



Article Planning for Informal Urban Green Spaces in African Cities: Children's Perception and Use in Peri-Urban Areas of Luanda, Angola

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Abstract: Urbanization has placed considerable constraints on the preservation and maintenance of formal green spaces in African cities. This situation has given attention to the potentials of informal green spaces (IGS). While studies on IGS in African cities is only emerging, scholarly and policy attention to children's perceptions and use of IGS within Africa's spatially expansive urbanism is limited. This study explores children's perceptions, use, barriers, willingness, and suggestions for improving IGS in the peri-urban area of Funda in Luanda. Based on semi-structured interviews and focused-group discussions, the study revealed that, while IGS offered different ecosystem services, not all IGS were accessible to children, due to safety concerns, maintenance conditions, and parental restrictions. Children's interest in maintenance activities and suggestions for improving IGS reflected their independent identities, sense of place, and cognitive capacity to contribute to planning their community. The paper submits that the potential role of IGS in Africa's peri-urban areas can be improved by taking into account children's agency and experiential knowledge of community spaces. For this reason, there is a need to recognize and engage children as co-producers of community knowledge and interventions.

Keywords: informal green space; children; perception; peri-urban; Luanda

1. Introduction

Urban development in sub-Saharan Africa has proceeded with little attention to spatial planning and effective land-use management [1,2]. This has contributed to inefficient use of land resources [3,4] and degradation of the urban ecology in most areas of Africa [4,5]. One urban ecological feature which has received much research attention due to the important role they play in promoting human well-being are green spaces [6]. Green spaces comprise the vegetative cover of urban areas [4] and are a vital resource useful for sustainable cities [7]. Green space benefits to urban residents encompass health [8], social [6], and environmental benefits [9].

The discourse on green spaces and the need for maximizing its benefits for urban residents have increased over the years as evidenced in the literature [7,10–15]. Indeed, this interest is instrumental in reaching goal 11, target 7 of the sustainable development goals (SDG), which mentions the preservation and easy accessibility to green spaces for all persons as a way of promoting urban sustainability. Furthermore, the planning and management of urban green spaces (UGS) can also play a phenomenal role in achieving



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Copyright: © 2021 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https:// creativecommons.org/licenses/by/ 4.0/). most of the targets of SDG 15, which seeks to protect, restore, and promote sustainable use of terrestrial ecosystems and reverse land degradation and halt biodiversity loss.

The literature distinguishes between two forms of green spaces—namely formal green spaces (FGS) and informal green spaces (IGS). Formal green spaces include managed greenspaces and conventional parks which are usually maintained for recreational and aesthetic purposes [16–18]. Their use is often restricted to the public and residents may be required to pay for their use. IGS refers to the 'in-between' or 'liminal' vegetated spaces found in cities [16]. They are not formally recognized green spaces or officially managed for purposes such as recreation, gardening, or agriculture. Instead, their use for such purposes is driven by residents' recognition [16,19–21]. Despite the liminal character and low maintenance of IGS, they play an important role for urban residents [19,21] by supplementing the benefits of FGS such as community parks that are in decline in most urban areas due to densification and poor management and maintenance [16].

Much interest and research attention have been given to IGS, especially given its potential in complementing FGS. Studies on IGS thus far have focused on IGS typology and classification [19,22] and perceptions of IGS use and challenges [17,23,24]. Research attention on IGS in Africa is limited with many of the studies in Africa focusing on FGS instead [4,7,10,12–14]. To fill this research gap, this study explores children's perceptions and use of IGS to inform suggestions to improve IGS in peri-urban areas of Luanda, Angola. Children have been identified as frequent users of IGS [25], and thus the intent is to advance understanding of children's attitude towards IGS and how this can be included in future urban green conservation and planning [16–19,26,27]. The focus on children in this study is significant for three reasons. First, children have active engagement with their natural environment, which influences their cognitive, affective, and physical development [28–30]. Thus, understanding the use of IGS by children will offer practical and alternative means of integrating IGS use into policies aimed at fostering children's development and well-being. Second, children have an existence independent of adults, and they have their ways of relating to their environment [31]. Thus, knowledge about children's experiences with their natural environment is relevant for shaping policies on green space planning and management. Third, the study contributes to discourses on the geographies of children, bringing to bear how the cultural and spatial context of Africa's peri-urban areas shape children's unique skills and understanding of their natural environment. In view of this, the study adopted an exploratory approach given the nascent research on IGS in Africa, and it is suggested that findings from this study will inform further studies towards better local planning and management of UGS in peri-urban areas.

This paper is structured in seven sections. Following this introduction, Section 2 presents a literature review of (in)formal green spaces and the relationship between children and UGS. Section 3 presents the study context while Section 4 focuses on the research methodology. In Sections 5 and 6, the study results and discussion are respectively narrated. Finally, the conclusion and policy implications that speak to planning for informal UGS are presented in Section 7.

2. (In)formal Urban Green Space and Children: A Review of the Literature

2.1. Informal Urban Greenspace: Definition and Classification

Urban green spaces (UGS) comprise diverse forms of green elements that together constitute the natural features of the urban built environment. Therefore, any discussion of IGS or its constituent parts must begin with a brief overview of UGS. For starters, UGS are described as vegetated spaces in urban areas including outdoor sports fields, urban gardens, school playgrounds, bushlands, urban forests, among others [32]. Lo and Jim explain that they are located in built-up areas, entailing natural and planted trees, grass, shrubs, and flowers [33]. Strohbach and colleagues offer a broader explanation of UGS as being the sum of all vegetation in and around dense human settlements [34]. Similarly, Chen and Hu assert that 'all land covered by vegetation within the urban environment' qualify as UGS [35]. More recently, scholars have emphasized characteristics such as

accessibility, defining UGS as all unrestricted and restricted open spaces in urban areas mainly covered by vegetation which are directly or indirectly available for use [4].

Urban green spaces, therefore, form part of the urban ecosystem providing different ecosystem services—the benefits that people derive from functioning ecosystems—to urban residents [36]. The ecosystem services from UGS contribute to human well-being through their provisioning, regulatory, cultural, and supporting services [37,38]. Specifically, UGS can produce food (provisional), improve air quality (regulatory services), serve as sites of recreation (cultural services) and also contribute to soil formation and nutrient cycling (supporting services) [39–41]. However, access to the ecosystem services from UGS often correlate to socio-demographic and governance factors and thus varies by socio-spatial characteristics and across urban areas [37,38].

Whether defined in terms of vegetative cover, accessibility or functionality, most scholars agree that UGS have both public and private facets [42]. Thus, public UGS include forests, trees, parks, or allotments that tend to offer a whole range of ecosystem services for the residents of a city [43]. Other examples include botanical gardens, playgrounds, and pockets of (all/part) natural vegetation in possession of public authorities. On the other hand, private UGS include all vegetated areas used as private spaces adjacent to or surrounding dwellings and allotments privately owned and restricted [44,45].

Recent literature on UGS has brought to the fore another important dimension in relation to the idea that green spaces can be formal or informal [12,16,26]. Such studies argue for the need to differentiate specific characteristics of UGS. For instance, the location, management, manner of growth, and state of planning of UGS are implied in the social and financial situation of different inhabited areas of cities [26,46]. Within this framing, formal UGS entail public and private green spaces of natural vegetation or spaces of planted vegetation with better management and planning. Within the green space literature, much has been written about such UGS that have emerged out of formal planning regimes, residential developments, and/or landscapes with some form of formal control or management and mostly situated in more developed contexts [18,47,48].

Another dimension of UGS is the emergent discourse on IGS, which this study emphasizes. Informal green spaces represent another typology within the formality–informality domain of UGS studies [16,44]. However, it remains underexplored in the African context, despite their widespread presence [26]—even in formal urban spaces.

