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Review

Review on the Application of Nature-Based Solutions in Urban Forest Planning and Sustainable Management

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Abstract: Despite growing recognition of nature-based solutions (NBS), there remains a research gap in understanding their implementation in urban areas, which poses a significant challenge for urban forest development. Therefore, our paper aims to explore the intersection of NBS with urban forests (UF), identify current barriers, propose strategies to maximize the potential of urban forests as nature-based solutions (UF-NBS) in effectively improving the resilience of urban forests, and enhance the service capacity of urban forest ecosystems. To achieve our objective, we conducted a comprehensive analysis that included a bibliometric review to summarize the evolution of the UF-NBS literature and classify UF-NBS types for the first time. Subsequently, we identified and organized current challenges faced by UF-NBS. Additionally, we proposed an original technological framework system for urban forest development based on NBS principles. The results show the significance of UF-NBS for enhancing urban resilience and human wellbeing, with multiple successful implementations in both China and Europe, validating their effectiveness. However, the implementation of UF-NBS faces several challenges, including inadequate financing, the gap between scientific knowledge and practical implementation, the absence of region-specific information, and the need for interdisciplinary collaboration. This study contributes to establishing a scientific theoretical basis for integrating UF and NBS and provides a systematic approach for decision-makers in urban forest management. Future research should focus on exploring the integration of UF within the NBS framework and prioritize knowledge sharing, international cooperation, and education initiatives to promote the global adoption of UF-NBS and address pressing urban challenges.

Keywords: nature-based solutions; urban forest; sustainable management; Citespace; bibliometric analysis; green spaces; urban resilience; human wellbeing

Citation: Zhao, J.; Davies, C.; Veal, C.; Xu, C.; Zhang, X.; Yu, F. Review on the Application of Nature-Based Solutions in Urban Forest Planning and Sustainable Management. *Forests* **2024**, *15*, 727. https://doi.org/10.3390/f15040727

Academic Editor: Mike McKinney

Received: 1 March 2024
Revised: 5 April 2024
Accepted: 19 April 2024
Published: 21 April 2024

1. Introduction

At the beginning of the 21st century, urban areas faced increasing global social, economic and environmental problems. Population growth, urbanization, and climate change are particularly concerning issues [1–3]. The United Nations forecasts that urban areas will accommodate 68% of the world's population by 2050 [4]. Furthermore, metropolitan regions are experiencing growth and expansion [5]. The ongoing process of urbanization is causing various interconnected pressures, including the densification of built-up regions and the loss or degradation of natural habitats [6]. Additionally, climate change is leading to an unprecedented increase in extreme climatic events, such as heat waves, flooding, and droughts [6], as well as rising ocean levels [7]. All these challenges can significantly impact the resilience of cities and the wellbeing of their inhabitants [1,5]. To address the challenges of the current Anthropocene, both individuals and cities urgently need efficient and effective solutions [5].

Nature-based solutions (NBS) encompass effective and adaptive actions directed at the protection, sustainable management, and restoration of natural or improved ecosystems, thereby addressing societal challenges and delivering benefits for human wellbeing and biodiversity [8]. Urban forests (UF) are an important part of urban ecosystems and act as an active green infrastructure (GI) [9–11]. They play a crucial role in addressing climate change [4], enhancing the quality of the urban ecological environment, providing ecological wellbeing beneficial for the physical and mental health of the public [12], and improving the resilience and recovery capacity of urban ecosystems [13]. Therefore, urban forests, as an integral part of nature-based solutions [14], have a significant impact on both the resilience of urban ecosystems [15] and the resilience and function of urban forests themselves in providing ecosystem services (ES) [16].

However, urban forest ecosystems are particularly fragile and exposed to considerable risk [17] due to the impact of urbanization on climate change [18], the presence of urban forests in diverse and unpredictable urban landscapes [14], and the inherent fragmentation of the urban forest landscape [15]. More than half of the plant species in urban regions are already exceeding their tolerance for present climate conditions [17]. It is predicted that by 2050, over 70% of plant species will be at risk of extreme heat and drought events in urban settings [17]. The vulnerability of urban forests has a significant negative impact on the enhancement of ecosystem service values [19]. NBS is an essential approach to enhancing ecosystem services [1]. Thus, employing NBS in the planning and management of resilient urban forests offers multiple benefits, including enhancing public engagement with nature and ensuring the sustainable provision of high-quality ecosystem services [20].

Despite growing recognition of NBS, there remains a research gap in understanding their implementation in urban areas, posing a challenge in urban forest development. In light of these challenges, our paper aims to explore the intersection of NBS with urban forests and identify current barriers through a comprehensive review of the existing literature. Our goal is to maximize the potential of urban forests as nature-based solutions (UF-NBS) in effectively improving the resilience of urban forests and enhancing the service capacity of urban forest ecosystems.

To achieve this goal, we conducted a bibliometric analysis to systematically summarize the development of UF-NBS articles over time. Within the framework of NBS, we thoroughly classified and summarized the types of UF-NBS for the first time. Next, we brought together and organized current challenges facing UF-NBS. Finally, we provided valuable information on future research and applications of UF-NBS. Additionally, we presented an original technological framework system for the development of urban forests based on NBS.

In the context of climate change and urbanization, this study will establish a scientific theoretical basis for integrating urban forests and nature-based solutions in research, provide a systematic approach for decision-makers in urban forest management, and emphasize the importance of UF-NBS in enhancing urban resilience and human wellbeing.

2. The Importance of Urban Forests in Nature-Based Solutions for Urban Ecosystems

Urban forests (UF) are defined as networks consisting of all woodlands, groups of trees, and individual trees located in urban and peri-urban areas, such as forests, street trees, trees in parks and gardens, and trees in derelict corners [21]. In contrast, ecosystem services (ES) emphasize the ecological functions of UF that are directly experienced, used, or employed to generate distinct quantifiable benefits for humans [22,23]. These include supporting services, such as soil formation and photosynthesis, that maintain the conditions for life on earth; provisioning services such as food and timber; and regulating services such as climate change and water quality as well as cultural services such as recreational and spiritual benefits [24]. On the other hand, green infrastructure (GI) refers to a strategically planned network of high-quality natural, semi-natural, and cultivated regions designed and managed to deliver various ES and protect biodiversity [21,25,26]. Moreover, UF serves as the foundation of GI, connecting rural and urban areas and enhancing a city's environmental influence [21].

The United Nations Environment Assembly (UNEA-5) defined the NBS as "actions to protect, conserve, restore, sustainably use and manage natural or modified terrestrial, freshwater, coastal and marine ecosystems which address social, economic and environmental challenges effectively and adaptively, while simultaneously providing human wellbeing, ecosystem services, resilience and biodiversity benefits" [27].

Urban forestry, with its well-established and effective set of practices and methods for implementing NBS [28,29], is highly suitable for playing a key role in achieving the ultimate objectives of urban NBS [23]. Moreover, urban forest planning and management align effectively with a nature-based solutions framework because trees offer a diverse range of services to our communities [30]. Urban forests as nature-based solutions (UF-NBS) are a subset of nature-based solutions (NBS), as highlighted by the Clearing House H2020 initiative [31]. It highlights the significance of tree-based urban ecosystems [14] in promoting human health, wellbeing, and biodiversity [32,33]. UF-NBS is recognized as a cost-effective and locally adaptable systemic intervention to provide environmental, social, and economic benefits [28,32,34,35]. UF-NBS has a close connection with urban forests as a spatial entity [32,36,37] and actions related to the expansion, protection, and maintenance of urban forests [14]. UF-NBS, as a spatial entity, encompasses various elements, including urban forests, tree clusters, specific types such as street trees or promenades, and trees located in urban parks or gardens, with the spatial context of these UF-NBS deemed relevant [14]. Particularly noteworthy is the incorporation of urban green spaces (UGS) within this framework, emphasizing the potential for UF-NBS to be tree-dominated urban ecosystems [38]. UF-NBS actions encompass tree planting, afforestation, reforestation, and monitoring of trees and forests [14]. Hence, UF-NBS has the capacity to deliver diverse benefits by providing ecosystem services, including the regulation of air quality, the provision of food and water, and the potential for restoration and recreation.

In China, various Top-Down UF-NBS actions have been implemented, such as the National Forest City initiative and the Beijing Plain Area Afforestation Program. The National Forest City initiative in China, which began in 2004, promotes UF-NBS as a key strategy for achieving sustainable urbanization and serves as a global exemplar for innovative development approaches. By 2022, 218 cities in 27 provinces were given the prestigious title of "The National Forest City", while more than 440 cities are actively engaged in greening initiatives to attain this recognition [39]. The Beijing Plain Area Afforestation Program (BPAP), initiated by the municipal government in Beijing in 2012, demonstrates effective top-down UF-NBS planning, offering a model applicable to rapidly urbanizing cities with limited land for urban greenspace. BPAP successfully increased forest coverage from 14.8% in 2011 to 25% in 2015 by planting over 70,000 hectares of forest with a survival rate exceeding 95%, making it an impressive afforestation project in high-density urbanized area [40].

Moreover, there are some innovative UF-NBS projects currently taking place throughout Europe [41]. The Barcelona Nature Plan is a decade-long UF-NBS initiative aimed at enhancing and expanding green spaces and biodiversity in Barcelona. The objective is to achieve an increase of 1 square meter of urban greenery per resident by 2030, a total of 160 hectares [41,42]. Barcelona's efficient management of green infrastructure, particularly through this Plan, has resulted in the city being awarded the designation of 'European Forest City 2022' by the European Forest Institute [43,44]. ForestaMi, a UF-NBS initiative in Milan, was established in 2018 with the objective of planting three million trees by 2030, aiming to transform the city into one of the greenest in Italy. Currently, with 427,475 trees already planted, ForestaMi seeks to enhance living conditions and mitigate the impacts of climate change [45]. Bankside Urban Forest, launched in 2007 in one of London's oldest and most historic areas, integrates forest ecology into streets and spaces to enhance public spaces for people and wildlife, increasing neighborhood resilience and greenery. Since its start in 2007, this UF-NBS action has successfully completed more than 25 projects, planted over 250 trees, expanded the green cover in the local neighborhood by over 1000 m^2, and enhanced over 10,000 m^2 of public space in the area [46].

3. Status of Nature-Based Solutions Applications in Urban Forest Development

3.1. Quantitative Analysis of the UF-NBS Literature

The timezone of keywords can reflect the knowledge evolution process of UF-NBS, clearly illustrating the changes and mutual influences of research hotspots [47,48].

