the built environment has a severe impact on the natural ecosystems due to the amount of energy and materials needed to sustain the sector. It is also important to note that, human activities in the built environment do contribute to loss of biodiversity affecting the ability of the ecosystem to support living organism(Pedersen Zari, 2012)

由于维持该部门所需的能源和材料的数量，建筑环境对自然生态系统产生了严重影响。同样重要的是要注意，人类在建筑环境中的活动确实导致了生物多样性的丧失，影响了生态系统支持生物体的能力。

the United Nations Environment Program (UNEP) states that 40% of all energy and material resources are used to build and operate buildings globally (UNEP – Sustainable Buildings and Construction Initiative, [2007](https://www.tandfonline.com/doi/full/10.1080/09613218.2011.628547?casa_token=8fw9xF3P4EYAAAAA%3AF4QmB5GIvX5FkOARyM5gGbKnHhPElGijLtk6eGIls9um3QhNS0qjGFzBgGBOF7r-eUBYprxjdYwdBw)).(Pedersen Zari, 2012)

联合国环境规划署（UNEP）指出，全球40%的能源和材料资源被用于建造和运营建筑（UNEP-可持续建筑和建设倡议，2007）。

Panel on Climate Change (IPCC) estimated that between 1970 and 2004, global greenhouse gas emissions due to human activities rose by 70 percent (IPCC, 2007).(Programme, 2009)

it is a causal factor in rising sea levels, increased occurrence of severe weather events, food shortages, changing patterns of disease, severe water shortages and the loss of tropical forests. Most experts agree that over the next few decades, the world will undergo potentially dangerous changes in climate, which will have a significant impact on almost every aspect of our environment, economies and societies.

它是海平面上升、恶劣天气事件发生率增加、粮食短缺、疾病模式改变、严重缺水和热带森林消失的一个因果因素。大多数专家同意，在未来几十年里，世界将经历潜在的危险的气候变化，这将对我们的环境、经济和社会的几乎每个方面产生重大影响。

It is commonly known that the built environment has a large negative effect on ecosystem services (Graham, 2009)

The built environment varies greatly according to different climatic, economic, political and cultural contexts, and systemic approaches that are appropriate to specific places will also vary greatly. t

建筑环境因气候、经济、政治和文化背景的不同而有很大差异，适用于特定场所的系统方法

也会有很大差异。

The built environment is described as a major contributor to biodiversity loss and climate change due to the large volume of resources consumed by the construction industry.

由于建筑业消耗了大量的资源，建筑环境被描述为生物多样性丧失和气候变化的主要促成者。

The universal adoption of the 2030 agenda for [Sustainable Development](https://www.sciencedirect.com/topics/earth-and-planetary-sciences/environmental-impact-assessment) which set out 17 [Sustainable Development Goals](https://www.sciencedirect.com/topics/earth-and-planetary-sciences/sustainable-development-goals) and 169 targets, underpinned by 232 indicators is one major initiative towards the protection of the planet for current and future generations

Sustainable Development Goal 15 (SDG15) aims at “protecting, restoring and promoting sustainable use of [terrestrial ecosystems](https://www.sciencedirect.com/topics/earth-and-planetary-sciences/terrestrial-ecosystem), sustainably manage forests, combat [desertification](https://www.sciencedirect.com/topics/earth-and-planetary-sciences/desertification), and halt and reverse [land degradation](https://www.sciencedirect.com/topics/earth-and-planetary-sciences/land-degradation) and biodiversity loss” (UN, 2015)

2030年可持续发展议程的普遍通过，提出了17个可持续发展目标和169个具体目标，并以232个指标为基础，是为今世和后代保护地球的一项重大举措。

可持续发展目标15（SDG15）旨在 "保护、恢复和促进陆地生态系统的可持续利用，可持续地管理森林，防治荒漠化，阻止和扭转土地退化和生物多样性的丧失"