Many scholars view IGS as unplanned vegetation that are not usually considered in the planning and governance of both the urban and ecological spheres [16,26]. For Jorgensen and Tylecote, IGS are vegetated spaces that are 'ambivalent landscapes' due to the lack of clarity about land tenure, conservation, use, and even legitimacy [49]. Such spaces may not be entirely informal but rather a deterioration of formerly planned green spaces. They include various elements such as utility corridors, street verges, vacant lots, waterway embankments, and railway verges that often grow excessively with spontaneous vegetation [20]. They are also usually poorly supervised or managed. While it is difficult to settle on a universal definition of IGS given different geographic and socio-spatial realities, it is possible to understand their nature through identified characteristics in the literature (see Table 1).

Trait	Description	Reference
Liminal	Refers to situations of 'between-ness', hybridity or temporality. They are intermediary or ambiguous spaces that are difficult to categorize: 'loose space'. Boundaries and limits are not clear or breached, as is the divisions between public/private and controlled/neglected are blurred.	[16,50–54]
Ambivalent	They exist within the formality-informality interface—lack of clarity in land tenure, conservation, maintenance regimes, use, regulation, and legitimacy.	[49,55]
Spontaneous	Emerge and grow unchecked and borderless. Presents a solid amount of artificial disarrangement and offhanded vegetation that permeates part or the whole space; often grow excessively with spontaneous vegetation.	[16,20]
Management	Often depends on how people feel about it; the sense of belonging dictates how they are (un)managed: feelings of ownership, cultural beliefs, age, and level of neighbors' surveillance. Usually little to no maintenance at all.	[20,53,56]
Location	Spatially found in 'leftover-spaces' or remnant spaces. Conditioned within the social and the financial situation of the different residential zones they are situated. That is, IGS are directly related to the socio-economic conditions of surrounding residents.	[26,57]
By-products	The outcome of changes: cycles of planning and (re)development of residential settlements. Not necessarily originated from urban decay but result from differences in time as spatial by products of policy or planning neglect.	[19,58]
Fluid	Constantly changing in both form and growth in line with surrounding conditions and contexts.	[59]

Table 1. Characteristics of informal green spaces.

Source: Compiled by the authors.

Additionally, IGS have also been described as 'liminal ecologies' in the sense that culture and nature is broken and separation between private/public, controlled/neglected is not distinguishable [54]. As liminal spaces, IGS are usually confined to the margins of urban spaces, characterized by emergence and flux, fluidity and malleability, non-containment, or seclusion [54]. In addition, Imai intimates that IGS are mainly characterized by interfaces of emergence, informality, and casualness [51]. That is, they are a mixture of purposely planted and opportunistic species even though they may have been deliberatively planned and planted in the first place.

Although IGS are defined by different traits or characteristics, the classification (see Table 2) offered by Rupprecht and Byrne provides the most coherent and comprehensive understanding of the different types of IGS [16]. The classification shows the varying locations where IGS can be found and also indicate their various characteristics or traits. For example, while open camps may relate to vegetation in open spaces, gaps and lots may relate to spontaneous natural growth between walls or at abandoned lots, respectively.

IGS	Examples	Description	Common Substrates
Street verges	Roadside verges, roundabouts, tree rings, informal trails and footpaths	Vegetated area within 5 m from street not in another IGS category; mostly maintained to prevent high and dense vegetation growth other than street trees; public access unrestricted, use restricted.	Soil, gravel, stone, concrete, asphalt
Lots	Vacant lots, abandoned lots	Vegetated lot presently not used for residential or commercial purposes; if maintained, usually vegetation removed to ground cover; public access and use restricted.	Soil, gravel, bricks
Gap	Gap between walls or fences	Vegetated area between two walls, fences or at their base; maintenance can be absent or intense; public access and use often restricted.	Soil, gravel
Railway	Rail tracks, verges, stations	Vegetated area within 10 m adjacent to railway tracks not in another IGS category; usually herbicide maintenance to prevent vegetation encroachment on tracks; public access and use mostly restricted.	Soil, gravel, stone
Brownfields	Landfill, post-use factory grounds, industrial park	Vegetated area presently not used for industrial or commercial purposes; usually no or very infrequent vegetation removal and maintenance; public access and use mostly restricted.	Soil, gravel, concrete, asphalt
Waterside	Rivers, canals, water reservoir edges	Vegetated area within 10 m of water body not in another IGS category; occasional removal of vegetation to maintain flood protection and structural integrity; public access and use often possible with some restrictions.	Soil, stone, concrete, bricks
Structural	Walls, fences, roofs, buildings	Overgrown human artifacts; often vertical; occasional removal of vegetation to maintain structural integrity; public access and use mostly restricted.	Soil, stone, gravel, wood, metal
Microsite	Vegetation in cracks or holes	Vegetation assemblages in cracks, may develop into structural IGS; maintenance can be absent or intense	Deposits, soil, stone, concrete
Power line	Powerline rights of way	Vegetated corridor under and within 25 m of power lines not in another IGS category; vegetation removed periodically to prevent high growth; public access and use mostly unrestricted.	Soil
Kitchen garden	Small farm around a residence	A kitchen garden is where herbs and vegetables are grown around the house for household use. Since early times, a small plot close to the house has been used for growing a variety of vegetables according to the season	Soil
Open Camp	Open spaces	Wide open spaces usually formally covered by grass that constant use or drought make them plan for different ludic kind of activities	Soil

 Table 2. Classification of IGS.

Source: Adapted from ref. [16]. (OA)

Despite their so-called marginality, IGS constitute an important aspect of cities in both the urban north and south as they have enormous potential for urban conservation and preservation of biodiversity [16,20,26]. In addition, IGS offer several benefits such as provisioning (dietary and medicinal), social, mental, and physical health benefits [12]. However, local perceptions, use and attachment to IGS depends on several factors such as feelings of ownership, cultural beliefs, age, level of neighbor's surveillance, and their conditions [53,56].

Unfortunately, poor conditions of IGS and limited integration into urban planning and land use management are widely persistent in cities of the global south, including sub-Saharan Africa [12]. In light of the expansive nature of Africa's urbanization and the alarming rate in the decline of UGS and lack of formal green spaces [1,60], IGS hold potential for improving access to important ecosystem services, especially for the majority of the urban population that are endemically deprived due to colonial and post-colonial planning regimes of urban planning and development [13].

Given the insights from the above literature coupled with the understanding that IGS remains underexplored in sub-Saharan African cities [61], this paper draws on IGS and its potential to complement formal UGS in areas experiencing severe deficits in the distribution and access to quality UGS. It analyses the perceptions and use of IGS in an African urban context by situating the study within the demographic cohort of children. The next section provides a brief review of the literature on children and UGS.

2.2. Children and Urban Green Space Nexus

Urban green spaces, whether formal/informal or public/private, intersect in many ways with the everyday experiences of children in the built environment. Studies show that spending time in natural environments, especially green spaces during childhood, is associated with increased pro-environmental behaviors in adulthood. Indeed, UGS offer several benefits to children in the urban environment [62,63]. According to Sefcik et al., such benefits include higher levels of physical activity and lower incidence of depression, anxiety, and stress among children [15]. Likewise, UGS foster unity and cordial relationships among children, their friends and neighbors. Studies reveal that children's physical, socio-emotional, and cognitive health are positively impacted and developed when there is frequent exposure to nature, including green spaces [64,65]. Thus, the regularity in contact with green spaces minimizes common pediatric health conditions such as attention deficit hyperactivity disorder [65].