In this section, the literature visualization analysis method is used to collect and analyze data. Firstly, we collected data by retrieving English literature on NBS and UF-NBS from the Web of Science (WOS) Core Collection, using the following keywords: "nature-based solutions" OR "nature-based-solutions" OR "nature based solutions" OR "nature-based solution" OR "nature-based-solution" OR "nature based solution". The time range was set from 1 January 2000 to 31 December 2021. A total of 22,981 papers were obtained. Further refinement of the search results included selecting document type "articles" and language "English." After reading titles, abstracts, and author keywords to exclude irrelevant literature, 837 documents were obtained. Among the 837 NBS papers, 275 relevant UF-NBS papers were selected based on keywords such as "urban forest", "urban tree", "urban green space", "urban park", "urban garden", "street tree", and "(blue) green infrastructure". After reviewing the titles, abstracts, and removing any duplicates, 275 documents related to urban forests/urban trees/urban parks/urban gardens/urban green spaces/street trees/(blue) green infrastructure were selected as the dataset for UF-NBS analysis.

Furthermore, literature visualization analysis was conducted using Citespace 5.8.R3 software as the research tool. Developed by Dr. Chaomei Chen of Drexel University, Citespace is a scientific literature analysis software based on Java language [47]. The software is used to draw the timezone of keyword diagrams. Finally, the timezone of keywords diagrams was visually analyzed based on the theory of literature visualization analysis [49–52], resulting in the following findings.

In the context of NBS research, studies related to urban forests have evolved through three main stages (Figure 1). During Stage 1 (2016–2017), the research primarily operated at a macro-level of UF-NBS. This phase was characterized by a focus on critical areas such as ecosystem services and green infrastructure, both playing pivotal roles in enhancing urban resilience and sustainability. The initial phase of UF-NBS led to the creation of extensive conceptual concepts that had a significant influence. Significantly, certain research directions established during this phase, particularly those related to air quality, health, and green space, have continued to attract attention. In Stage 2 (2018–2019), the research paradigm of UF-NBS experienced a transition toward the meso level. This phase prominently concentrated on exploring facets related to public health and wellbeing, delving into topics such as accessibility to green spaces and environmental justice. During Stage 3 (2020–2021), the research orientation shifted toward microscopic investigation, focusing on elements such as air particulate matter and nitrogen dioxide, illustrating a profound assessment at the molecular level. This reflects significant advancements in the development of the UF-NBS field, highlighting the essential role of urban forests in mitigating challenges associated with climate change and urbanization.

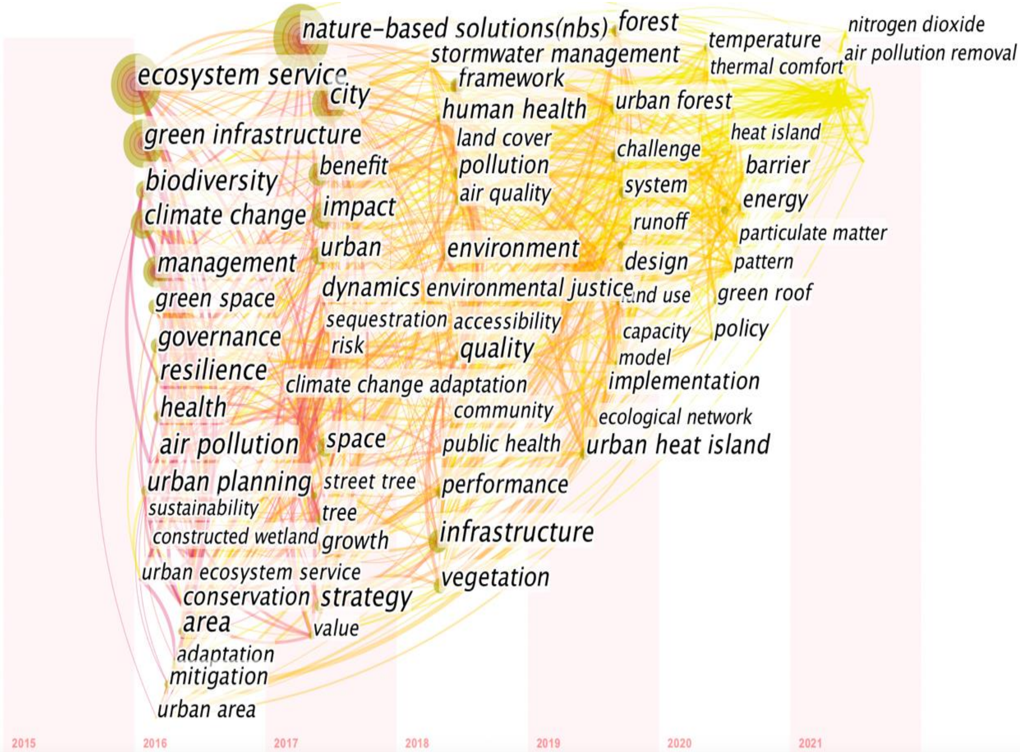

Figure 1. Timezone of keywords in UF-NBS research. Derived from unpublished master's thesis (Jiajia Zhao, 2022 [53]).

3.2. Qualitative Analysis of UF-NBS Typology

Eggermont et al. proposed three distinct types of NBS [54]. Type 1 consists of no or minimal intervention in ecosystems, aiming to maintain or improve the delivery of a range of ES both inside and outside of these conserved ecosystems, such as protection of mangroves and the establishment of marine protected areas [55]. Type 2 refers to the definition and implementation of management methods that develop sustainable and multifunctional ecosystems and landscapes, whether they are extensively or intensively managed. This approach aims to enhance the delivery of selected ecosystem services compared to what could be achieved through more traditional interventions, such as innovative planning of agricultural landscapes and promoting diversity in tree species and genetics. Type 3 involves the active management of ecosystems by highly invasive methods or even the creation of new ecosystems, such as artificial ecosystems like green walls and green roofs, and thus, they are the most "visible" solutions [32].

We used the categorization principles mentioned above and followed a hierarchical structure proposed by Castellar [36]. To classify UF-NBS actions into their respective NBS types, we included examples from different sources [8,14,32,54,56]. The technological measures of each action, along with their corresponding functionalities and the urban challenges they address, are summarized in Table 1. Furthermore, with reference to the 12 challenges that can be addressed by NBS proposed by Dumitru et al. [32], we categorize the main challenges that can be addressed by UF-NBS based on the functions provided by UF-NBS (Table 1).

Table 1. UF-NBS primary technical measures, corresponding functions, and key challenges are addressed in various NBS context categories.

NBS Typology	UF-NBS Actions	UF-NBS Activities	UF-NBS Functions	Main Challenges Addressed	Reference
Type 1	UF-NBS Planning	• Strategies Short- and long-term urban tree-planting and stewardship goals A roadmap for implementation and monitoring • Principles Species selection Spatial configuration Site selection Match trees to their planting sites	• Increase biodiversity • Maximize the urban cooling effect • Improve air quality • Reduce stormwater runoff • Increase carbon storage • Improve the forest sustainability • Improve human health and wellbeing	Climate resilience Water management Green space management Biodiversity enhancement Air quality Health and wellbeing	[24,30,57–68]
	UF-NBS Conservation	Create and preserve natural habitats Ecological corridor construction and optimization	• Prevent biodiversity loss • Promote ecological connectivity • Nature conservation	Green space management Biodiversity enhancement	[65,69,70]
Type 2	UF-NBS Management	• Adjustment Species adjustment Structural adjustment Density adjustment Color patch adjustment • Monitoring Tree monitoring Tree watering Tree pruning Tree grading Tree rejuvenation Tree removal Weeding Maintain suitable site conditions • Other Soil improvement Understory vegetation management Pest management Source control of pollution	• Increase canopy cover • Increase species diversity • Increase tree sizes • Improve carbon sequestration • Provide stopover habitat for birds • Improve environmental justice • Build resilient city • Mitigate climate change	Climate resilience Green space management Biodiversity enhancement Air quality Social justice and social cohesion Health and wellbeing	[30,57,71–83]
Type 3	UF-NBS Creation	• Planting Afforestation Reforestation	• Increase urban tree cover • Increase carbon sink • Provide ecosystem services • Mitigate climate change	Climate resilience Water management Air quality Place regeneration Social justice and social cohesion Health and wellbeing	[30,61–64,83–91]
		• Spatial Units Urban parks and gardens Botanical gardens Orchards Hedges/shrubs/green/fences Street trees	• Enhance canopy cover • Provide shade • Support sustainable cities • Improve human health and wellbeing • Support people's connection with trees • Improve environmental equity • Build resilience		[5,60,68,92–98]
		• Technological Units Green wall Green facade Vegetated pergola Vegetated grid pave Green roof Green alley	• Place greenery without occupying street space • Enhance urban environment • Improve urban biodiversity • Habitat provision for insects • Carbon sequestration • Mitigate heat island effect • Stormwater management • Improve buildings performance • Enhance human wellbeing		[99–116]

In Type 1 NBS, the main focus of UF-NBS actions is primarily on the aspects of planning and conservation. The UF-NBS planning actions involve the creation of strategies, such as the establishment of long-term and short-term plans and goals for urban tree planting and management [57], as well as roadmaps for carrying out and monitoring these plans [58]. The implementation process is guided by principles that take into account factors such as the selection of species, allocation of space, determination of location, and identification of suitable locations for tree planting. By implementing these initial measures, the groundwork can be established for the effective urban implementation of UF-NBS in subsequent phases, while simultaneously fulfilling various functions. In terms of ecological functions, a varied species composition boosts urban biodiversity [59], while a carefully designed spatial arrangement optimizes the cooling effect of urban forests [60], enhancing local air quality, decreasing surface runoff [61], and increasing carbon storage [30,62–64]. Essentially, this leads to improved forest sustainability [65], and ultimately, a better environmental quality in the city [66], which has a positive effect on human health and wellbeing [24,67,68]. An effective planning methodology can efficiently tackle six urban challenges: climate resilience, water management, green space management, biodiversity enhancement, air quality, and health and wellbeing. Additionally, UF-NBS conservation involves establishing and preserving natural habitats and refuges, along with optimizing the construction of ecological corridors. This is essential for preventing biodiversity loss [69], promoting ecological connectivity [65], and contributing to nature conservation [70]. Thus, the primary challenges addressed by UF-NBS conservation action include green space management and biodiversity enhancement.