Urban systems are expanding at very fast rates all over the world. Forecasts suggest that expansion rates will dramatically increase the size of cities – threefold by the middle of the century – with expansion rates of 2.4% and expanding speeds over 300 ml per year (Angel et al., 2011; [Seto et al., 2012](https://www.sciencedirect.com/science/article/pii/S1470160X18308379?casa_token=UX6_auZioX8AAAAA:UqGwnOxFFUwbSlqntVJ-JN28UPrUSz6kmq8xyMTfareFo7AcgyF_qlwKVpkLgCPEKmyuufgcH0U" \l "bib37); [Inostroza et al., 2013](https://www.sciencedirect.com/science/article/pii/S1470160X18308379?casa_token=UX6_auZioX8AAAAA:UqGwnOxFFUwbSlqntVJ-JN28UPrUSz6kmq8xyMTfareFo7AcgyF_qlwKVpkLgCPEKmyuufgcH0U" \l "bib21)).(Artmann et al., 2019)

世界各地的城市系统正在以非常快的速度扩张。预测表明，扩张速度将极大地增加城市的规模--到本世纪中叶是三倍--扩张率为2.4%，扩张速度超过每年300毫升

生态系统服务

Cities have been the engines of socioeconomic development but also the centers of major environmental problems since the industrial revolution. Numerous studies have shown that our urban ecosystems and landscapes are on an unsustainable trajectory. Global sustainability depends critically on cities, and urban ecology can – and needs to – play a key role in the transition toward sustainability.(Wu, 2014)

自工业革命以来，城市一直是社会经济发展的引擎，但也是重大环境问题的中心。大量的研究表明，我们的城市生态系统和景观正处于不可持续的轨道上。全球的可持续发展关键取决于城市，而城市生态学可以--而且需要--在向可持续发展的过渡中发挥关键作用。

The study of urban spatial patterns includes several aspects, ranging from green-space distribution, waterways, transportation networks, urban growth forms, to urban landscape patterns. My emphasis here is on the quantification of the spatial and temporal patterns of urban landscapes.

城市空间格局研究包括绿地分布、水路、交通网络、城市增长形态、城市景观格局等多个方面。我在这里的重点是量化城市景观的空间和时间模式。

Assessing how urbanization affects biodiversity and ecological conditions has been a major research focus in most ecological and environmental studies of cities during the past several decades

在过去的几十年里，评估城市化如何影响生物多样性和生态条件一直是大多数城市生态和环境研究的主要研究重点。

Climate change threatens to shift vegetation, disrupting ecosystems and damaging human well-being.

气候变化威胁着植被的转移，破坏了生态系统，损害了人类的福祉。

the phenomenon known as “urban sprawl” has emerged in the United States over the past few years. Critics of sprawl argue that urban expansion encroaches excessively on agricultural land, leading to a loss of amenity benefits from open space as well as the depletion of farmland resources. The critics also argue that the long commutes generated by urban expansion create excessive traffic congestion and air pollution. In addition, growth at the urban fringe is thought to depress the incentive for redevelopment of land closer to city centers, leading to decay of downtown(Brueckner et al., 2001)在过去的几年里，美国出现了被称为 "城市无序扩张 "的现象。批评无序扩张的人认为，城市扩张过度侵占了农业用地，导致了开放空间的舒适性利益的丧失以及农田资源的耗尽。批评者还认为，城市扩张产生的长距离通勤造成了过度的交通拥堵和空气污染。 此外，城市边缘的增长被认为抑制了靠近市中心的土地再开发的积极性，导致了市中心的衰败

Urban sprawl is called inefficient because it generates low density development that is “sprawled” over the landscape. A primary justification for interfering in the land market is a presumption that the public good is served by reducing urban sprawl through policies aimed at preventing discontinuous development.(Peiser, 1989) 城市无序扩张被称为低效，因为它产生了 "蔓延 "在景观上的低密度发展。干预土地市场的一个主要理由是假定通过旨在防止不连续发展的政策来减少城市无序扩张，从而实现公共利益。

Rapid increase of [urban sprawl](https://www.sciencedirect.com/topics/earth-and-planetary-sciences/urban-sprawl) in many countries worldwide has become a major concern because of its detrimental [effects on the environment](https://www.sciencedirect.com/topics/earth-and-planetary-sciences/effect-on-the-environment)(Jaeger et al., 2010).