Subsequently, understanding how children define, use, and perceive green and blue spaces is vital, especially during the formative stages of their life. For instance, in a study conducted in rural Northwestern Ontario, children perceived nature to be more than just a space with natural elements [66]. To them, nature is a whole community. Their experience is captured through activities that connected them with green spaces and the natural environment in general. They also appreciated the health benefits associated with such exposure. Especially in impoverished urban or peri-urban settlements, green spaces also enhance children's welfare in many ways [30,67]. More recent studies show that the availability of green spaces on school routes boosts children's educational performance as well as enriches their aesthetic appreciation [18,68].

Furthermore, green spaces serve as an essential part of children's lives, although their relationship with them depends on their subjective negative and positive perceptions [69]. Hence, for children to benefit from green spaces in urban areas, the social and physical aspects of these natural environment ought to be safe, secured, and accessible. This is particularly true in developing country contexts, where access to safe natural environments particularly for children in poor urban communities is rarely available [70]. The United Nations Children's Fund considers it the right of children to freely play in parks and open spaces [70]. However, when children perceive green spaces negatively, they withdraw and often spend more time indoors on activities such as video games [30]—depriving them of cognitive, social, and health benefits of access to green spaces or nature. Being deprived of

the natural environment may lead to nature deficit disorder [71] with effects such as low senses, attention difficulties, as well as increased rates of physical and mental illness [72,73]. Hence, conditions that incite children's perceptions of green spaces or natural environment (whether real or imagined) as threatening or places of danger such as crime, violence, poor supervision, and maintenance need to be carefully addressed in urban areas.

Therefore, engaging children's perceptions and use of green spaces provides valuable insights for urban and environmental planning authorities to create child friendly cities [30,74,75]. Fittingly, Hart proposes the 'ladder of children participation' (or ladder of youth participation), where the perceptions and lived experiences of children in the urban environment define and shape urban planning decisions and programs. For Hart, simple activities like children's drawings, mapping, and shared experiences can innovatively direct policy and programs in a manner where children own and direct the process—beyond mere consultation or tokenism. Hart also maintains that ignoring children's experiences in planning tends to create exclusive and threatening urban environments [76,77].

The foregoing literature provides insights on how the availability and access to quality green spaces impact children in many ways—hence the need to integrate their perceptions and experiences in UGS planning. However, the specific literature on children's relationships with IGS in the urban context of Sub-Saharan Africa is not clear. Given that Africa's children population is the highest globally [70], this represents a major research gap. This study therefore picks up this theme in the context of peri-urban Luanda (Angola). The next section presents the study context.

3. Study Context

Angola is located in the southern African region and is bordered to the north by the Republic of Congo, the south by Namibia and Botswana, the east by Zambia, and the west by the Gulf of Guinea. Historically, the country was plagued by approximately three decades of civil war from 1975 to 2002 [78], which fueled massive movement of populations from rural and provincial areas to urban areas, especially Luanda, in search of security and better living conditions. Despite post-war reconstruction and development, especially through large scale housing and economic projects, poverty is still pronounced in the country. Angola's National Statistics Agency [79] reports that 41 percent of the population live below the poverty line (12,181 Kz/month; note that 1 USD = 653.78 Angolan Kwanza according to https://www.morningstar.com/, accessed on 19 May 2021) with 44 percent of the total poor population residing in urban areas.

This study is geographically situated in Luanda province of Angola (Figure 1). Luanda province is located in Angola's northern Atlantic coast, with an area of 2442.60 sq. km. The province is home to Luanda city, Angola's capital and biggest city in terms of population. The area exerts a strong urban primacy, with over 7 million of Angola's 31 million population living in the Luanda province. The massive population movement into Luanda and other major cities without any effective planning response during the civil war is considered one of the main drivers of disorderly physical development in urban and peri-urban areas of Angola [80]. Socio-economic inequality and deprivation are a persistent feature with strong spatial manifestations—that is, there is a clear division between residential areas of the low-income and higher-income in the city. Access to basic but quality urban infrastructure is tied to high income residential quarters whilst poorer areas are faced with irregular employment, erratic wages, and poor access to public infrastructure, and higher incidence of crime and violence [81].



Figure 1. (**A**) Angola in African context; (**B**) Lunda Province in Angola context; (**C**) Funda commune in Cacuaco municipality context; (**D**) Funda commune. Source: Authors' construct.

In terms of urban governance and planning, the Province of Luanda is the main administrative body at the local level responsible for urban planning and development. Within the provincial structure are lower tiers of municipalities (7) and urban districts (6) responsible for administrative functions. Proper planning, as it relates to metropolitan and long-term urban development, is steered by national agencies, the Province, the Institute for Urban Planning and Management, and other local structures. While the city appears to follow a decentralized, multi-polar urban expansion program [82], it is rather a centralized government model that is top-down and state-led that defines planning and development decisions [83,84].

Akin to urban planning in many cities of the global south [1,85], formal planning has not reached the low-income and peri-urban areas of Luanda like the Funda commune. The rapid growth of Lunda and other cities in Angola—ushered in part by the post-independence conflict and rapid expansion of downtown areas and squatted informal settlements (*musseques*)—trailed the provision of urban services and offered limited economic opportunities for urban residents who straddle between opportunities in both the rural and urban economies [80,82,86]. In March 2010, the *Gabinete de Reconstrucao Nacional* (GRN) was commissioned by the government of Angola to lead the efforts on urbanization and reconstruction. To effectively plan Luanda, the Urban Growth Management Plan was prepared in 2000 and later adopted as a law in 2011 as the Presidential Decree 59/11. This law subsequently underpinned different integrated plans aimed at tackling urban expansion and improving urban infrastructure in Luanda [82].

Additionally, urban planning sought to re-envision Lunda through various plans to decentralize the city by creating new cities and industrial poles [87] such as the Luanda Satellite City, which was designed for 890,000 people and Nova Vida, for 30,000 people [88]. Unfortunately, the drive to promote effective planning in Lunda has occasioned concerns for

segregation with limited impacts of planning on low income, informal, and/or peri-urban settlements as they are characterized by unequal access to infrastructure and attention by municipal governments [87,88]. The pursuit of a new socio-spatial configuration as part of a new planning paradigm [82] through traditional master planning amidst weak institutional contexts [89] has meant that alternative strategies such as recognizing IGS as an opportunity to increase access to UGS is missing in urban planning practices.

Even though Luanda province offers a diverse and wonderful green landscape, the location of most green spaces is in the peripheral zones of the province, around 42 km away from urban centers. This imposes accessibility challenges due to long travel distance and a poor transportation system. Existing pockets of green spaces in the urban core date back to the colonial period, mainly in the historical city center [90]. In addition, over the years, green spaces have given way to massive redevelopments in the province, leading to significant declines in availability and accessibility to UGS. A host of large-scale urban redevelopment and housing developments have claimed sustainability only in name—poorly integrated and accommodated better UGS planning especially in low-income areas of the province. Indeed, majority of residents in low-income areas express dissatisfaction with the availability and condition of green spaces [90]. Unsurprisingly, the current Luanda Metropolitan plan—a brainchild of the Presidency—and praised for its comprehensiveness, is yet to translate proposed strategies for ecology into concrete actions.

Drawing on the above urban socio-ecological realities in Luanda province, the current study was conducted in Funda, a peri-urban settlement, considered as a disadvantaged commune in the municipality of Cacuaco. Funda commune is home to 209,387 inhabitants [91]. It is situated approximately 40 km from the historical core of Luanda city. The commune was selected because of its expansive IGS [92]. The Luanda master plan acknowledges the area as the green belt of Luanda. The plan's failure to stress the significance and potential of IGS in the sustainable urban development of the province is a serious cause for concern. This is because the expansive greenery does not necessarily imply significance and barrier free access to local people [90]. It is therefore necessary to engage deeply with resident's perceptions, use, barriers, and suggestions in accommodating IGS.