In Type 2 NBS, the primary action of UF-NBS is management, which involves the activities of adjustment and monitoring. Adjustment activities encompass species adjustment, tree species replanting, structural adjustment and optimization, density adjustment, and color patch adjustment. Monitoring activities include forest monitoring, tree monitoring, tree watering, tree pruning, tree grading, tree rejuvenation, tree removal, weeding, and maintaining suitable site conditions [57,71–73]. In addition, other measures involve soil improvement, understory vegetation management, pest management, and source control of pollution. The three aspects of management activities can bring various benefits to different levels. To begin with, improving the health and sustainability of trees includes augmenting the canopy cover [57,74], increasing species diversity [75], and promoting the growth of larger trees [76], as well as improving the ability of carbon sequestration and storage [77]. Furthermore, promoting diversity in various aspects entails factors such as protecting biodiversity [30], encouraging the presence of different bird species and endangered species in urban areas, and creating stopover habitats for bird species during their migratory journeys [78–80]. Ultimately, a more resilient city can be achieved through the enhancement of environmental justice [30,81], the implementation of an efficient city-focused tool for climate change mitigation [62], and the promotion of more ecological services [82]. Therefore, urban challenges such as climate resilience, green space management, biodiversity enhancement, air quality, social justice and cohesion, as well as health and wellbeing, could be addressed.

In Type3 NBS, UF-NBS creation primarily involves three categories. The first category is planting, which includes afforestation, reforestation, and urban tree planting. Its primary function is to increase forest cover rates, especially by enhancing urban tree cover in cities [61,83–88], and serve as a carbon sink by fixing and storing carbon [30,62–64]. Additionally, it provides various ecosystem services [89] and contributes to mitigating climate change [90,91].

The second category, referred to as spatial units, includes urban parks and gardens, botanical gardens, orchards, hedges, shrubs, greens, fences, and street trees. These elements primarily contribute to enhancing canopy cover [92], providing shade [60], supporting sustainable cities and communities [5,68,93], improving human health and wellbeing, fostering people's sense of connection with and appreciation for trees [94], and promoting environmental justice [95–97], ultimately contributing to urban resilience [98].

The third category consists of technological units, encompassing green walls, green facades, living walls, vegetated pergolas, vegetated grid paves, green roofs, and green alleys.

These units primarily serve the purpose of placing greenery in urban areas without occupying street space and enhancing the urban environment [99]. They also play a crucial role in promoting urban biodiversity [100–102], creating habitats for insects [103], sequestering carbon, improving air quality [104–107], reducing temperature [106], mitigating the heat island effect [108–111], managing stormwater [112], enhancing building performance [113], and ultimately improving citizens' quality of life and wellbeing [114–116]. As a result, the creation of UF-NBS can address the following challenges: climate resilience, water management, air quality, place regeneration, social justice, and social cohesion, as well as health and wellbeing.

4. Key Challenges in Urban Forests as Nature-Based Solutions Research and Implementation

The lack of adequate finance is a major challenge in the development of NBS and UF-NBS [117]. First of all, due to the often long-term and spatially constrained nature of the benefits associated with these solutions [6,118–120], uncertainty exists regarding the values that an NBS can deliver [29]. Consequently, this uncertainty may impose financial pressures on government departments [121]. In addition, the absence of public funding for NBS in urban settings is also linked to restricted municipal budget flexibility and insufficient monetary transfers to the local level, resulting in financial constraints for municipalities and low levels of public investment in NBS [122,123]. Therefore, it is essential to assess their value from a long-term perspective and diversify funding opportunities for NBS and UF-NBS research. In particular, local governments need a long-term perspective on funding to ensure stability, reduce uncertainty, and facilitate voluntary action for sustainable transition [105]. Moreover, strengthening collaboration between the government and the private sector and broadening the sources of funding is key [123,124]. This approach not only brings in the expertise and financial support of the private sector but also combines the government's top-down governance model with the flexibility of the private sector [125], which is key in demonstrating the potential and value of NBS in promoting economic prosperity and human wellbeing [126]. Moreover, the participation of private actors facilitates a more effective distribution of risks associated with long-term illiquid investments in infrastructure [127]. Another significant issue is that current methods for valuing and accounting, used to assess and quantify the benefits resulting from NBS interventions, are deemed inadequate [123,128]. This insufficiency complicates the conversion of NBS benefits into monetary terms, leading to inadequate investment and excessive exploitation of natural resources [129,130]. Therefore, there is a need to concentrate on formulating evaluation frameworks that consider the variety and duration of benefits in investment decision making. Enhanced accounting techniques, encompassing a range of benefits offered by NBS, are anticipated to boost their capacity for generating money [123]. Moreover, the ideas of natural capital (accounting) and ecosystem service supply have the potential to enhance the capacity of financial decision-makers to allocate funds toward NBS by offering a transparent accounting framework for expressing the benefits of NBS [131].

The gap between scientific knowledge and practical implementation significantly hinders the efficient utilization of UF-NBS [132–135]. While the theoretical foundation of NBS is well-established, its practical application, especially in urban forests, remains underdeveloped [23]. Additionally, NBS, as a novel approach within complicated socio-ecological systems [6], suffers from a lack of comprehensive understanding, leading to uncertainty in implementation procedures and associated benefits [117,136]. Currently, the primary knowledge source is from the academic domain [137], with insufficient evidence on development, implementation, and management processes [117]. This limitation notably impedes public acceptance [138]. Hence, there is a critical need to effectively communicate the importance of NBS and UF-NBS to government officials and the public [23]. Consequently, developing easily understandable instructions for UF-NBS that align with public expectations and implementing them in practical settings is essential [23].

The efficient use of UF-NBS may face obstacles due to the absence of region-specific information, which might affect the implementation of strategies. Therefore, it is essential to incorporate an understanding of local circumstances when considering these approaches [34,131,139–142], avoiding one-size-fits-all solutions [140,143] and breaking path dependence [117,141,144]. Concurrently, another significant challenge is establishing effective partnerships among stakeholders [142], especially between local governments and communities [145]. Local citizens play a pivotal role in enhancing the development and management of NBS, particularly in 'tailoring solutions to local context', with their invaluable knowledge significantly improving the chances of achieving successful outcomes [146]. Additionally, collaborating with local organizations, especially community groups, not only fosters trust but also promotes responsible ecosystem management and the acquisition of social knowledge, which are crucial for increasing socioecological resilience [90,125]. Moreover, the practical viability of UF-NBS theory relies on its integration into workable governance frameworks [147]. However, there is a lack of comprehensive stakeholder research, resulting in an inadequate understanding of policy and planning [148]. Furthermore, the governance framework for UF-NBS is currently under development as it is a relatively new idea [149]. Therefore, the main objective at this stage is to combine existing theoretical knowledge with practical project fundamentals [29], systematically identifying the significant challenges in implementing UF-NBS, particularly at the governance level.

The successful implementation of NBS and UF-NBS also needs the simultaneous solution of social, political, economic, and scientific issues across various actor groups [150,151]. Nevertheless, it has been observed that the field of urban forestry, especially in university programs, has weaknesses in incorporating sociology/anthropology, economics, engineering, and public affairs/public policy disciplines [152]. More importantly, urban forestry and urban forestry syllabuses noticeably do not have essential concepts derived from the social sciences [152]. Similarly, practitioners also need to incorporate different types and systems of knowledge and values when designing and implementing NBS, including various aspects of urban management, biodiversity, governance, and social innovation within a socio-ecological system [151,153]. By doing so, the aim is to ensure that these solutions are comprehensible and acceptable to a broad spectrum of stakeholders [29,146,151]. Furthermore, the lack of qualitative research methods connected to UF-NBS suggests a limited comprehension of human–nature relationships [154–156]. This may be attributed to the fact that qualitative methodologies do not always yield findings that can be applied to the broader population. Their application is lengthy and thus expensive when compared to their quantitative counterparts [156]. To gain a more comprehensive understanding, it is recommended to incorporate qualitative research approaches alongside quantitative methods [154,155,157,158]. Meanwhile, institutional fragmentation, also known as 'sectoral silos,' represents a significant obstacle [117]. Various departments within an organization typically work based on their unique vision, regulations, and responsibilities and utilize their specialized terminology [146]. Thus, developing a common comprehension of NBS/UF-NBS and their benefits is crucial for successful partnerships [125].

5. Suggestions and Future Prospects for Urban Forest Nature-Based Solution Development

5.1. Suggestions

By incorporating the hierarchical classification of NBS proposed by Castellar et al. [36], we developed an initial technical framework system for urban forest development based on NBS (Figure 2).

This framework integrates the concept of NBS into the development of UF, aiming to create a forest city that addresses the needs of the public, the environment, and the economy in the face of climate change, considering natural resources, urban hazards, and land use. Our approach aims to enhance multiple ecosystem services provided by the UF-NBS, following the principle of naturalism. Depending on the various categories of urban forests, we will implement appropriate technical measures during different phases of construction, maintenance, and operation. For instance, firstly, during the construction phase, we will consider factors such as the choice of tree species, spatial arrangement, and site selection. Next to that, at the management and maintenance stage, our focus will be on effectively managing and maintaining the urban forest based on aspects such as tree health, public safety, and ornamental features. Finally, over the UF operation period, the primary objective should be managing the overall scale of the forest, its landscape, and the vegetation and litter in the understory. In this way, we aim to improve the quality of existing urban forest and its management based on the principles of NBS, creating a more resilient city that respects and adapts to nature, fostering a harmonious relationship between humans and the natural environment.