urban sprawl has been a topic of scientific research for more than 20 years, meaningful and reliable measures of urban sprawl are still lacking.(Jaeger et al., 2010)

on the one hand, the spilling over of urban-type buildings into the suburban and agrarian areas, and on the other hand, the disorganized growth of sporadic beginnings of settlements in agrarian regions (Wackermann, 1968)

一方面，城市类型的建筑溢出到郊区和农业地区，另一方面，农业地区零星的居民点开始无序增长

[Haber (2007)](https://www.sciencedirect.com/science/article/pii/S1470160X09001265?casa_token=Z0tfMbrCxo4AAAAA:ZK_rqnjrdoLlIhGkhMycod5BpNkSo-MyI0_1dNE5gAiw25u-96Koi9deTVK5X7qZgohk5vKD8oQ" \l "bib19) has warned that land and arable soils are becoming scarcer at an alarming rate, but their increasing scarcity is still underrated. Therefore, much higher efforts are necessary to conserve and properly use land and soils ([Haber, 2007](https://www.sciencedirect.com/science/article/pii/S1470160X09001265?casa_token=Z0tfMbrCxo4AAAAA:ZK_rqnjrdoLlIhGkhMycod5BpNkSo-MyI0_1dNE5gAiw25u-96Koi9deTVK5X7qZgohk5vKD8oQ#bib19)). (Haber, 2007)

Haber (2007)警告说，土地和可耕地正以惊人的速度变得越来越少，但其日益稀缺性仍被低估。因此，有必要作出更大的努力来保护和正确使用土地和土壤。

 are the key issues we have to devote our work to, based on careful ecological information, planning and design for proper uses and purposes. The article concludes with a short reflection on economy and competition as general driving forces, and on the role and reputation of today’s ecology. 我们必须在仔细的生态信息、规划和设计的基础上，为适当的用途和目的投入工作的关键问题。文章最后对作为一般驱动力的经济和竞争，以及当今生态学的作用和声誉进行了简短的思考。

China's unprecedented urbanization has resulted in accelerating [urban sprawl](https://www.sciencedirect.com/topics/earth-and-planetary-sciences/urban-sprawl), which is threatening the country's eco-environmental quality and socioeconomic [sustainability](https://www.sciencedirect.com/topics/earth-and-planetary-sciences/environmental-impact-assessment). (Li and Li, 2019)

The results revealed that China has experienced drastic urban sprawl over almost all of the last decade with an average urban sprawl index (USI) of 3.16%. However, the rate of urban sprawl has decreased since 2010. (Li and Li, 2019)

中国史无前例的城市化进程导致了城市无序扩张的加速，威胁着中国的生态环境质量和社会经济可持续性。

for example, who define a sprawl index for an urban area as “the amount of undeveloped land surrounding an average urban dwelling”.(Burchfield et al., 2006)

研究结果显示，在过去十年中，中国几乎都经历了急剧的城市扩张，平均城市扩张指数（USI）为3.16%。然而，自2010年以来，城市扩张的速度已经下降。

decision-makers should seriously consider the differences in urban sprawl depending on region, urban size, and hierarchy. 决策者应该认真考虑城市蔓延因地区、城市规模和等级结构而产生的差异。