Funda, and other four urban districts (Kikolo, Cacuaco, Mulenvos Baixo, and Sequele) form the urban core in Cacuaco municipality. Funda commune is known for having piscatory, agricultural, and industrial activities. This attracted many people from other provinces such as Namibe, Huambo, Benguela, and Kwanza-Norte, during the beginning and peak of the civil war. The provision of basic services such as water and sanitation are highly deficient. The Luanda province provides potable water through communal standpipes, but most areas are deprived of it. Sewer and drainage systems are non-existent. The topography of Funda is undulating with sloped terrain. This causes the majority of rainwater and detritus to flow into the Bengo River located at the lower part of the settlement. Most residents rely on the natural environment for basic services.

4. Research Methodology

4.1. Research Approach

This study employed a case study design using qualitative methods [93] by means of in-depth interviews and focus group discussions (FDGs). For ethical considerations, the study was approved by the Architectural and Urban Planning Laboratory of the Graduate School of Engineering, Osaka University and consent sought from the Funda commune to conduct the research at the study area. Oral consent was obtained from all participants, and in case of minors, the consent was from their parents. This aligns with general ethical practice [94,95].

The study commenced with a literature review of UGS with particular emphasis on IGS. In addition, official reports (e.g., population, Luanda Master Plan) were obtained from the Angolan National Statistical Institute and Luanda Urban Planning and Management Institute (LUPMI) and subsequently reviewed.

The field work began with preliminary observation of the study area. The preliminary observations helped establish rapport with local residents and community leaders, who in turn introduced the researcher to municipal staff for consent and support. After the preliminary observation, the study area was divided into four quarters: north, south, east, and west quarters for ease of coverage to aid with IGS location mapping using a Google Earth base map and observation of IGS use and condition by means of a checklist. Observation and mapping were done by two transect walks within the community—the first in the morning and the second late in the afternoon. Given public transport challenges and other security concerns, evening observations could not be carried out after 6:30 PM. Furthermore, visual data were collected by taking photographs with a georeferenced mobile camera to mark locations with reference to specific IGS.

An initial meeting was held with parents where the purpose of the research was discussed. Parents were ensured of research confidentiality, their right to withdraw children from the study without prejudice and informed of the data management and dissemination protocols. All parents contacted consented to the interviews. This situation was probably due to the rapport established with the residents during preliminary observations and the support from the community leaders and municipal staff. To ensure that children participants were sampled across the study area, the researcher contacted parents in each quarter of the community. The first household in each quarter was randomly selected and the parent (usually the mother) contacted to permit the interview of one child within the age of 6 and 12 years enrolled at the elementary school level. Following the first randomly selected interview, snowball sampling was used to contact other parents in each quarter to interview their children. Data collection took place over six weeks between September and October 2019. Interviews were conducted at late afternoon hours on weekdays (between 3 and 5 PM) when children had finished school.

Although there were 40 listed contacts for the interviews, the final set of interviews included 23 respondents. The final sample was informed by the saturation principle in qualitative research—the point at which further interviews yield no additional information and data collection is sufficient for analysis [30,96]. Indeed, evidence from qualitative studies suggest that, in most cases, saturation is achieved at between 6 and 12 interviews [97,98]. Our sample also finds empirical support in qualitative research inquiry in the context of critical postcolonial urban research and knowledge co-production beyond quantitative statistics or quantification of human behavior and perceptions [99–101]. In line with the philosophical underpinnings of qualitative case research [102], this study provides insights for research and planning practices on the neglected subject of children and IGS in Africa's urban dynamics.

Semi-structured interviews were conducted with the 23 children including 13 males and 10 females, between the ages of 6 and 12 years in different grades at the elementary school level in Funda commune (Table 3). This age group was selected because children at this stage are more likely to explore, discover, and learn through their own actions by building up knowledge and perceiving their surroundings based on interactions with the environment [95,103]. The interview guide was adapted from an empirically tested instrument developed by Rupprecht and Bryne [22]. The interview guide was first developed in English and translated into Portuguese.

Code	Gender	Age	Province of Origin	Year of School
Child 1	М	9 years old	Luanda	4
Child 2	F	10 years old	Luanda	4
Child 3	F	9 years old	Luanda	3
Child 4	F	9 years old	Moxico	4
Child 5	F	6 years old	Luanda	1
Child 6	М	8 years old	Luanda	NA
Child 7	М	7 years old	Luanda	2
Child 8	М	10 years old	Huambo	5
Child 9	М	6 years old	Luanda	1
Child 10	F	10 years old	Luanda	5
Child 11	М	6 years old	Luanda	1
Child 12	М	11 years old	Luanda	6
Child 13	F	10 years old	Luanda	5
Child 14	М	7 years old	Benguela	2
Child 15	М	7 years old	Luanda	2
Child 16	F	6 years old	Luanda	1
Child 17	М	10 years old	Benguela	5
Child 18	М	10 years old	Luanda	5
Child 19	М	12 years old	Luanda	6
Child 20	М	11 years old	Luanda	6
Child 21	F	7 years old	Luanda	2
Child 22	F	11 years old	Luanda	5
Child 23	F	6 years old	Luanda	1

Table 3. Background characteristics of respondents.

NA: Child was not formally enrolled in school during the survey.

The interviews gathered children's views about the distribution of IGS, their use and benefits, barriers in accessing IGS, willingness to participate in maintenance activities, and their suggestions for improving IGS in the commune. Interviews lasted an average 35 min and were recorded in Portuguese using an Android voice recorder. All interviews were conducted by the first author with assistance from a local university student—a self-described environmental activist. Transcriptions were reported back to respondents to ensure that their responses were accurately captured [104].

For children to answer more spontaneously and comfortably, FGDs are often a better method as it is effective in expanding the scope of answers and triggering forgotten facts or experiences [105,106]. In this study, the FGDs were carried with three groups of children on two different occasions. The first FGD included 12 children (six boys and six girls) and the second group 11 children (six boys and five girls) and conducted during a weekday in an elementary school compound after school hours (around 2:30 PM). Four participants each were drawn from grades 4–6 with the assistance of class teachers based on the pupil's willingness to join the discussion and their interest in drawing exercises. The second FGD was also held at the elementary school premises with participants drawn from grades 1–5 during weekdays to generate more insights from younger pupils. The third FGD was conducted on a Saturday morning under a tree in the front yard of a parent's house. Participants consisted of thirteen children (seven boys and six girls) based on their responses to semi-structured interviews, their availability for further discussions, and consent from parents. All three FGDs were organized in the form of discussion and drawing

exercises where participants were provided with color pencils, boards, and drawing papers. Discussion points included (i) IGS use around Funda and reasons (ii) drawing competition to illustrate ideas for improving current state of IGS and children's own peer review of illustrations and (iii) perceived benefits of IGS and their constraints. The first author steered the discussion, probed for details, and took notes and photographs without overt influence on participants' opinions.

4.2. Data Analysis

The transcribed data were analyzed using a six-step thematic content analysis [107,108]. Step 1 involved familiarization with the data, reading, and re-reading of the transcripts, and noting down initial ideas. Step 2 comprised coding, which generally involves using words or phrases to assign attributes or interpretative meaning to transcripts to detect patterns or categories. In this study, codes such as fruits, vegetables, water, and animals, among others, were identified from the interviews. Codes were assigned to responses from each interview question. All codes were manually recorded into a database using Microsoft Excel. The codes were reviewed by each author and, where necessary, refined or new codes added. In Step 3, codes were compiled into themes based on patterns and detection of categories. For example, codes such as fruits and vegetables were categorized as food (see Table 4). In Step 4, identified codes were reviewed to achieve data coherence while preserving a clear distinction between themes. For instance, problems children faced in the use of IGS were originally coded variously as animal attacks, robbery, etc. However, these were later recoded as safety concerns to clearly capture inhibiting factors that limited children's use and access to IGS (see Table 5). In doing so, the theme of safety and security became clearly distinct from other barriers such as poor maintenance or parental restrictions. In Step 5, the authors defined, refined, and named the themes as well as selected corresponding verbatim quotes from children's responses. Finally, Step 6 entailed the writing of the results (see Supplementary File for an excerpt of the coding process). The findings from the analysis are presented in the next section.