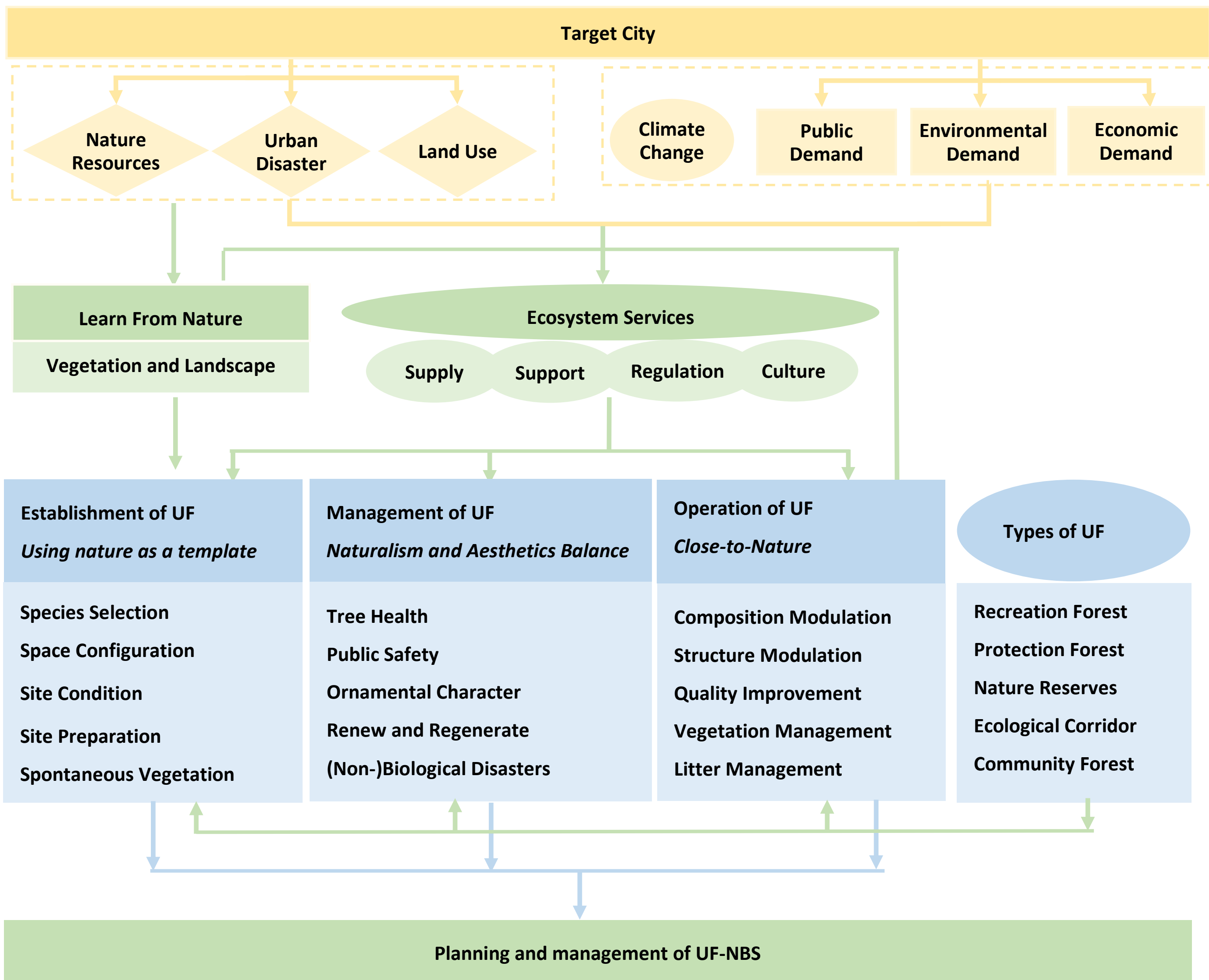

Figure 2. Technological framework for UF development based on NBS. Adapted from unpublished master's thesis (Jiajia Zhao, 2022 [53]).

5.2. Future Prospects

While there has been a noticeable increase in research on the theory and practice of NBS, fewer studies have specifically delved into the context of urban forests within the realm of NBS. To effectively implement urban forests as NBS in cities, there is a need for further exploration into the current status, issues, and future trends of urban forests within the framework of urban NBS studies. Simultaneously, the UF-NBS research domain is currently expanding and has the potential to include landscape architecture, urban planning, and other design-related sub-disciplines. In the future, the focus should be on promoting sustainable development by enhancing green spaces in cities, improving urban ecosystems, increasing ecological services and benefits, and ensuring human wellbeing and health [159]. Therefore, it is crucial to develop mechanisms and technologies to facilitate the sharing of knowledge and create dedicated platforms for exchanging experiences related to UF-NBS. These platforms, whether limited to specific regions or worldwide, are designed to facilitate the sharing of ideas, collect feedback, address problems quickly, and create a comprehensive database of knowledge in the long term [160]. In addition, this approach has the capacity to attract investment and broaden funding opportunities [125]. Moreover, it is essential to create customized educational and training initiatives focused on NBS and UF-NBS to cater to the needs of various stakeholders, including professionals and the general public. These programs should provide not only appropriate education but also employ diverse communication channels, such as newspapers, television, radio, and the Internet, to convey information, foster public comprehension of concepts, and promote acceptance of new terminologies [138].

The concepts, ideas, and methods of NBS and UF-NBS are currently being explored, and there is still a need to discuss and define its measures [54]. It is important to further study the fundamental characteristics of NBS measures, enhance the coordination and integration of NBS at urban scales, improve the effectiveness and sustainability of the UF-NBS framework [161], and promote scientific standards and guidelines to guide practice. Engaging in the global UF-NBS initiative through international cooperation and simultaneously crafting localized outcomes based on the distinctive features of different regions and adapts them to local conditions [161]. Additionally, future studies need to incorporate the principles, methods, and international experiences of UF-NBS into the development of urban forests and ecological environmental protection [162,163]. At the same time, there is a need to enhance the education system for sharing knowledge about this innovative concept, foster greater collaboration within the region, establish an effective management framework, advance the integration of national case studies with urban forest development, and facilitate the establishment of a global community united in the pursuit of a shared future through international cooperation in the field of NBS [164].

6. Conclusions

In conclusion, this study conducted a comprehensive analysis of the UF-NBS literature, identifying key trends, classifications, and challenges in the field. The findings highlight the significance of urban forests as nature-based solutions for enhancing urban resilience and human wellbeing, with multiple successful implementations in both China and Europe validating their effectiveness. However, the implementation of UF-NBS faces several challenges, including inadequate financing, the gap between scientific knowledge and practical implementation, the absence of region-specific information, and the need for interdisciplinary collaboration. Addressing these challenges is crucial for advancing the effectiveness of UF-NBS initiatives. The proposed technological framework for UF development provides a foundation for future research and implementation efforts. Future research should focus on continuing to explore the integration of urban forests within the NBS framework and to prioritize knowledge sharing, international cooperation, and education initiatives to promote the global adoption of UF-NBS and address pressing urban challenges.

Author Contributions: Conceptualization, J.Z. and C.X.; methodology, J.Z., C.X. and X.Z.; software, J.Z.; validation, J.Z., C.X. and X.Z.; formal analysis, J.Z., C.X. and X.Z.; investigation, J.Z.; resources, C.X., X.Z., C.D., C.V. and F.Y.; data curation, J.Z., C.X. and X.Z.; writing—original draft preparation, J.Z.; writing—review and editing, C.X., X.Z., C.D., C.V. and F.Y.; visualization, J.Z., C.X., X.Z., C.D. and C.V.; supervision, C.X. and X.Z.; project administration, X.Z. and F.Y.; funding acquisition, C.X and X.Z. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by the "National Key Research and Development Program of China: Green Urbanization across China and Europe: Collaborative Research on Key Technological Advances in Urban Forests, grant number 2021YFE0193200-3" and "European Union's Horizon 2020 Research and Innovation Program: CLEARING HOUSE-Collaborative Learning in Research, Information sharing, and Governance on How Urban tree-based solutions support Sino. European urban futures, grant number 821242".

Data Availability Statement: The data presented in this study are available on request from the corresponding author.

Conflicts of Interest: The authors declare no conflicts of interest.

References

1. Bush, J.; Doyon, A. Building Urban Resilience with Nature-Based Solutions: How Can Urban Planning Contribute? *Cities* **2019**, *95*, 102483. [CrossRef]
2. Vasenev, V.; Dovletyarova, E.A.; Veretelnikova, I.; Calfapietra, C.; Cheng, Z.; Fatiev, M.; Valentini, R. Smart and Sustainable Cities: From Environmental Threats Towards Nature Based Solutions and Sustainable Management. In *Green Technologies and Infrastructure to Enhance Urban Ecosystem Services*; Vasenev, V., Dovletyarova, E., Eds.; Springer International Publishing: Cham, Switzerland, 2020; pp. 1–3. ISBN 978-3-030-16091-3.
3. Davies, C.; Chen, W.Y.; Sanesi, G.; Lafortezza, R. The European Union roadmap for implementing nature-based solutions: A review. *Environ. Sci. Policy* **2021**, *121*, 49–67. [CrossRef]
4. UN DESA. 68% of the World Population Projected to Live in Urban Areas by 2050, Says UN. Available online: https://www.un.org/development/desa/en/news/population/2018-revision-of-world-urbanization-prospects.html (accessed on 19 March 2024).
5. Turner-Skoff, J.B.; Cavender, N. The Benefits of Trees for Livable and Sustainable Communities. *Plants People Planet* **2019**, *1*, 323–335. [CrossRef]
6. Kabisch, N.; Frantzeskaki, N.; Pauleit, S.; Naumann, S.; Davis, M.; Artmann, M.; Haase, D.; Knapp, S.; Korn, H.; Stadler, J.; et al. Nature-Based Solutions to Climate Change Mitigation and Adaptation in Urban Areas: Perspectives on Indicators, Knowledge Gaps, Barriers, and Opportunities for Action. *Ecol. Soc.* **2016**, *21*, 39. [CrossRef]
7. Goudie, A.S. (Ed.) *The Human Impact on the Natural Environment: Past, Present and Future*, 7th ed.; Wiley-Blackwell: Chicester, UK, 2013; ISBN 9781118576571.
8. Cohen-Shacham, E.; Walters, G.; Janzen, C.; Maginnis, S. (Eds.) *Nature-Based Solutions to Address Global Societal Challenges*; IUCN International Union for Conservation of Nature: Gland, Switzerland, 2016; ISBN 978-2-8317-1812-5.
9. Wang, C.; Peng, Z.; Tao, K. Characteristic and development of urban forest in China. *Chin. J. Ecol.* **2004**, *23*, 88–92.
10. Pitman, S.D.; Daniels, C.B.; Ely, M.E. Green Infrastructure as Life Support: Urban Nature and Climate Change. *Trans. R. Soc. S. Aust.* **2015**, *139*, 97–112. [CrossRef]
11. Dorst, H.; van der Jagt, A.; Raven, R.; Runhaar, H. Urban Greening through Nature-Based Solutions—Key Characteristics of an Emerging Concept. *Sustain. Cities Soc.* **2019**, *49*, 101620. [CrossRef]
12. Solomou, A.D.; Topalidou, E.T.; Germani, R.; Argiri, A.; Karetsos, G. Importance, Utilization and Health of Urban Forests: A Review. *Not. Bot. Horti Agrobot.* **2018**, *47*, 10–16. [CrossRef]
13. Kong, X.; Zhang, X.; Xu, C.; Hauer, R.J. Review on Urban Forests and Trees as Nature-Based Solutions over 5 Years. *Forests* **2021**, *12*, 1453. [CrossRef]
14. Scheuer, S.; Jache, J.; Kičić, M.; Wellmann, T.; Wolff, M.; Haase, D. A Trait-Based Typification of Urban Forests as Nature-Based Solutions. *Urban For. Urban Green.* **2022**, *78*, 127780. [CrossRef]
15. Steenberg, J.W.N.; Millward, A.A.; Nowak, D.J.; Robinson, P.J.; Ellis, A. Forecasting Urban Forest Ecosystem Structure, Function, and Vulnerability. *Environ. Manag.* **2017**, *59*, 373–392. [CrossRef]
16. Dobbs, C.; Escobedo, F.J.; Zipperer, W.C. A Framework for Developing Urban Forest Ecosystem Services and Goods Indicators. *Landsc. Urban Plan.* **2011**, *99*, 196–206. [CrossRef]
17. Esperon-Rodriguez, M.; Tjoelker, M.G.; Lenoir, J.; Baumgartner, J.B.; Beaumont, L.J.; Nipperess, D.A.; Power, S.A.; Richard, B.; Rymer, P.D.; Gallagher, R.V. Climate Change Increases Global Risk to Urban Forests. *Nat. Clim. Change* **2022**, *12*, 950–955. [CrossRef]
18. Kalnay, E.; Cai, M. Impact of Urbanization and Land-Use Change on Climate. *Nature* **2003**, *423*, 528–531. [CrossRef] [PubMed]
19. McPhearson, T.; Andersson, E.; Elmqvist, T.; Frantzeskaki, N. Resilience of and through Urban Ecosystem Services. *Ecosyst. Serv.* **2015**, *12*, 152–156. [CrossRef]
20. Ma, S.; Wang, H.-Y.; Zhang, X.; Wang, L.-J.; Jiang, J. A Nature-Based Solution in Forest Management to Improve Ecosystem Services and Mitigate Their Trade-Offs. *J. Clean. Prod.* **2022**, *351*, 131557. [CrossRef]
21. Salbitano, F.; Borelli, S.; Conigliaro, M.; Chen, Y. *Guidelines on Urban and Peri-Urban Forestry*; FAO Forestry Paper; Food and Agriculture Organization of the United Nations: Rome, Italy, 2016; ISBN 978-92-5-109442-6.
22. Escobedo, F.J.; Kroeger, T.; Wagner, J.E. Urban Forests and Pollution Mitigation: Analyzing Ecosystem Services and Disservices. *Environ. Pollut.* **2011**, *159*, 2078–2087. [CrossRef]