sprawl is has been associated with a series of ecological, economic, and social issues, for example, loss of urban open space ([Frenkel, 2004](https://www.sciencedirect.com/science/article/pii/S0048969719316006?casa_token=ZFaM-0L783kAAAAA:qBBUnQs3DbEWCFJ4epxfShs91GjOyyyk16xQxXT2mT2YZ2IXDklWZONMLR9z8KlLAGLQ3nytqzs" \l "bb0090)), loss of prime farmland ([Milesi et al., 2003](https://www.sciencedirect.com/science/article/pii/S0048969719316006?casa_token=ZFaM-0L783kAAAAA:qBBUnQs3DbEWCFJ4epxfShs91GjOyyyk16xQxXT2mT2YZ2IXDklWZONMLR9z8KlLAGLQ3nytqzs" \l "bb0215); [Skog and Steinnes, 2016](https://www.sciencedirect.com/science/article/pii/S0048969719316006?casa_token=ZFaM-0L783kAAAAA:qBBUnQs3DbEWCFJ4epxfShs91GjOyyyk16xQxXT2mT2YZ2IXDklWZONMLR9z8KlLAGLQ3nytqzs" \l "bb0245)), reduction of urban forest carbon stocks ([Ren et al., 2012](https://www.sciencedirect.com/science/article/pii/S0048969719316006?casa_token=ZFaM-0L783kAAAAA:qBBUnQs3DbEWCFJ4epxfShs91GjOyyyk16xQxXT2mT2YZ2IXDklWZONMLR9z8KlLAGLQ3nytqzs" \l "bb0230)), traffic congestion ([Young et al., 2016](https://www.sciencedirect.com/science/article/pii/S0048969719316006?casa_token=ZFaM-0L783kAAAAA:qBBUnQs3DbEWCFJ4epxfShs91GjOyyyk16xQxXT2mT2YZ2IXDklWZONMLR9z8KlLAGLQ3nytqzs" \l "bb0290)), dislocation between home and work ([Weitz and Crawford, 2012](https://www.sciencedirect.com/science/article/pii/S0048969719316006?casa_token=ZFaM-0L783kAAAAA:qBBUnQs3DbEWCFJ4epxfShs91GjOyyyk16xQxXT2mT2YZ2IXDklWZONMLR9z8KlLAGLQ3nytqzs" \l "bb0280)), loss of biodiversity ([McKinney, 2002](https://www.sciencedirect.com/science/article/pii/S0048969719316006?casa_token=ZFaM-0L783kAAAAA:qBBUnQs3DbEWCFJ4epxfShs91GjOyyyk16xQxXT2mT2YZ2IXDklWZONMLR9z8KlLAGLQ3nytqzs" \l "bb0210)), growth of energy consumption and [greenhouse gas emissions](https://www.sciencedirect.com/topics/earth-and-planetary-sciences/greenhouse-gas-emission) ([Ewing and Rong, 2008](https://www.sciencedirect.com/science/article/pii/S0048969719316006?casa_token=ZFaM-0L783kAAAAA:qBBUnQs3DbEWCFJ4epxfShs91GjOyyyk16xQxXT2mT2YZ2IXDklWZONMLR9z8KlLAGLQ3nytqzs" \l "bb0070); [Hankey and Marshall, 2010](https://www.sciencedirect.com/science/article/pii/S0048969719316006?casa_token=ZFaM-0L783kAAAAA:qBBUnQs3DbEWCFJ4epxfShs91GjOyyyk16xQxXT2mT2YZ2IXDklWZONMLR9z8KlLAGLQ3nytqzs" \l "bb0125)), local climate changes ([Emadodin et al., 2016](https://www.sciencedirect.com/science/article/pii/S0048969719316006?casa_token=ZFaM-0L783kAAAAA:qBBUnQs3DbEWCFJ4epxfShs91GjOyyyk16xQxXT2mT2YZ2IXDklWZONMLR9z8KlLAGLQ3nytqzs" \l "bb0055)), fragmentation of the landscape ([Inostroza et al., 2013](https://www.sciencedirect.com/science/article/pii/S0048969719316006?casa_token=ZFaM-0L783kAAAAA:qBBUnQs3DbEWCFJ4epxfShs91GjOyyyk16xQxXT2mT2YZ2IXDklWZONMLR9z8KlLAGLQ3nytqzs" \l "bb0150); [Irwin and Bockstael, 2007](https://www.sciencedirect.com/science/article/pii/S0048969719316006?casa_token=ZFaM-0L783kAAAAA:qBBUnQs3DbEWCFJ4epxfShs91GjOyyyk16xQxXT2mT2YZ2IXDklWZONMLR9z8KlLAGLQ3nytqzs" \l "bb0155)), and reduced air quality and increased water contamination ([Fenger, 1999](https://www.sciencedirect.com/science/article/pii/S0048969719316006?casa_token=ZFaM-0L783kAAAAA:qBBUnQs3DbEWCFJ4epxfShs91GjOyyyk16xQxXT2mT2YZ2IXDklWZONMLR9z8KlLAGLQ3nytqzs" \l "bb0080); [Frumkin, 2002](https://www.sciencedirect.com/science/article/pii/S0048969719316006?casa_token=ZFaM-0L783kAAAAA:qBBUnQs3DbEWCFJ4epxfShs91GjOyyyk16xQxXT2mT2YZ2IXDklWZONMLR9z8KlLAGLQ3nytqzs" \l "bb0095); [Stone, 2008](https://www.sciencedirect.com/science/article/pii/S0048969719316006?casa_token=ZFaM-0L783kAAAAA:qBBUnQs3DbEWCFJ4epxfShs91GjOyyyk16xQxXT2mT2YZ2IXDklWZONMLR9z8KlLAGLQ3nytqzs" \l "bb0250)). (Li and Li, 2019)