Benefits	Theme Details	Count
Food	A place where you can get wild fruits and vegetables	15
Recreation	Used as playground	11
	Use for special events and picnics	4
Ecosystem	Source of water for domestic use	2
Carrier and Materia	A place for observing and enjoying nature	6
Scenery and Nature	Provide shade	1
	Serene environment to study	1
Education	Relating things taught in class with what is observed	2
	in IGS	-
	Source of medicinal plants	5
Health	Rest point and place for relaxation	3
	Perceived health benefits	2
Economic	A place where plants and food stuff can be grown	4

Table 4. Children's perceptions of IGS benefits in Funda Commune.

Barriers	Theme Details	Count
	Attack by wild animals	18
	Perceived night-time dangers	2
Safatu concorne	Trees falling	2
Safety concerns	Unavailable streetlight	6
	Crime incidences (kidnapping and robbery)	10
	Stones and pits	1
Hudro motocrological bazarda	Flooding	8
Hydro-meteorological hazards	Bad weather (rainy seasons)	3
Maintenance and Appearance	Place not kept well and untidy	2
	Mosquito bites	1
Health and Medical issues	Poisonous plants	2
Parental restrictions	Parents disallowing children to go alone	5

Table 5. Barriers to children's use of IGS in Funda Commune.

5. Results

5.1. Children's Use and Perceived Benefits of Informal Green Space

In order to understand children's use and perceived benefits from IGS, children in Funda commune were initially asked to identify the location and type of IGS that they utilized. As shown in Figure 2, children use various kinds of IGS, which are widely distributed across the commune—including street verges, riverside, kitchen gardens, lots, open camps, and spontaneous vegetations. Children identified IGS as an important source of fruits such as mangoes which were derived from kitchen gardens or semi-spontaneous vegetation that also served as sources of fresh air and water for domestic purposes (from the river). As one child puts it: *There are many uses of IGS here, for example, fruits such as mango, the vegetables we can get from the kitchen garden and pure air* (Child 4, Female, 9 years old).



Figure 2. Types of IGS in Funda (Authors' field work).

IGS types such as open camps (or open space) and the brownfields served as playgrounds for children. For example, one child noted that *I use the wide-open space for playing football, me and my friends. We also have adventures under the Baobab trees* (Child 8, male, 10 years old). Such spaces provide children the opportunities to meet and interact with each other beyond the natural benefits that IGS offers. Indeed, *even though IGS are not so tidy, they still can be used as recreational spaces* as it offers the opportunity and spaces for children to *meet and play* (Child 9, female, 7 years old). Children's use of IGS in the commune is particularly influenced by the lack of 'formal' parks—17 out of 23 children confirmed this. The main publicly planned park in the community had been closed due to long years of neglect by the municipality. As a result, it was in a deplorable state and colonized by wild vegetation. Overall, responses from the Children in Funda point to a number of benefits to residents as presented in Table 4.

Some children also indicated that IGS provided practical opportunities to better relate to lessons taught at school. According to one child, *anytime I visit these areas I see plants, birds and animals that I am taught in class. It makes the lessons real to me* (Child 20, male, 11 years old). Activities such as bird watching, observing trees and flowers blossom, and the general behavior of plants and animals provided educational benefits to children as well as drew their attention to their health benefits— often affirming the lesson that *healthy and green environment help us live long* (Child 13, female, 10 years old). Children in Funda commune also indicated that IGS such as the river side and spontaneous vegetation provided a serene atmosphere and shading during hot days. Others claimed that some of the plants provided health benefits through their medicinal value—learning this either from parents or teachers at school. One child noted:

I see that these areas [IGS] have plants that can cure diseases. My parents and teacher at school mentioned this. One time they [parents] boiled the leaves of plant [from the lot] to make a drink [tea] for one relative who had fever and he got better in a day or so. So, I think the herbs are good for medicine.

(Child 19, male, 12 years old)

5.2. Barriers in Children's Access to Informal Green Spaces

Despite the use and perceived benefits of IGS in the commune, children encountered barriers that inhibited their access, often due to the safety concerns associated with IGS (Table 5). Specifically, children interviewed alluded to attacks by wild animals, such as crocodiles at the riverside. They also reported crimes like robbery at lots, open camps and spontaneous vegetation as well as recounted incidences where *some children also disappeared or were taken by bad people* (Child 7, male, 7 years old). The safety and security concerns were attributed to lack of streetlights at night and poor maintenance and management of IGS where overgrown bushes and abandoned green spaces tend to become hide outs for criminal and violent activities. Other hazardous conditions in IGS such as stones, thorns, pits, and occasional falling trees and branches posed threats to Children's use of IGS. One child remarked:

Using these areas [IGS] I think of exposure to wild animals. Also, the darkness after sunset, there are no streetlights, so it is dangerous even for adults to visit these places. How can I defend myself if I cannot see?

(Child 2, female, 10 years old)

In addition, flooding and parental restrictions were also cited by children as challenges that inhibited access to the potential benefits of IGS. For example, a nine-year child explained that his *dad says some bad people at the riverside may hurt me if I go there alone so I do not ever go there* (Child 1, male, 9 years old). Similarly, another child lamented the effects of parental restrictions saying *if there is no adult relative around, it means I just stay home* (Child 5, female, 9 years old). During the focus group sessions, participants highlighted how the lack of proper drainage systems leads to heavy inundation of the open camps and lots during the wet season. Here, flooding causes the children to *lose all access to the playgrounds* *and lots, this is the main problem* (Child 7, male 7 years old). Similarly, participants gave vivid accounts of how the IGS have been degraded by adults as *they* [adults] *throw anything around the open spaces. It looks like a landfill. Garbage everywhere, bad smell, we cannot even play there anymore* (Child 22, female, 11 years old). Open spaces and lots, for example, were observed during the field study to host garbage in ways that made IGS inappropriate spaces for children's outdoor activity. These have limited the benefits and use of these spaces by children despite strong desire to interact with these spaces. Table 5 summarizes the key barriers captured from responses that children gave during interviews.

5.3. Children's Willingness to Participate in IGS Maintenance

Given children's awareness of the environment within which they reside, the study inquired about their willingness to participate in activities to maintain or improve the existing conditions of IGS. Generally, the children interviewed showed a strong desire to be part of efforts or initiatives to take care of IGS. In fact, 18 of the 23 children responded in the affirmative that they would be willing to participate in caring for IGS. The reported high interest in IGS stewardship was informed by two reasons. First, children have learned of green stewardship from school lessons and hence consider themselves as stewards of the environment. As one child noted: *Yes, I would! Teacher says we need to be responsible for what we do to nature, and we must not harm the environment* (Child 2, female, 10 years old).

Second, children interviewed considered it fun to be part of efforts to take care of the environment. Nonetheless, their willingness to participate in caring for IGS was dependent on whether *parents would let me join* (Child 22, female, 11 years old) or whether their *parents, siblings or friends will also join in the efforts to maintain the space* [IGS] (Child 20, male, 11 years old).

5.4. Children's Suggestions for Improving IGS

This section captures children's suggestions for improving the existing condition of IGS in Funda commune. Gathered during the FGDs, several but interrelated views were shared which can be grouped under four main themes, namely improving safety conditions, enhancing aesthetics, providing supportive infrastructure, and increasing education and awareness on IGS (Table 6). As the following accounts and drawings illustrate (Figure 3), children's awareness and understanding of how to improve IGS have strong connections with planning and design.

