yasin, 'Kentsel Dönüşüm Uygulamalarına İlişkin Temel İlkeler' in Melikşah Yasin/Cenk Şahin (Ed.), *Kentsel Dönüşüm Hukuku* (İstanbul Üniversitesi S.S.Onar İdare Hukuku ve İlimleri Araştırma ve Uygulama Merkezi Yayınları 2013) 14ff.

156 Orhan Kuntay, '*Yaşatılmaya Çalışılan Ölü: Zoning (Bölgeleme)*' (Mimarlık Dergisi, 2004) <http://mimarlikdergisi.com/index.cfm?sayfa=mimarlik&DergiSayi=27&RecID=322> accessed 9 March 2025; Mehmet Uçar and Handan Arslan, '*Milli Parklarda Bölgeleme ve Planlama: Cilo ve Sat Dağları Milli Parkı Örneği*' (2024) 34 Fırat Üniversitesi Sosyal Bilimler Dergisi 483, 490. For the decisions stating that the overlapping of industrial zones, conservation areas, forestry and agricultural areas in the zoning plans or their being located in very close areas, which would create a conflict if they are located together with residential areas, are grounds for cancellation. File nr. 2021/10712, Decision nr. 2023/3318 (TCS 2nd Chamber, 8 June 2023); File nr. 2014/6307, Decision nr. 20215/4184 (TCS 6th Chamber, 15 June 2015); File nr. 2015/6285, Decision nr. 2016/874 (TCS 6th Chamber, 1 March 2016); File nr. 2018/223, Decision nr. 2019/611 (Konya Regional Administrative Court 5th Administrative Case Chamber, 17 April 2019); File nr. 2008/7832, Decision nr. 2010/10934 (TCS 10th Chamber, 7 December 2010); File nr. 2016/3172, Decision nr. 2019/6463 (TCS 6th Chamber, 26 June 2019); File nr. 2020/73, Decision nr. 2020/239 (İzmir Regional Administrative Court 3rd Administrative Case Chamber, 11 March 2020); File nr. 207/1881, Decision nr. 2019/497 (Konya Regional Administrative Court 2th Administrative Case Chamber, 12 March 2019); File nr. 2012/1901, Decision nr. 2013/353 (TCS 6th Chamber, 30 January 2013); File nr. 2020/1885, Decision nr. 2024/1076 (TCS 6th Chamber, 21 February 2024).

157 Seyhan (n 118) 305.

vehicle to compensate for this damage in accordance with the provisions of the law of obligations.[158]

## Conclusion

It is possible to characterise zoning plans as living legal documents because they derive from many implementation procedures and affect the property rights of individuals. In the preparation of such an important administrative act, which establishes the principles of local development, it is important to take into account the various technological possibilities, within the framework of the principle of adaptability, as well as the opinions of various institutions and organisations. It should be noted that the positive effects of the use of AI tools in the context of land planning activities are more evident in terms of determining the amount of land to be covered by the plan and the optimal use of the land covered by the plan. Accordingly, AI tools will play an important role in calculating and evaluating the optimal density in the creation of public goods such as roads and parks. In this way, obtaining real numerical data, determining public goods along with their boundaries in the area subject to the plan, and enabling people to exercise their fundamental rights and freedoms through the use of public goods will be more effectively realised.

In fact, the existence of these opportunities cannot be ignored in the preparation and implementation of zoning plans, given the AI tools developed in recent years and the clear emphasis on the phenomenon of digital transformation in development plans. Such an approach would also be contrary to the provisions of Art. 5 and Art. 56 of the Constitution. The programmes from which architects and designers benefit in terms of building blocks can be used as an AI tool in the planning of larger areas, that is, in the preparation and implementation of zoning plans. Undoubtedly, the input of population densities, topographical features and economic characteristics of the areas covered by the zoning plan as data can lead to a zoning plan that responds more accurately to needs. Similarly, about the implementation of the principle of gradual unity of plans, the use of AI tools can make it easier to ensure compliance with the higher-level plan. All these developments will be beneficial in terms of the conformity of the lower-scale zoning plans to be made and may also reduce the legal disputes that may arise. Thanks to the use of AI tools, a much more effective announcement method can be applied than just announcing on the municipality's

158 Von Friedrich Graf von Westphalen, 'Produkthaftungsrechtliche Erwägungen beim Versagen Künstlicher Intelligenz (KI) unter Beachtung der Mitteilung der Kommission COM (2020) 64 final' translated by İpek Aldemir Toprak, '*Komisyon'un COM (2020) 64 Final Raporu Işığında Yapay Zekânın Hatalı İşleyişi İle İlgili Ürün Sorumluluğu Hukukuna İlişkin Düşünceler*' (2021) 27 (1) Marmara Üniversitesi Hukuk Fakültesi Hukuk Araştırmaları Dergisi 741, 744; Erdem Büyüksağiş, Elif Ceren Türkoğlu and Onur Alptekin, 'Yapay Zeka İşletenin Hukuki Sorumluluğu' in Erdem Büyüksağiş (ed), *Hukuk Perspektifinden Yapay Zeka* (On İki Levha Yayıncılık 2022) 86. Defect liability may also arise for faulty algorithms that were not recognised at the time the AI tool was provided, but were recognised later in the process due to machine learning.

website and bulletin board, and violations of the right to a fair trial arising from the delay or strict interpretation of the time limit for filing a case can be prevented.

In addition to these positive features, the use of AI tools in the preparation and implementation of zoning plans may have negative effects. In particular, the autonomous learning capability of AI tools, the possibility of making decisions in a non-transparent manner, the lack of human intervention, the emergence of the concept of machine error, or the risks related to how this information will be stored in the process of obtaining digital real data are also valid here. In addition to the legal arrangements that need to be made in order to minimise these risks, it should be emphasised that participation should be ensured in real terms in zoning plans. The use of AI tools can also lead local authorities to inertia, away from human intervention. In this respect, human intervention should not be completely excluded, and it is necessary to address the question of the legal liability of administrative authorities in relation to such use of AI tools. Of course, the use of AI tools will not absolve administrative authorities from legal liability, as any possible declaration of will to make, modify or withdraw the plans belongs to the administrative authority. Therefore, administrative cases will not be able to rely on this defence, and it will be much more important to present and investigate the data entered into the AI tools, including how it was obtained. It should be emphasised that the principle of transparency and the prohibition of discrimination should be respected in order to reduce the number of administrative cases.

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