Urban sprawl, which is commonly caused by urbanization, population growth, and economic development, has developed into a global problem that has attracted worldwide concern over the last several decades(Li and Li, 2019)

Developing countries have become the main driving force of global urbanization as 15 of the world's 20 largest cities are in these countries(Yue et al., 2013)

Similarly, China's urban sprawl has also attracted widespread concern from researchers. Urban sprawl was first addressed by [Fung (1981)](https://www.sciencedirect.com/science/article/pii/S0048969719316006?casa_token=ZFaM-0L783kAAAAA:qBBUnQs3DbEWCFJ4epxfShs91GjOyyyk16xQxXT2mT2YZ2IXDklWZONMLR9z8KlLAGLQ3nytqzs" \l "bb0105) in a characterization of urban development in China. Subsequently, due to rapid and unprecedented urban expansion, urban sprawl has been investigated in many Chinese cities and regions, including Beijing ([Jiang et al., 2007](https://www.sciencedirect.com/science/article/pii/S0048969719316006?casa_token=ZFaM-0L783kAAAAA:qBBUnQs3DbEWCFJ4epxfShs91GjOyyyk16xQxXT2mT2YZ2IXDklWZONMLR9z8KlLAGLQ3nytqzs" \l "bb0165)), Guangzhou ([Yu and Ng, 2007](https://www.sciencedirect.com/science/article/pii/S0048969719316006?casa_token=ZFaM-0L783kAAAAA:qBBUnQs3DbEWCFJ4epxfShs91GjOyyyk16xQxXT2mT2YZ2IXDklWZONMLR9z8KlLAGLQ3nytqzs" \l "bb0295)), Shenzhen ([Lv et al., 2011](https://www.sciencedirect.com/science/article/pii/S0048969719316006?casa_token=ZFaM-0L783kAAAAA:qBBUnQs3DbEWCFJ4epxfShs91GjOyyyk16xQxXT2mT2YZ2IXDklWZONMLR9z8KlLAGLQ3nytqzs" \l "bb0190)), Hangzhou ([Yue et al., 2013](https://www.sciencedirect.com/science/article/pii/S0048969719316006?casa_token=ZFaM-0L783kAAAAA:qBBUnQs3DbEWCFJ4epxfShs91GjOyyyk16xQxXT2mT2YZ2IXDklWZONMLR9z8KlLAGLQ3nytqzs" \l "bb0300)), Wuhan ([Hu et al., 2015](https://www.sciencedirect.com/science/article/pii/S0048969719316006?casa_token=ZFaM-0L783kAAAAA:qBBUnQs3DbEWCFJ4epxfShs91GjOyyyk16xQxXT2mT2YZ2IXDklWZONMLR9z8KlLAGLQ3nytqzs" \l "bb0135); [Zeng et al., 2015](https://www.sciencedirect.com/science/article/pii/S0048969719316006?casa_token=ZFaM-0L783kAAAAA:qBBUnQs3DbEWCFJ4epxfShs91GjOyyyk16xQxXT2mT2YZ2IXDklWZONMLR9z8KlLAGLQ3nytqzs" \l "bb0310)), megacities (Beijing, Shanghai, Guangzhou, Tianjin, Chongqing) ([Wei and Zhao, 2009](https://www.sciencedirect.com/science/article/pii/S0048969719316006?casa_token=ZFaM-0L783kAAAAA:qBBUnQs3DbEWCFJ4epxfShs91GjOyyyk16xQxXT2mT2YZ2IXDklWZONMLR9z8KlLAGLQ3nytqzs" \l "bb0270)), the South Jiangsu region ([Ma et al., 2008](https://www.sciencedirect.com/science/article/pii/S0048969719316006?casa_token=ZFaM-0L783kAAAAA:qBBUnQs3DbEWCFJ4epxfShs91GjOyyyk16xQxXT2mT2YZ2IXDklWZONMLR9z8KlLAGLQ3nytqzs" \l "bb0195)), and the Yangtze River Economic Belt ([Yue et al., 2016](https://www.sciencedirect.com/science/article/pii/S0048969719316006?casa_token=ZFaM-0L783kAAAAA:qBBUnQs3DbEWCFJ4epxfShs91GjOyyyk16xQxXT2mT2YZ2IXDklWZONMLR9z8KlLAGLQ3nytqzs" \l "bb0305)).(Li and Li, 2019)