23. Escobedo, F.J.; Giannico, V.; Jim, C.Y.; Sanesi, G.; Lafortezza, R. Urban Forests, Ecosystem Services, Green Infrastructure and Nature-Based Solutions: Nexus or Evolving Metaphors? *Urban For. Urban Green.* **2019**, *37*, 3–12. [CrossRef]
24. *Ecosystems and Human Well-Being: Synthesis*; Millennium Ecosystem Assessment (Program) (Ed.) Island Press: Washington, DC, USA, 2005; ISBN 978-1-59726-040-4.
25. European Commission. *Mapping and Assessment of Ecosystems and Their Services. An Analytical Framework for Ecosystem Assessments under Action 5 of the EU Biodiversity Strategy to 2020*; Technical Report—2013-067; Publications Office of the European Union: Luxembourg, 2013.
26. Lafortezza, R.; Davies, C.; Sanesi, G.; Konijnendijk, C.C. Green Infrastructure as a Tool to Support Spatial Planning in European Urban Regions. *IForest Biogeosciences For.* **2013**, *6*, 102. [CrossRef]
27. UNEP. UN Environment Assembly 5 (UNEA 5.2) Resolutions. Available online: https://www.unep.org/resources/resolutions-treaties-and-decisions/UN-Environment-Assembly-5-2 (accessed on 22 March 2024).
28. European Commission, Directorate General for Research and Innovation. *Towards an EU Research and Innovation Policy Agenda for Nature-Based Solutions & Re-Naturing Cities: Final Report of the Horizon 2020 Expert Group on 'Nature Based Solutions and Re Naturing Cities': (Full Version)*; Publications Office: Luxembourg, 2015.
29. Raymond, C.M.; Frantzeskaki, N.; Kabisch, N.; Berry, P.; Breil, M.; Nita, M.R.; Geneletti, D.; Calfapietra, C. A Framework for Assessing and Implementing the Co-Benefits of Nature-Based Solutions in Urban Areas. *Environ. Sci. Policy* **2017**, *77*, 15–24. [CrossRef]
30. Hutt-Taylor, K.; Ziter, C.D.; Frei, B. What Evidence Exists for the Use of Urban Forest Management in Nature-Based Carbon Solutions and Bird Conservation. A Systematic Map Protocol. *Environ. Evid.* **2022**, *11*, 34. [CrossRef]
31. Clearing House. About Urban-Forests as Nature-Based Solutions. Available online: https://clearinghouseproject.eu/why-trees/ (accessed on 20 October 2023).
32. Dumitru, A.; Wendling, L. *Evaluating the Impact of Nature-Based Solutions: A Handbook for Practitioners*; European Commission (EC): Brussels, Belgium, 2021; ISBN 9789276229612.
33. Berglihn, E.C.; Gómez-Baggethun, E. Ecosystem Services from Urban Forests: The Case of Oslomarka, Norway. *Ecosyst. Serv.* **2021**, *51*, 101358. [CrossRef]
34. Haase, D.; Kabisch, S.; Haase, A.; Andersson, E.; Banzhaf, E.; Baró, F.; Brenck, M.; Fischer, L.K.; Frantzeskaki, N.; Kabisch, N.; et al. Greening Cities—To Be Socially Inclusive? About the Alleged Paradox of Society and Ecology in Cities. *Habitat Int.* **2017**, *64*, 41–48. [CrossRef]
35. Babí Almenar, J.; Elliot, T.; Rugani, B.; Philippe, B.; Navarrete Gutierrez, T.; Sonnemann, G.; Geneletti, D. Nexus between Nature-Based Solutions, Ecosystem Services and Urban Challenges. *Land Use Policy* **2021**, *100*, 104898. [CrossRef]
36. Castellar, J.A.C.; Popartan, L.A.; Pueyo-Ros, J.; Atanasova, N.; Langergraber, G.; Säumel, I.; Corominas, L.; Comas, J.; Acuña, V. Nature-Based Solutions in the Urban Context: Terminology, Classification and Scoring for Urban Challenges and Ecosystem Services. *Sci. Total Environ.* **2021**, *779*, 146237. [CrossRef] [PubMed]
37. Münzinger, M.; Prechtel, N.; Behnisch, M. Mapping the Urban Forest in Detail: From LiDAR Point Clouds to 3D Tree Models. *Urban For. Urban Green.* **2022**, *74*, 127637. [CrossRef]
38. Alós Ortí, M.; Casanelles-Abella, J.; Chiron, F.; Deguines, N.; Hallikma, T.; Jaksi, P.; Kwiatkowska, P.K.; Moretti, M.; Muyshondt, B.; Niinemets, Ü.; et al. Negative Relationship between Woody Species Density and Size of Urban Green Spaces in Seven European Cities. *Urban For. Urban Green.* **2022**, *74*, 127650. [CrossRef]
39. Wang, C.; Jin, J.; Davies, C.; Chen, W.Y. Urban Forests as Nature-Based Solutions: A Comprehensive Overview of the National Forest City Action in China. *Curr. For. Rep.* **2024**, *10*, 119–132. [CrossRef]
40. NetworkNature. Beijing Plain Area Afforestation Programme (BPAP)—Beijing, China. Available online: https://networknature.eu/casestudy/22591 (accessed on 25 March 2024).
41. Uforest. Case Studies. Available online: https://www.uforest.eu/case-studies/ (accessed on 26 March 2024).
42. Ajuntament de Barcelona. The New Nature Plan Seeks to Create an Extra 18.6 Hectares of Greenery by 2023. Available online: https://www.barcelona.cat/infobarcelona/en/tema/environment-and-sustainability/the-new-nature-plan-seeks-to-create-an-extra-18-6-hectares-of-greenery-by-2023-2_1062474.html (accessed on 26 March 2024).
43. Uforest. Urban Forests: Nature in a Small Pot. Available online: https://www.uforest.eu/news/insights/barcelona-green-infrastructure/ (accessed on 26 March 2024).
44. European Forest Institute (EFI). Metropolitan Area of Barcelona Named 'European Forest City 2022'. Available online: https://efi.int/news/metropolitan-area-barcelona-named-european-forest-city-2022-2022-03-24 (accessed on 26 March 2024).
45. Forestami. Available online: https://forestami.org/en/ (accessed on 26 March 2024).
46. Better Bankside. Bankside Urban Forest. Available online: https://betterbankside.co.uk/what-we-do/bankside-urban-forest/ (accessed on 26 March 2024).
47. Chen, C. Science Mapping: A Systematic Review of the Literature. *J. Data Inf. Sci.* **2017**, *2*, 1–40. [CrossRef]
48. Li, J.; Chen, C.M. *CiteSpace: Text Mining and Visualization in Scientific Literature*, 2nd ed.; Capital University of Economics and Business Press: Beijing, China, 2017.
49. Zhang, X.; Wang, J.; Hu, J.; Wang, Y.; Lai, J.; Zhou, L.; Zhu, Y. Visual analysis of surimi research using CiteSpace and bibliometric analysis platform. *Food Sci.* **2023**, *44*, 362–370.
50. Kuhn, T.S. *The Structure of Scientific Revolutions*; University of Chicago Press: Chicago, FL, USA, 1962.