Suggestion	Theme Details	Count
	Police presence at IGS	4
Improved safety conditions	Provision of streetlights at IGS	8
improved safety conditions	Keeping wild animals away	5
	Make conditions safer at IGS	4
	Bringing shops to IGS	6
	Turn the place into a zoo to keep wild animals	4
	Turn the place into a planned park (i.e., formal green space)	10
Enhance aesthetics and conditions of IGS	Tidy and clean the place regularly	6
	Provide waste bins in IGS	3
	Turn some part of IGS into garden	2
	Provide benches and rest point at IGS	4
	Improved roads leading to IGS and making available public transport to facilitate mobility to and from IGS	3
Infrastructure	Provide water facilities	4
	Reduce flooding at IGS (i.e., through provision of drains)	3
Education	Provide public education and sensitization on importance of IGS and why it must be maintained	2

Table 6. Summary of children's suggestions.



Figure 3. Children's illustrated suggestions for improving IGS: (**a**) Provide amenities at IGS sites and (**b**) Green brownfields and prevent animal attacks at river side.

Lights for the streets in general and in all the places we play specially to make it safe. Change the park [abandoned park] we have down there, that has nothing to play with or enjoy anymore. I think adults can take care of animal attacks at the riverside; my mother does not let me even approach the riverside, but I know it is a beautiful venue because I see it when we pass by.

(Child 3, female, 9 years old)

6. Discussion

The findings from this research provides evidence of the perceived benefits and barriers of IGS use among children as well as how children interact with these spaces. It also provides insights into the potential contributions of children in planning and maintaining IGS in African cities, particularly in Funda commune of metropolitan Luanda. Given that Africa's children population is the highest globally, the findings offer implications for engaging children in the management and, specifically, improvement of the conditions of IGS in peri-urban areas of Angola and Africa generally.

First, the study found that IGS offered an alternative to FGS such as urban parks and served as places for sourcing fruits, recreation, and leisure activities. Indeed, children's experiences with and use of IGS enhanced their knowledge of the role of the natural environment to their community and residents. For instance, children in the Funda commune were aware of the ecosystem services provided by IGS including their medicinal and dietary benefits, noting that IGS in their community provided fruits, vegetables and even 'pure air'. Similarly, respondents in IGS studies in urban settings of African [12,44,109,110], European [18,111], Asian [17,19,112], and Oceanian cities [24,26,113,114] were aware of IGS benefits. Again, children reported use of IGS as a place for observing and enjoying nature as well as holding social events and picnics (Table 4) reveal children's attachment and desire to play in such spaces in the community. Such experiences and awareness of IGS often reflect children's agency and ability to develop competence and skills [31] necessary to support planning and management of green spaces in peri-urban areas of African cities.

Furthermore, this study found that children interviewed were able to relate the lessons from class on environment with their interactions with IGS in Funda. Watching animals and plants helped the children make classroom lessons 'real' as some children asserted and enabled them to make connections with the elements of the IGS. This also demonstrates how IGS can help to make the lessons from education systems practical. For this reason, IGS not only offer children the ability to make the lessons about their environment real but also call for teachers to consciously make connections between what is taught in class with the real-life experiences of children, such as their use of IGS. In view of the alarming rate of UGS decline and other planning and management challenges surrounding formal green spaces in African cities [109], IGS which are pervasive in Africa's urban landscape can potentially enhance the educational experiences of children, especially on nature and environment [63].

Another aspect of IGS is its ability to engender play and physical activities among children. In Funda commune, children actively engaged their peers in these spaces for playful activities such as football. Informal green spaces thus serve as critical spaces for sociation. In the absence of formal green spaces, IGS fills the gap in increasing children's access to the potential benefits of green spaces [15,30,67]. This shows that, in peri-urban Luanda, IGS can function as green spaces that children can interact with and allow them to have contact with nature [115]—as IGS are more natural than the tamed and manicured landscapes of formal green spaces [26].

However, children's reported use and perceived benefits of IGS in Funda has its limitations. Ecosystem disservices such as the wild animal attacks, thorns, and potential exposure to poisonous elements in the environment limits children's use of IGS. At the river side in particular, children alluded to the threat of attacks by crocodiles as one reason to avoid such areas. In addition, parental controls as a result of the negative perceptions albeit often true—such as the risk of crime, garbage disposal in open camps, and degraded environments due to the use of such spaces as dumpsites causes parents to exert control and restrictions on their children's use of IGS. This finding corresponds to observations of the 'downsides' of IGS [11] in African cities that create barriers, generate negative perceptions, and lead to withdrawal from such spaces [30]. However, such incidences of parental controls are not confined to African cities, findings from cities such as Brisbane and Sapporo show the role of parents constitute a barrier to children's access to places considered dangerous [24]. Hence, it is imperative that some form of maintenance should be put in place to limit the ecosystem disservices of IGS while enhancing the ecosystem services they offer to children. For instance, while many national parks and hiking systems in the urban north are often wild in nature, they are planned and designed to ensure optimum benefits to users. Similar but adapted principles can be applied to IGS to allow children and adults to make the best use of and benefits from IGS.

This study also reveals the roles that children can play in the creation of child friendly urban communities. The study found that children were interested and willing to engage in activities that aim to maintain, preserve, and sustain IGS in Funda. Through their illustrative suggestions for improving IGS (Figure 3), children pointed to key interventions such as protection from animal attacks, provision of amenities (e.g., benches, rest stops, etc.) and regular clean up exercises. This demonstrates the need to recognize and engage perceptions and 'fresh ideas of children' [116] as an opportunity for child-centered local management of IGS in peri-urban areas. For Africa, children engagement in planning processes is not entrenched in urban planning and management processes. Consequently, as many urban planning and policy frameworks have recognized the need for collaborative and co-productive processes in solving urban problems [101], this finding reminds planners, decisionmakers, and researchers that children are an important cohort that are crucial in creating sustainable and inclusive ecological spaces in peri-urban areas.

Overall, although IGS in Funda generally shares some traits with those found in the global north and south (See Table 1)—such as being spontaneous and poorly managed—they are far from being marginal in the everyday life of children. In the context of structural deficits in the urban built environment, IGS complements the expected benefits and services from formally planned green spaces. Within the purview of children's deep attachment to such spaces, urban planning and management must reflect the realities of how IGS intersect with peri-urban living in a way that supports their integration, planning, and management for improving access to green spaces [7,10,11,13,26].

Given that IGS often lack formal planning recognition [16,19,20] and ignored in UGS planning and management [12,117], collective community efforts are the appropriate mechanism for addressing community concerns in such situations [118–120]. Tapping into

this potential to improve IGS will require utilizing community-based systems to maintain and enhance IGS in the Funda commune. Here, the immense role of community leaders, churches, community volunteer groups, parents, and community schools can be harnessed to manage IGS. These actors can periodically (e.g., monthly) organize maintenance activities for community residents to clean trash in IGS and trim excessive vegetation that can hurt children as they use those spaces. In addition, community IGS management units can be created and coordinated by community leaders for residents to manage specific IGS that are frequented by children. These should be complemented by sensitization initiatives that allow parents and community actors to appreciate the value that children place on IGS. In this way, adults in the community will likely be motivated to ensure that IGS are safe and clean so that their children can benefit from their ecosystem services. The municipal government can also provide lighting infrastructure to make IGS safe at night, provide garbage collection containers or units to support community cleaning and maintenance activities, and erect barriers to restrict the movement of harmful animals in IGS often used by children. Such contribution from the municipal government can, however, be possible if IGS are formally recognized as significant for improving access to UGS in low-income areas of the Cacuaco municipality and mainstreamed into formal planning and management of UGS. All these strategies can contribute to maintaining and preserving IGS, making them attractive to children, and enhance their safety and use by children in the Funda commune.