Compared with the rich literature on urban sprawl in Western countries, relatively little is known of the driving factors, processes, and future trends of urban sprawl in China (Wang et al., 2020)

There are two parts for China's urban sprawl: urban decentralization (the creation of development zones and new towns) and urban renewal (infrastructural changes to existing urban fabrics). One is urban expansion and growth towards to periphery areas [[5](https://www.sciencedirect.com/science/article/pii/S0038012118303495?casa_token=SNgocS29sY4AAAAA:oM4Pik0mkQuGnTo9NRkgK5X9ZVLViANVxtCa1Qt55JU1IhhU0HA_X1cOCZQdgM_fDf3hF9eXooE" \l "bib5)], and the other is internal reorganization for transformation of urban operation and structural functions with [land use pattern](https://www.sciencedirect.com/topics/economics-econometrics-and-finance/land-use-pattern). These two parts are interrelated. 中国的城市扩张有两个部分：城市分散化（建立开发区和新城镇）和城市更新（对现有城市结构进行基础设施改造）。一个是城市向周边地区的扩张和增长[5]，另一个是城市运行和结构功能与土地利用模式转型的内部重组。这两部分是相互关联的。

The urban construction enter the stock age in China in the past few years according to

Accurately identifying the urban–rural fringe can help to integrated urban–rural development planning, especially in metropolitan region. Among the various case studies to identify the urban–rural fringe, land use degree and impervious surface area are widely used. However, both indexes are only focused on land development size, resulting in coarse identifying results.(Peng et al., 2020)

Although the urban fringe is an objective regional entity, the transition and complexity of the fringe itself, as well as the dynamicity and fuzzification of the boundary lead to a long-term debate on the scope division of the urban fringe in academia, and it is difficult to form a unified theory and method. In early foreign studies, it is more common to divide the marginal area based on experience(Dong et al., 2022). 虽然城市边缘区是一个客观的区域实体，但由于边缘区本身的过渡性和复杂性，以及边界的动态性和模糊性，导致学术界对城市边缘区的范围划分长期争论不休，难以形成统一的理论和方法。在早期的国外研究中，比较普遍的做法是根据经验来划分边缘区

In the contrast in the developed countries the fringe area development hardly neglects any of the three perspectives of the sustainability as the cities are already developed in every aspect that the fringe area development does not require to decrease and decentralize the pressure of the mother city. So the fringe area development in developed countries is more likely policy oriented whereas in south-east Asian context it is more likely depends on the nature and characteristics of the mother city. . This paper aims how far is it applicable to induce the SDGs in the fringe areas in Indian scenario so that it may draw sustainability in these metropolitan cities as well as in the fringe area.(Howlader and Sarkar, 2020)

与此相反，在发达国家，边缘地区的发展几乎没有忽视可持续发展的三个方面，因为城市在各方面都已经很发达，边缘地区的发展不需要减少和分散母城的压力。因此，发达国家的边缘地区发展更可能是以政策为导向，而在东南亚，它更可能取决于母城的性质和特点。. 本文旨在探讨在印度的情况下，可持续发展目标在多大程度上适用于边缘地区，以便在这些大都市和边缘地区获得可持续性。

However it is noticeable that in most of the cases the fringe area development in this region is basically focused to cope up with the present scenario; either focuses on social or economic or environmental benefit. But to achieve the SDG it should be focused on these three perspectives equally.