51. Fuchs, S. A Sociological theory of scientific change. *Soc. Forces* **1993**, *71*, 933–953. [CrossRef]
52. Shneider, A.M. Four stages of a scientific discipline: Four types of scientists. *Trends Biochem. Sci.* **2009**, *34*, 217–223. [CrossRef] [PubMed]
53. Zhao, J. Nature-Based Solutions and Its Application in Urban Forest Construction in China. Unpublished. Master's Thesis, Beijing Forestry University, Beijing, China, 2022. (In Chinese).
54. Eggermont, H.; Balian, E.; Azevedo, J.M.N.; Beumer, V.; Brodin, T.; Claudet, J.; Fady, B.; Grube, M.; Keune, H.; Lamarque, P.; et al. Nature-Based Solutions: New Influence for Environmental Management and Research in Europe. *GAIA Ecol. Perspect. Sci. Soc.* **2015**, *24*, 243–248. [CrossRef]
55. Grorud-Colvert, K.; Claudet, J.; Tissot, B.N.; Caselle, J.E.; Carr, M.H.; Day, J.C.; Friedlander, A.M.; Lester, S.E.; de Loma, T.L.; Malone, D.; et al. Marine Protected Area Networks: Assessing Whether the Whole Is Greater than the Sum of Its Parts. *PLoS ONE* **2014**, *9*, e102298. [CrossRef] [PubMed]
56. Somarakis, G.; Stagakis, S.; Chrysoulakis, N. *ThinkNature Nature-Based Solutions Handbook*; European Union: Luxembourg, 2019.
57. Ordóñez, C.; Duinker, P.N. An Analysis of Urban Forest Management Plans in Canada: Implications for Urban Forest Management. *Landsc. Urban Plan.* **2013**, *116*, 36–47. [CrossRef]
58. Grant, A.; Millward, A.A.; Edge, S.; Roman, L.A.; Teelucksingh, C. Where Is Environmental Justice? A Review of US Urban Forest Management Plans. *Urban For. Urban Green.* **2022**, *77*, 127737. [CrossRef]
59. Paquette, A.; Sousa-Silva, R.; Maure, F.; Cameron, E.; Belluau, M.; Messier, C. Praise for Diversity: A Functional Approach to Reduce Risks in Urban Forests. *Urban For. Urban Green.* **2021**, *62*, 127157. [CrossRef]
60. Sousa-Silva, R.; Duflos, M.; Ordóñez Barona, C.; Paquette, A. Keys to Better Planning and Integrating Urban Tree Planting Initiatives. *Landsc. Urban Plan.* **2023**, *231*, 104649. [CrossRef]
61. Roy, S. Anomalies in Australian Municipal Tree Managers' Street-Tree Planting and Species Selection Principles. *Urban For. Urban Green.* **2017**, *24*, 125–133. [CrossRef]
62. Nowak, D.J.; Crane, D.E. Carbon Storage and Sequestration by Urban Trees in the USA. *Environ. Pollut.* **2002**, *116*, 381–389. [CrossRef]
63. Bradfer-Lawrence, T.; Finch, T.; Bradbury, R.B.; Buchanan, G.M.; Midgley, A.; Field, R.H. The Potential Contribution of Terrestrial Nature-Based Solutions to a National 'Net Zero' Climate Target. *J. Appl. Ecol.* **2021**, *58*, 2349–2360. [CrossRef]
64. Di Sacco, A.; Hardwick, K.A.; Blakesley, D.; Brancalion, P.H.S.; Breman, E.; Cecilio Rebola, L.; Chomba, S.; Dixon, K.; Elliott, S.; Ruyonga, G.; et al. Ten Golden Rules for Reforestation to Optimize Carbon Sequestration, Biodiversity Recovery and Livelihood Benefits. *Glob. Change Biol.* **2021**, *27*, 1328–1348. [CrossRef] [PubMed]
65. Zhao, Q.; Xu, D.; Qian, W.; Hu, R.; Chen, X.; Tang, H.; Zhang, C. Ecological and Landscape Perspectives on Urban Forest Planning and Construction: A Case Study in Guangdong-HongKong-Macao Greater Bay Area of China. *Front. Sustain. Cities* **2020**, *2*, 44. [CrossRef]
66. Zhang, C.; Zhao, Q.; Tang, H.; Qian, W.; Su, M.; Pan, L. How Well Do Three Tree Species Adapt to the Urban Environment in Guangdong-Hongkong-Macao Greater Bay Area of China Regarding Their Growth Patterns and Ecosystem Services? *Forests* **2020**, *11*, 420. [CrossRef]
67. Livesley, S.J.; McPherson, G.M.; Calfapietra, C. The Urban Forest and Ecosystem Services: Impacts on Urban Water, Heat, and Pollution Cycles at the Tree, Street, and City Scale. *J. Environ. Qual.* **2016**, *45*, 119–124. [CrossRef] [PubMed]
68. Pataki, D.E.; Alberti, M.; Cadenasso, M.L.; Felson, A.J.; McDonnell, M.J.; Pincetl, S.; Pouyat, R.V.; Setälä, H.; Whitlow, T.H. The Benefits and Limits of Urban Tree Planting for Environmental and Human Health. *Front. Ecol. Evol.* **2021**, *9*, 603757. [CrossRef]
69. Fahrig, L.; Arroyo-Rodríguez, V.; Bennett, J.R.; Boucher-Lalonde, V.; Cazetta, E.; Currie, D.J.; Eigenbrod, F.; Ford, A.T.; Harrison, S.P.; Jaeger, J.A.G.; et al. Is Habitat Fragmentation Bad for Biodiversity? *Biol. Conserv.* **2019**, *230*, 179–186. [CrossRef]
70. Dremel, M.; Goličnik Marušić, B.; Zelnik, I. Defining Natural Habitat Types as Nature-Based Solutions in Urban Planning. *Sustainability* **2023**, *15*, 3708. [CrossRef]
71. Pauleit, S.; Jones, N.; Garcia-Martin, G.; Garcia-Valdecantos, J.L.; Rivière, L.M.; Vidal-Beaudet, L.; Bodson, M.; Randrup, T.B. Tree Establishment Practice in Towns and Cities—Results from a European Survey. *Urban For. Urban Green.* **2002**, *1*, 83–96. [CrossRef]
72. Sæbø, A.; Benedikz, T.; Randrup, T.B. Selection of Trees for Urban Forestry in the Nordic Countries. *Urban For. Urban Green.* **2003**, *2*, 101–114. [CrossRef]
73. Vogt, J.; Gillner, S.; Hofmann, M.; Tharang, A.; Dettmann, S.; Gerstenberg, T.; Schmidt, C.; Gebauer, H.; Van de Riet, K.; Berger, U.; et al. Citree: A Database Supporting Tree Selection for Urban Areas in Temperate Climate. *Landsc. Urban Plan.* **2017**, *157*, 14–25. [CrossRef]
74. American Forests. *Setting Urban Tree Canopy Goals*; American Forests: Washington, DC, USA, 1991; p. 5. Available online: http://www.americanforests.org/resources/urbanforests/treedeficit.php (accessed on 15 December 2023).
75. Miller, R.H.; Miller, R.W. Planting Survival of Selected Street Tree Taxa. *J. Arboric.* **1991**, *17*, 185–191. [CrossRef]
76. Centre for Urban Forest Research (CUFR). *The Large Tree Argument: The Case for Large-Stature Trees vs. Small-Stature Trees*; Centre for Urban Forest Research (CUFR), Pacific Southwest Research Station, United States Department of Agriculture (USDA) Forest Service: Syracuse, NY, USA, 2004; p. 8. Available online: https://www.arborilogical.com/media/2453/benefits-us-forest-service-the-large-tree-argument.pdf (accessed on 15 December 2023).
77. Parsa, V.A.; Salehi, E.; Yavari, A.R.; Bodegom, P.M. van Evaluating the Potential Contribution of Urban Ecosystem Service to Climate Change Mitigation. *Urban Ecosyst.* **2019**, *22*, 989–1006. [CrossRef]