7. Conclusions

Planning for sustainable and inclusive urban spaces cannot ignore children's experiences and views. Across the varied contextual realities of African cities, the decline in UGS and poor management of existing green spaces, especially for the low-income majority, is common. However, the conspicuous attention to planned UGS has not extended to IGS, in spite of its pervasiveness. This study provides insights of IGS by looking at children's perception and use to inform their local management to enhance their benefits for users, address potential harmful effects, and increase children's interactions with such areas. This is necessary to contribute to the sustainability of African cities.

The study has shown that, in peri-urban Luanda, IGS plays a complementary role in the everyday life of children by serving as sources of food (provisional), playgrounds for recreational activities (socio-cultural), and as a means to connect classroom lessons with nature (educational). Nonetheless, the relationship between IGS and children presents both opportunities and challenges. This invites urban planners and other policymakers to utilize opportunities such as children's' willingness to participate in IGS maintenance and their experiential knowledge to address challenges such as attack by wild animals, potential threats of robbery, and the poor maintenance of IGS. As the first principle, this warrants the need for urban and development plans to include IGS in green space mapping and analysis, in addition to action plans and strategies for their management. Clearly, collaborative and co-production methodologies that consider children as inevitable actors in problematizing, planning, design and implementation, and monitoring of IGS are essential.

By emphasizing the connection between children and IGS, this study also reinforces current understanding of children's attachment to nature. That is, children in Funda have their everyday lives embedded in rather than separated from IGS. In this sense, the study amplifies current discourse in children's geographies and environmental education that argue against child-nature binaries [121,122].

This study offers relevant insights on children's perceptions and use of IGS but should be viewed within the particular context of peri-urban Angola as socio-economic and spatial characteristics as well as institutional contexts of planning vary across cities of the global south. Hence, given the limited scope of the study and that it only focused on children's experiences, more studies that expand residents' profiles, socio-economic attributes and also engage the views of municipal governments and their planners to examine the political and economic aspects of (in)formal green space planning in Angola and other African countries with similar contextual realities are needed. Additionally, participatory and action research that recognizes children's agency should also be considered. Such future studies, coupled with findings from this study, can inform methodological and policy initiatives that improve access to quality UGS in African cities in a way that truly leaves no one behind.

Supplementary Materials: Code book excerpt table is available online at https://www.mdpi.com/ article/10.3390/urbansci5030050/s1, Table S1: Sample Questions and code book excerpt from thematic content analysis.

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References

- Cobbinah, P.B.; Erdiaw-Kwasie, M.; Amoateng, P. Africa's urbanisation: Implications for sustainable development. *Cities* 2015, 47, 62–72. [CrossRef]
- UN-Habitat Urbanization and Development: Emerging Futures. World Cities Report 2016. 2016, p. 247. Available online: http://wcr.unhabitat.org/wp-content/uploads/sites/16/2016/05/WCR-%20Full-Report-2016.pdf (accessed on 20 April 2021).
- Honu, Y.A.K.; Chandy, S.; Gibson, D.J. Occurrence of non-native species deep in natural areas of the Shawnee National Forest, Southern Illinois, USA. *Nat. Areas J.* 2009, 29, 177–187. [CrossRef]
- Mensah, C.A. Destruction of urban green spaces: A problem beyond urbanization in Kumasi city (Ghana). *Am. J. Environ. Prot.* 2014, 3, 1–9. [CrossRef]
- 5. Anderson, P.M.; Okereke, C.; Rudd, A.; Parnell, S. Regional assessment of Africa. In *Urbanization, Biodiversity and Ecosystem Services: Challenges and Opportunities*; Springer: Dordrecht, The Netherlands, 2013; pp. 453–459.
- 6. Groenewegen, P.P.; Van den Berg, A.E.; De Vries, S.; Verheij, R.A. Vitamin G: Effects of green space on health, well-being, and social safety. *BMC Public Health* **2006**, *6*, 149. [CrossRef]
- Adegun, O.B. Green infrastructure in informal unplanned settlements: The case of Kya Sands, Johannesburg. Int. J. Urban Sustain. Dev. 2019, 11, 68–80. [CrossRef]
- 8. Alcock, I.; White, M.P.; Wheeler, B.W.; Fleming, L.E.; Depledge, M.H. Longitudinal effects on mental health of moving to greener and less green urban areas. *Environ. Sci. Technol.* **2014**, *48*, 1247–1255. [CrossRef]
- 9. Shanahan, D.F.; Lin, B.B.; Bush, R.; Gaston, K.J.; Dean, J.H.; Barber, E.; Fuller, R.A. Toward improved public health outcomes from urban nature. *Am. J. Public Health* **2015**, *105*, 470–477. [CrossRef]
- 10. Adegun, O.B. Residents' relationship with green infrastructure in Cosmo City, Johannesburg. J. Urban Int. Res. Placemak. Urban Sustain. 2018, 11, 329–346. [CrossRef]
- 11. Adegun, O.B. When green is grievous: Downsides in human-nature interactions in informal urban settlements. *J. Urban Int. Res. Placemak. Urban Sustain.* **2018**, *11*, 347–361. [CrossRef]
- 12. Adegun, O.B. Green infrastructure in relation to informal urban settlements. J. Arch. Urban 2017, 41, 22–33. [CrossRef]
- 13. Cobbinah, P.B.; Asibey, M.O.; Zuneidu, M.A.; Erdiaw-Kwasie, M. Accommodating green spaces in cities: Perceptions and attitudes in slums. *Cities* 2021, *111*, 103094. [CrossRef]
- 14. Mensah, C.A.; Gough, K.V.; Simon, D. Urban green spaces in growing oil cities: The case of Sekondi-Takoradi Metropolis, Ghana. *Int. Dev. Plan. Rev.* **2018**, *40*, 371–396. [CrossRef]
- 15. Sefcik, J.S.; Hirschman, K.B.; Petrovsky, D.V.; Hodgson, N.A.; Naylor, M.D. Satisfaction With Outdoor Activities Among Northeastern US Newly Enrolled Long-Term Services and Supports Recipients. *J. Appl. Gerontol.* **2020**. [CrossRef]