然而，值得注意的是，在大多数情况下，该地区的边缘地区发展基本上集中在应对当前情况;要么关注社会或经济或环境效益。但要实现可持续发展目标，就应该平等地关注这三个方面。

provide opportunities for access to the open countryside for the urban population; to provide opportunities for outdoor sport and outdoor recreation near urban areas; to retain attractive landscapes, and enhance landscapes, near to where people live; to improve damaged and derelict land around towns; to secure nature conservation interest; and to retain land in agricultural, forestry and related uses. Significantly, little emphasis was placed on amenity values of Green Belts

为城市人口提供进入开阔乡村的机会；为城市地区附近的户外运动和户外娱乐提供机会；保留有吸引力的景观，并加强人们居住地附近的景观；改善城镇周围被破坏和废弃的土地；确保自然保护的利益；以及保留农业、林业和相关用途的土地。值得注意的是，很少有人强调绿化带的舒适性价值。

Plans and initiatives that are spatially variable, focusing on scale, connecting local spatial agendas with broader agendas, and viewing the fringe in a wider subregional and regional context. In particular, any amendment to Green Belt policy should recognize the strategic needs and importance of rural–urban fringes, should ensure that ‘policy control’ is guided by strategic thinking (a ‘vision’ for the fringe), and should avoid the past mistake of seeing fringes merely as buffers, disconnected to nearby urban and rural areas;

计划和倡议在空间上是可变的，注重规模，将地方空间议程与更广泛的议程联系起来，并在更广泛的次区域和区域范围内看待边缘地带。特别是，对绿化带政策的任何修正都应认识到城乡边缘地区的战略需求和重要性，应确保 "政策控制 "以战略思维（边缘地区的 "愿景"）为指导，并应避免过去将边缘地区仅仅视为缓冲区，与附近城市和农村地区脱节的错误。

assigning to the fringe and the green infrastructure the status of a municipality, or assigning land ownership and stewardship to a community land trust. 给予边缘地区和绿色基础设施以市政当局的地位，或 将土地所有权和管理权分配给社区土地信托基金。

National spatial plan

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The study of the vulnerability of ecosystems and climate change has been a significant research direction in most ecological and environmental studies during the past several decades. The changes of ecological environment could threaten to shift vegetation, disrupting ecosystems, reducing biodiversity and even damaging human well-being(Gonzalez et al., 2010).

关注生态转变和气候变化是近年来公众的一大热门话题。

Panel on Climate Change (IPCC) pointed out that global greenhouse gas emissions rose by 70 percent due to human activities in the content of climate change topic from 1970 to 2004(Programme, 2009). Many experts considered that with the rapid development of urbanization, the world may experience potentially dangerous in climate and environmental change. It could have a significant impact on our environment, economies, and societies(Graham, 2009).

Most experts agree that over the next few decades, the world will undergo potentially dangerous changes in climate, which will have a significant impact on almost every aspect of our environment, economies and societies. 大多数专家同意，在未来几十年里，世界将经历潜在的危险的气候变化，这将对我们的环境、经济和社会的几乎每个方面产生重大影响。

而在生态环境问题上

At the same time,

与此同时，城市蔓延的现象时有发生，根据XXXX指出，世界，而XXX认为亚洲，中国城市蔓延更是。与此同时产生的社会生态问题，是不容忽略的

the built environment has a severe impact on the natural ecosystems

It is also important to note that, human activities in the built environment do contribute to loss of biodiversity affecting the ability of the ecosystem to support living organism(Pedersen Zari, 2012)

人类在建筑环境中的活动确实导致了生物多样性的丧失，影响了生态系统支持生物体的能力

it is a causal factor in rising sea levels, increased occurrence of severe weather events, food shortages, changing patterns of disease, severe water shortages and the loss of tropical forests.

由此可知，城市的发展会与生态问题产生一定程度程度的冲突，其中处于城市化进程中的发展中国家更是不容忽视其中的可持续发展问题

城市边缘区位于XXX，是XX中心。在其中两方面问题的冲突更加剧烈

可持续发展议程提出： 在中国，相关会议指出绿水XXXX。所以在XXX图中更是需要遵循XX要求发展城市化