78. Morgenroth, J.; Östberg, J.; Konijnendijk Van Den Bosch, C.; Nielsen, A.B.; Hauer, R.; Sjöman, H.; Chen, W.; Jansson, M. Urban Tree Diversity—Taking Stock and Looking Ahead. *Urban For. Urban Green.* **2016**, *15*, 1–5. [CrossRef]
79. Heyman, E.; Gunnarsson, B.; Dovydavicius, L. *Management of Urban Nature and Its Impact on Bird Ecosystem Services*; Murgui, E., Hedblom, M., Eds.; Springer International Publishing: Cham, Switzerland, 2017; pp. 465–488.
80. Cohen, E.B.; Horton, K.G.; Marra, P.P.; Clipp, H.L.; Farnsworth, A.; Smolinsky, J.A.; Sheldon, D.; Buler, J.J. A Place to Land: Spatiotemporal Drivers of Stopover Habitat Use by Migrating Birds. *Ecol. Lett.* **2021**, *24*, 38–49. [CrossRef]
81. Ordóñez Barona, C.; Eleuterio, A.A.; Vasquez, A.; Devisscher, T.; Baptista, M.D.; Dobbs, C.; Orozco-Aguilar, L.; Meléndez-Ackerman, E. Views of Government and Non-Government Actors on Urban Forest Management and Governance in Ten Latin-American Capital Cities. *Land Use Policy* **2023**, *129*, 106635. [CrossRef]
82. Nowak, D.J.; Crane, D.E.; Stevens, J.C. Air Pollution Removal by Urban Trees and Shrubs in the United States. *Urban For. Urban Green.* **2006**, *4*, 115–123. [CrossRef]
83. Attwell, K. Urban Land Resources and Urban Planting Ð Case Studies from Denmark. *Landsc. Urban Plan.* **2000**, *52*, 145–163. [CrossRef]
84. Yang, J.; McBride, J.; Zhou, J.; Sun, Z. The Urban Forest in Beijing and Its Role in Air Pollution Reduction. *Urban For. Urban Green.* **2005**, *3*, 65–78. [CrossRef]
85. Nielsen, A.B.; Jensen, R.B. Some Visual Aspects of Planting Design and Silviculture across Contemporary Forest Management Paradigms—Perspectives for Urban Afforestation. *Urban For. Urban Green.* **2007**, *6*, 143–158. [CrossRef]
86. Pincetl, S.; Gillespie, T.; Pataki, D.E.; Saatchi, S.; Saphores, J.-D. Urban Tree Planting Programs, Function or Fashion? Los Angeles and Urban Tree Planting Campaigns. *GeoJournal* **2013**, *78*, 475–493. [CrossRef]
87. Young, R.F.; McPherson, E.G. Governing Metropolitan Green Infrastructure in the United States. *Landsc. Urban Plan.* **2013**, *109*, 67–75. [CrossRef]
88. Roy, S.; Davison, A.; Östberg, J. Pragmatic Factors Outweigh Ecosystem Service Goals in Street Tree Selection and Planting in South-East Queensland Cities. *Urban For. Urban Green.* **2017**, *21*, 166–174. [CrossRef]
89. Battisti, L.; Aimar, F.; Giacco, G.; Devecchi, M. Urban Green Development and Resilient Cities: A First Insight into Urban Forest Planning in Italy. *Sustainability* **2023**, *15*, 12085. [CrossRef]
90. Gulsrud, N.M.; Hertzog, K.; Shears, I. Innovative Urban Forestry Governance in Melbourne? Investigating "Green Placemaking" as a Nature-Based Solution. *Environ. Res.* **2018**, *161*, 158–167. [CrossRef] [PubMed]
91. Cheng, Z.; Nitoslawski, S.; Konijnendijk Van Den Bosch, C.; Sheppard, S.; Nesbitt, L.; Girling, C. Alignment of Municipal Climate Change and Urban Forestry Policies: A Canadian Perspective. *Environ. Sci. Policy* **2021**, *122*, 14–24. [CrossRef]
92. Yao, N.; Konijnendijk, C.; Yang, J.; Devisscher, T.; Wirtz, Z.; Jia, L.; Duan, J.; Ma, L. Beijing's 50 Million New Urban Trees: Strategic Governance for Large-Scale Urban Afforestation. *Urban For. Urban Green.* **2019**, *44*, 126392. [CrossRef]
93. Salmond, J.A.; Tadaki, M.; Vardoulakis, S.; Arbuthnott, K.; Coutts, A.; Demuzere, M.; Dirks, K.N.; Heaviside, C.; Lim, S.; Macintyre, H.; et al. Health and Climate Related Ecosystem Services Provided by Street Trees in the Urban Environment. *Environ. Health* **2016**, *15*, S36. [CrossRef] [PubMed]
94. Nguyen, V.D.; Roman, L.A.; Locke, D.H.; Mincey, S.K.; Sanders, J.R.; Smith Fichman, E.; Duran-Mitchell, M.; Tobing, S.L. Branching out to Residential Lands: Missions and Strategies of Five Tree Distribution Programs in the U.S. *Urban For. Urban Green.* **2017**, *22*, 24–35. [CrossRef]
95. Oldfield, E.E.; Warren, R.J.; Felson, A.J.; Bradford, M.A. FORUM: Challenges and Future Directions in Urban Afforestation. *J. Appl. Ecol.* **2013**, *50*, 1169–1177. [CrossRef]
96. Endreny, T.; Sica, F.; Nowak, D. Tree Cover Is Unevenly Distributed Across Cities Globally, With Lowest Levels Near Highway Pollution Sources. *Front. Sustain. Cities* **2020**, *2*, 16. [CrossRef]
97. McDonald, R.I.; Biswas, T.; Sachar, C.; Housman, I.; Boucher, T.M.; Balk, D.; Nowak, D.; Spotswood, E.; Stanley, C.K.; Leyk, S. The Tree Cover and Temperature Disparity in US Urbanized Areas: Quantifying the Association with Income across 5723 Communities. *PLoS ONE* **2021**, *16*, e0249715. [CrossRef] [PubMed]
98. Dobbs, C.; Escobedo, F.J.; Clerici, N.; De La Barrera, F.; Eleuterio, A.A.; MacGregor-Fors, I.; Reyes-Paecke, S.; Vásquez, A.; Zea Camaño, J.D.; Hernández, H.J. Urban Ecosystem Services in Latin America: Mismatch between Global Concepts and Regional Realities? *Urban Ecosyst.* **2019**, *22*, 173–187. [CrossRef]
99. Lundholm, J. Green Roofs and Facades: A Habitat Template Approach. *Urban Habitats* **2006**, *4*, 87–101.
100. Francis, R.A.; Lorimer, J. Urban Reconciliation Ecology: The Potential of Living Roofs and Walls. *J. Environ. Manag.* **2011**, *92*, 1429–1437. [CrossRef] [PubMed]
101. Aljerf, L. Biodiversity Is Key for More Variety for Better Society. *Biodivers. Int. J.* **2017**, *1*, 4–6. [CrossRef]
102. Mayrand, F.; Clergeau, P. Green Roofs and Green Walls for Biodiversity Conservation: A Contribution to Urban Connectivity? *Sustainability* **2018**, *10*, 985. [CrossRef]
103. Manso, M.; Teotónio, I.; Silva, C.M.; Cruz, C.O. Green Roof and Green Wall Benefits and Costs: A Review of the Quantitative Evidence. *Renew. Sustain. Energy Rev.* **2021**, *135*, 110111. [CrossRef]
104. Pugh, T.A.M.; Mackenzie, A.R.; Whyatt, J.D.; Hewitt, C.N. Effectiveness of Green Infrastructure for Improvement of Air Quality in Urban Street Canyons. *Environ. Sci. Technol.* **2012**, *46*, 7692–7699. [CrossRef]
105. Berardi, U.; GhaffarianHoseini, A.; GhaffarianHoseini, A. State-of-the-Art Analysis of the Environmental Benefits of Green Roofs. *Appl. Energy* **2014**, *115*, 411–428. [CrossRef]

106. Vijayaraghavan, K. Green Roofs: A Critical Review on the Role of Components, Benefits, Limitations and Trends. *Renew. Sustain. Energy Rev.* **2016**, *57*, 740–752. [CrossRef]
107. Ascione, F.; De Masi, R.F.; Mastellone, M.; Ruggiero, S.; Vanoli, G.P. Green Walls, a Critical Review: Knowledge Gaps, Design Parameters, Thermal Performances and Multi-Criteria Design Approaches. *Energies* **2020**, *13*, 2296. [CrossRef]
108. Alexandri, E.; Jones, P. Temperature Decreases in an Urban Canyon Due to Green Walls and Green Roofs in Diverse Climates. *Build. Environ.* **2008**, *43*, 480–493. [CrossRef]
109. Susca, T.; Gaffin, S.R.; Dell'Osso, G.R. Positive Effects of Vegetation: Urban Heat Island and Green Roofs. *Environ. Pollut.* **2011**, *159*, 2119–2126. [CrossRef] [PubMed]
110. Gago, E.J.; Roldan, J.; Pacheco-Torres, R.; Ordóñez, J. The City and Urban Heat Islands: A Review of Strategies to Mitigate Adverse Effects. *Renew. Sustain. Energy Rev.* **2013**, *25*, 749–758. [CrossRef]
111. Leal Filho, W.; Echevarria Icaza, L.; Emanche, V.O.; Quasem Al-Amin, A. An Evidence-Based Review of Impacts, Strategies and Tools to Mitigate Urban Heat Islands. *Int. J. Environ. Res. Public Health* **2017**, *14*, 1600. [CrossRef] [PubMed]
112. Schmidt, M. Energy Saving Strategies Through the Greening of Buildings the Example of The Institute of Physics of The Humboldt-University in Berlin-Adlershof. *Forest* **2003**, *29*, 481–486.
113. Manso, M.; Castro-Gomes, J. Green Wall Systems: A Review of Their Characteristics. *Renew. Sustain. Energy Rev.* **2015**, *41*, 863–871. [CrossRef]
114. Kabisch, N.; van den Bosch, M.; Lafortezza, R. The Health Benefits of Nature-Based Solutions to Urbanization Challenges for Children and the Elderly—A Systematic Review. *Environ. Res.* **2017**, *159*, 362–373. [CrossRef]
115. Radić, M.; Brković Dodig, M.; Auer, T. Green Facades and Living Walls—A Review Establishing the Classification of Construction Types and Mapping the Benefits. *Sustainability* **2019**, *11*, 4579. [CrossRef]
116. Agnolio, N.; Molari, M.; Dominici, L.; Comino, E. Outdoor Green Walls: Multi-Perspective Methodology for Assessing Urban Sites Based on Socio-Environmental Aspects. In Proceedings of the New Metropolitan Perspectives; Calabrò, F., Della Spina, L., Piñeira Mantiñán, M.J., Eds.; Springer International Publishing: Cham, Switzerland, 2022; pp. 1905–1915.
117. Sarabi, S.E.; Han, Q.; Romme, A.G.L.; de Vries, B.; Wendling, L. Wendling Key Enablers of and Barriers to the Uptake and Implementation of Nature-Based Solutions in Urban Settings: A Review. *Resources* **2019**, *8*, 121. [CrossRef]
118. Baur, J.W.R.; Tynon, J.F.; Gómez, E. Attitudes about Urban Nature Parks: A Case Study of Users and Nonusers in Portland, Oregon. *Landsc. Urban Plan.* **2013**, *117*, 100–111. [CrossRef]
119. Hansen, R.; Frantzeskaki, N.; McPhearson, T.; Rall, E.; Kabisch, N.; Kaczorowska, A.; Kain, J.-H.; Artmann, M.; Pauleit, S. The Uptake of the Ecosystem Services Concept in Planning Discourses of European and American Cities. *Ecosyst. Serv.* **2015**, *12*, 228–246. [CrossRef]
120. Kabisch, N.; Korn, H.; Stadler, J.; Bonn, A. (Eds.) *Nature-Based Solutions to Climate Change Adaptation in Urban Areas: Linkages between Science, Policy and Practice*; Theory and Practice of Urban Sustainability Transitions; Springer International Publishing: Cham, Switzerland, 2017; ISBN 978-3-319-53750-4.
121. Hoyle, H.; Jorgensen, A.; Warren, P.; Dunnett, N.; Evans, K. "Not in Their Front Yard" The Opportunities and Challenges of Introducing Perennial Urban Meadows: A Local Authority Stakeholder Perspective. *Urban For. Urban Green.* **2017**, *25*, 139–149. [CrossRef]
122. Droste, N.; Schröter-schlaack, C.; Hansjürgens, B.; Zimmermann, H. Implementing Nature-Based Solutions in Urban Areas: Financing and Governance Aspects. In *Nature-Based Solutions to Climate Change Adaptation in Urban Area*; Kabisch, N., Korn, H., Stadler, J., Bonn, A., Eds.; Springer: Berlin/Heidelberg, Germany, 2017; pp. 307–321.
123. Toxopeus, H.; Polzin, F. Reviewing Financing Barriers and Strategies for Urban Nature-Based Solutions. *J. Environ. Manag.* **2021**, *289*, 112371. [CrossRef] [PubMed]
124. Helm, D. Infrastructure and Infrastructure Finance: The Role of the Government and the Private Sector in the Current World. *EIB Pap.* **2010**, *15*, 8–27.
125. Ham, C.; Klimmek, H. Partnerships for Nature-Based Solutions in Urban Areas—Showcasing Successful Examples. In *Nature-Based Solutions to Climate Change Adaptation in Urban Areas: Linkages between Science, Policy and Practice*; Springer: Berlin/Heidelberg, Germany, 2017; pp. 275–289.
126. Frantzeskaki, N. Seven Lessons for Planning Nature-Based Solutions in Cities. *Environ. Sci. Policy* **2019**, *93*, 101–111. [CrossRef]
127. Adair, A.; Berry, J.; McGreal, S.; Deddis, B.; Hirst, S. The Financing of Urban Regeneration. *Land Use Policy* **2000**, *17*, 147–156. [CrossRef]
128. Bockarjova, M.; Botzen, W.J.W.; Koetse, M.J. Economic Valuation of Green and Blue Nature in Cities: A Meta-Analysis. *Ecol. Econ.* **2020**, *169*, 106480. [CrossRef]
129. de Groot, R.; Brander, L.; van der Ploeg, S.; Costanza, R.; Bernard, F.; Braat, L.; Christie, M.; Crossman, N.; Ghermandi, A.; Hein, L.; et al. Global Estimates of the Value of Ecosystems and Their Services in Monetary Units. *Ecosyst. Serv.* **2012**, *1*, 50–61. [CrossRef]
130. Hein, L.; Miller, D.C.; de Groot, R. Payments for Ecosystem Services and the Financing of Global Biodiversity Conservation. *Curr. Opin. Environ. Sustain.* **2013**, *5*, 87–93. [CrossRef]
131. Nesshöver, C.; Assmuth, T.; Irvine, K.N.; Rusch, G.M.; Waylen, K.A.; Delbaere, B.; Haase, D.; Jones-Walters, L.; Keune, H.; Kovacs, E.; et al. The Science, Policy and Practice of Nature-Based Solutions: An Interdisciplinary Perspective. *Sci. Total Environ.* **2017**, *579*, 1215–1227. [CrossRef] [PubMed]

132. Nisbet, M.C.; Mooney, C. The Risks and Advantages of Framing Science-Response. *Science* **2007**, *317*, 1169–1170.
133. Grimm, N.B.; Faeth, S.H.; Golubiewski, N.E.; Redman, C.L.; Wu, J.; Bai, X.; Briggs, J.M. Global Change and the Ecology of Cities. *Science* **2008**, *319*, 756–760. [CrossRef] [PubMed]
134. Briggs, S.V.; Knight, A.T. Science-Policy Interface: Scientific Input Limited. *Science* **2011**, *333*, 696–697. [CrossRef] [PubMed]
135. Wang, Z.; Huang, L.; Xu, M.; Wang, S. Bridging the Science-Practice Gaps in Nature-Based Solutions: A Riverfront Planning in China. *Ambio* **2021**, *50*, 1532–1550. [CrossRef]
136. Krauze, K.; Wagner, I. From Classical Water-Ecosystem Theories to Nature-Based Solutions—Contextualizing Nature-Based Solutions for Sustainable City. *Sci. Total Environ.* **2019**, *655*, 697–706. [CrossRef] [PubMed]
137. Davis, M.; Naumann, S. Making the Case for Sustainable Urban Drainage Systems as a Nature-Based Solution to Urban Flooding. In *Nature-Based Solutions to Climate Change Adaptation in Urban Areas: Linkages between Science, Policy and Practice*; Kabisch, N., Korn, H., Stadler, J., Bonn, A., Eds.; Theory and Practice of Urban Sustainability Transitions; Springer International Publishing: Cham, Switzerland, 2017; pp. 123–137. ISBN 978-3-319-56091-5.
138. Stefania, S.; Pluchinotta, I.; Pagano, A.; Pengal, P.; Cokan, B.; Giordano, R. Assessing Stakeholders' Risk Perception to Promote Nature Based Solutions as Flood Protection Strategies: The Case of the Glinščica River (Slovenia). *Sci. Total Environ.* **2018**, *655*, 188–201. [CrossRef]
139. Mattijssen, T.J.M.; van der Jagt, A.P.N.; Buijs, A.E.; Elands, B.H.M.; Erlwein, S.; Lafortezza, R. The Long-Term Prospects of Citizens Managing Urban Green Space: From Place Making to Place-Keeping? *Urban For. Urban Green.* **2017**, *26*, 78–84. [CrossRef]
140. Colléony, A.; Shwartz, A. Beyond Assuming Co-Benefits in Nature-Based Solutions: A Human-Centered Approach to Optimize Social and Ecological Outcomes for Advancing Sustainable Urban Planning. *Sustainability* **2019**, *11*, 4924. [CrossRef]
141. Davies, C.; Lafortezza, R. Transitional Path to the Adoption of Nature-Based Solutions. *Land Use Policy* **2019**, *80*, 406–409. [CrossRef]
142. Alves, P.B.R.; Djordjevic, S.; Javadi, A.A. Understanding the NEEDS for ACTING: An Integrated Framework for Applying Nature-Based Solutions in Brazil. *Water Sci. Technol.* **2022**, *85*, 987–1010. [CrossRef]
143. Winkel, G.; Lovrić, M.; Muys, B.; Katila, P.; Lundhede, T.; Pecurul, M.; Pettenella, D.; Pipart, N.; Plieninger, T.; Prokofieva, I.; et al. Governing Europe's Forests for Multiple Ecosystem Services: Opportunities, Challenges, and Policy Options. *For. Policy Econ.* **2022**, *145*, 102849. [CrossRef]
144. Santiago Fink, H. Human-Nature for Climate Action: Nature-Based Solutions for Urban Sustainability. *Sustainability* **2016**, *8*, 254. [CrossRef]
145. Bissonnette, J.-F.; Dupras, J.; Messier, C.; Lechowicz, M.; Dagenais, D.; Paquette, A.; Jaeger, J.A.G.; Gonzalez, A. Moving Forward in Implementing Green Infrastructures: Stakeholder Perceptions of Opportunities and Obstacles in a Major North American Metropolitan Area. *Cities* **2018**, *81*, 61–70. [CrossRef]
146. Frantzeskaki, N.; Borgström, S.; Gorissen, L.; Egermann, M.; Ehnert, F. Nature-Based Solutions Accelerating Urban Sustainability Transitions in Cities: Lessons from Dresden, Genk and Stockholm Cities. In *Nature-Based Solutions to Climate Change Adaptation in Urban Areas: Linkages between Science, Policy and Practice*; Kabisch, N., Korn, H., Stadler, J., Bonn, A., Eds.; Theory and Practice of Urban Sustainability Transitions; Springer International Publishing: Cham, Switzerland, 2017; pp. 65–88. ISBN 978-3-319-56091-5.
147. Albert, C.; Brillinger, M.; Guerrero, P.; Gottwald, S.; Henze, J.; Schmidt, S.; Ott, E.; Schröter, B. Planning Nature-Based Solutions: Principles, Steps, and Insights. *Ambio* **2021**, *50*, 1446–1461. [CrossRef] [PubMed]
148. Grace, M.; Balzan, M.; Collier, M.; Geneletti, D.; Tomaskinova, J.; Abela, R.; Borg, D.; Buhagiar, G.; Camilleri, L.; Cardona, M.; et al. Priority Knowledge Needs for Implementing Nature-Based Solutions in the Mediterranean Islands. *Environ. Sci. Policy* **2021**, *116*, 56–68. [CrossRef]
149. Davies, C.; Roitsch, D.; Konczal, A.; Jin, J.; Chen, W.; Basnou, C.; Kronenberg, J.; Krajter Osoic, C. Governance, Institutional and Economic Frameworks for Urban Forests as Nature-Based Solutions (UF-NBS) (D1.4) [R]. H2020 Project CLEARING HOUSE, 2021, Agreement No. 821242. Available online: https://www.croris.hr/crosbi/publikacija/rad-ostalo/792233 (accessed on 17 December 2023).
150. Norton, B.A.; Coutts, A.M.; Livesley, S.J.; Harris, R.J.; Hunter, A.M.; Williams, N.S.G. Planning for Cooler Cities: A Framework to Prioritise Green Infrastructure to Mitigate High Temperatures in Urban Landscapes. *Landsc. Urban Plan.* **2015**, *134*, 127–138. [CrossRef]
151. Maes, J.; Jacobs, S. Nature-Based Solutions for Europe's Sustainable Development. *Conserv. Lett.* **2017**, *10*, 121–124. [CrossRef]
152. Vogt, J.; Fischer, B.C.; Hauer, R.J. Urban Forestry and Arboriculture as Interdisciplinary Environmental Science: Importance and Incorporation of Other Disciplines. *J. Environ. Stud. Sci.* **2016**, *6*, 371–386. [CrossRef]
153. McGinnis, M.D.; Ostrom, E. Social-Ecological System Framework: Initial Changes and Continuing Challenges. *Ecol. Soc.* **2014**, *19*, 30. [CrossRef]
154. McLean, D.; Jensen, R.; Hurd, A. Seeing the Urban Forest Through the Trees: Building Depth Through Qualitative Research. *Arboric. Urban For.* **2007**, *33*, 304–308. [CrossRef]
155. Gundersen, V.S.; Frivold, L.H. Public Preferences for Forest Structures: A Review of Quantitative Surveys from Finland, Norway and Sweden. *Urban For. Urban Green.* **2008**, *7*, 241–258. [CrossRef]
156. Krajter Ostoić, S.; Konijnendijk, C. Exploring Global Scientific Discourses on Urban Forestry. *Urban For. Urban Green.* **2015**, *14*, 129–138. [CrossRef]

157. Tengö, M.; Hill, R.; Malmer, P.; Raymond, C.M.; Spierenburg, M.; Danielsen, F.; Elmqvist, T.; Folke, C. Weaving Knowledge Systems in IPBES, CBD and beyond—Lessons Learned for Sustainability. *Curr. Opin. Environ. Sustain.* **2017**, *26–27*, 17–25. [CrossRef]
158. Kabisch, N.; Stadler, J.; Korn, H.; Bonn, A. Nature-Based Solutions for Societal Goals Under Climate Change in Urban Areas—Synthesis and Ways Forward. In *Nature-Based Solutions to Climate Change Adaptation in Urban Areas: Linkages between Science, Policy and Practice*; Springer: Cham, Switzerland, 2017; pp. 323–336.
159. Luo, M.; Zhou, X.; Zhou, Y. Localization of "Nature-based Solutions" in China. *China Land* **2021**, *1*, 12–15.
160. Faivre, N.; Fritz, M.; Freitas, T.; de Boissezon, B.; Vandewoestijne, S. Nature-Based Solutions in the EU: Innovating with Nature to Address Social, Economic and Environmental Challenges. *Environ. Res.* **2017**, *159*, 509–518. [CrossRef] [PubMed]
161. Zhou, W.Q.; Zhu, J.L. Review on Nature-based Solutions and applications on urban waterlogging mitigation. *Acta Ecol. Sin.* **2022**, *42*, 5137–5151.
162. Luo, M.; Ying, L.; Zhou, Y. Dialysis and Implications of a Global Standard Based on Natural Solutions. *China Land* **2020**, *4*, 9–13.
163. Luo, M.; Zhang, Y.; Zhang, H. Application of nature-based solutions in the Guidelines for Ecological Protection and Restoration of Mountains, Rivers, Forests, Fields, Lakes and Grasses. *China Land* **2020**, *10*, 14–17.
164. Luo, M.; Liu, S.; Zhang, Y. A Preliminary Study on the Priority Areas of Nature-Based Solutions (NBS). *China Land* **2021**, *2*, 4–11.