- 16. Rupprecht, C.D.D.; Byrne, J.A. Informal urban greenspace: A typology and trilingual systematic review of its role for urban residents and trends in the literature. *Urban For. Urban Green.* **2014**, *13*, 597–611. [CrossRef]
- 17. Rupprecht, C.D.D. Informal urban green space: Residents' perception, use, and management preferences across four major Japanese shrinking cities. *Land* 2017, *6*, 59. [CrossRef]
- 18. Sikorska, D.; Łaszkiewicz, E.; Krauze, K.; Sikorski, P. The role of informal green spaces in reducing inequalities in urban green space availability to children and seniors. *Environ. Sci. Policy* **2020**, *108*, 144–154. [CrossRef]
- 19. Kim, M.; Rupprecht, C.D.; Furuya, K. Typology and Perception of Informal Green Space in Urban Interstices: A case study of Ichikawa City, Japan. *Int. Rev. Spat. Plan. Sustain. Dev.* **2020**, *8*, 4–20. [CrossRef]
- 20. Del Tredici, P. Spontaneous urban vegetation: Reflections of change in a globalized world. Nat. Cult. 2010, 5, 299–315. [CrossRef]
- Farahani, L.; Maller, C. Investigating Residents' Use and Perceptions of Informal Greenspaces: A Study of Stony Creek in Melbourne's West. In Proceedings of the 8th State of Australian Cities National Conference, Adelaide, Australia, 28–30 November 2017.
- Rupprecht, C.; Byrne, J. Informal Urban Greenspace Perception and Use: Survey Instrument. 2016. Available online: https://www.researchgate.net/publication/303941485_Informal_urban_greenspace_perception_and_use_Survey_instrument (accessed on 10 February 2020).
- 23. Asakawa, S.; Yoshida, K.; Yabe, K. Perceptions of urban stream corridors within the greenway system of Sapporo, Japan. *Landsc. Urban Plan.* **2004**, *68*, 167–182. [CrossRef]
- 24. Rupprecht, C.D.; Byrne, J.A.; Lo, A.Y. Memories of vacant lots: How and why residents used informal urban green space as children and teenagers in Brisbane, Australia, and Sapporo, Japan. *Child Geogr.* **2016**, *14*, 340–355. [CrossRef]
- 25. Brighenti, A.M.; Mattiucci, C. Visualising the riverbank. City 2012, 16, 221–234. [CrossRef]
- 26. Rupprecht, C.D.D.; Byrne, J.A.; Ueda, H.; Lo, A.Y. 'It's real, not fake like a park': Residents' perception and use of informal urban green-space in Brisbane, Australia and Sapporo, Japan. *Landsc. Urban Plan.* **2015**, *143*, 205–218. [CrossRef]
- 27. Rigolon, A.; Browning, M.H.E.M.; Lee, K.; Shin, S. Access to urban green space in cities of the Global South: A systematic literature review. *Urban Sci.* 2018, *2*, 67. [CrossRef]
- 28. Kellert, S.R. Nature and childhood development. In *Building for Life: Designing and Understanding the Human-Nature Connection;* Kellert, S.R., Ed.; Island Press: Washington, DC, USA, 2005; pp. 63–89.
- 29. Wells, N.M.; Lekies, K.S. Nature and the life course: Pathways from childhood nature experiences to adult environmentalism. *Child Youth Environ.* **2006**, *16*, 1–24.
- 30. Adams, S.; Savahl, S. Children's perceptions of the natural environment: A South African perspective. *Child Geogr.* 2015, 13, 196–211. [CrossRef]
- 31. Elsley, S. Children's experience of public space. Child Soc. 2004, 18, 155–164. [CrossRef]
- 32. Chong, S.; Lobb, E.; Khan, R.; Abu-Rayya, H.; Byun, R.; Jalaludin, B. Neighbourhood safety and area deprivation modify the associations between parkland and psychological distress in Sydney, Australia. *BMC Public Health* **2013**, *13*, 422. [CrossRef]
- Lo, A.Y.; Jim, C.Y. Citizen attitude and expectation towards greenspace provision in compact urban milieu. *Land Use Policy* 2012, 29, 577–586. [CrossRef]
- Strohbach, M.W.; Arnold, E.; Haase, D. The carbon footprint of urban green space—A life cycle approach. *Landsc. Urban Plan.* 2012, 104, 220–229. [CrossRef]
- 35. Chen, W.Y.; Hu, F.Z.Y. Producing nature for public: Land-based urbanization and provision of public green spaces in China. *Appl. Geogr.* **2015**, *58*, 32–40. [CrossRef]
- 36. Costanza, R.; De Groot, R.; Braat, L.; Kubiszewski, I.; Fioramonti, L.; Sutton, P.; Farber, S.; Grasso, M. Twenty years of ecosystem services: How far have we come and how far do we still need to go? *Ecosyst. Serv.* **2017**, *28*, 1–16. [CrossRef]
- 37. Battisti, L.; Pomatto, E.; Larcher, F. Assessment and Mapping Green Areas Ecosystem Services and Socio-Demographic Characteristics in Turin Neighborhoods (Italy). *Forests* **2020**, *11*, 25. [CrossRef]
- 38. Säumel, I.; Hogrefe, J.; Battisti, L.; Wachtel, T.; Larcher, F. The healthy green living room at one's doorstep? Use and perception of residential greenery in Berlin, Germany. *Urban For. Urban Green.* **2021**, *58*, 126949. [CrossRef]
- 39. Lee, Y.; Gu, N.; An, S. Residents' perception and use of green space: Results from a mixed method study in a deprived neighbourhood in Korea. *Indoor Built. Environ.* **2017**, *26*, 855–871. [CrossRef]
- 40. Young, R.F. Managing municipal green space for ecosystem services. Urban For. Urban Green. 2010, 9, 313–321. [CrossRef]
- 41. Semeraro, T.; Scarano, A.; Buccolieri, R.; Santino, A.; Aarrevaara, E. Planning of Urban Green Spaces: An Ecological Perspective on Human Benefits. *Land* 2021, *10*, 105. [CrossRef]
- 42. Diko, S.K.; Palazzo, D. Institutional Barriers to Urban Greenspace Planning in the Kumasi Metropolis of Ghana. *Urban Forum* **2019**, *30*, 357–376. [CrossRef]
- 43. Bastian, O.; Haase, D.; Grunewald, K. Ecosystem properties, potentials and services–The EPPS conceptual framework and an urban application example. *Ecol. Ind.* **2012**, *21*, 7–16. [CrossRef]
- 44. Lategan, L.; Cilliers, J. Considering urban green space and informal backyard rentals in South Africa: Disproving the compensation hypothesis. *Town Reg. Plan.* **2016**, *69*, 1–16. [CrossRef]
- 45. Lindemann-Matthies, P.; Marty, T. Does ecological gardening increase species richness and aesthetic quality of a garden? *Biol. Conserv.* **2013**, *159*, 37–44. [CrossRef]

- 46. Boulton, C.; Dedekorkut-Howes, A.; Byrne, J. Factors shaping urban greenspace provision: A systematic review of the literature. *Landsc. Urban Plan.* **2018**, *178*, 82–101. [CrossRef]
- 47. Hagemann, F.A.; Randrup, T.B.; Sang, Å.O. Challenges to implementing the urban ecosystem service concept in green infrastructure planning: A view from practitioners in Swedish municipalities. *Soc. Ecol. Pract. Res.* **2020**, *2*, 283–296. [CrossRef]
- 48. Lee, A.C.K.; Jordan, H.C.; Horsley, J. Value of urban green spaces in promoting healthy living and wellbeing: Prospects for planning. *Risk Manag. Healthc Policy* **2015**, *8*, 131. [CrossRef]
- 49. Jorgensen, A.; Tylecote, M. Ambivalent landscapes—wilderness in the urban interstices. Landsc. Res. 2007, 32, 443–462. [CrossRef]
- 50. Sweeney, B. Producing liminal space: Gender, age and class in northern Ontario's tree planting industry. *Gend Place Cult.* **2009**, *16*, 569–586. [CrossRef]
- 51. Imai, H. The liminal nature of alleyways: Understanding the alleyway roji as a 'Boundary' between past and present. *Cities* **2013**, 34, 58–66. [CrossRef]
- 52. Franck, K.A.; Stevens, Q. Tying down loose space. In *Loose Space: Possibility and Diversity in Urban Life*; Routledge: Abingdon, UK, 2007; pp. 1–33.
- 53. Head, L.; Muir, P. Suburban life and the boundaries of nature: Resilience and rupture in Australian backyard gardens. *Trans. Inst. Br. Geogr.* **2006**, *31*, 505–524. [CrossRef]
- 54. Instone, L.; Sweeney, J. Dog Waste, Wasted Dogs: The Contribution of Human–Dog Relations to the Political Ecology of A ustralian Urban Space. *Geogr. Res.* 2014, 52, 355–364. [CrossRef]
- 55. McLain, R.J.; Hurley, P.T.; Emery, M.R.; Poe, M.R. Gathering "wild" food in the city: Rethinking the role of foraging in urban ecosystem planning and management. *Local Environ.* **2014**, *19*, 220–240. [CrossRef]
- 56. Trigger, D.S.; Head, L. Restored nature, familiar culture: Contesting visions for preferred environments in Australian cities. *Nat. Cult.* **2010**, *5*, 231–250. [CrossRef]
- 57. Speer, J. Urban Interstices: The Aesthetics and the Politics of the In-Between; Routledge: Abingdon, UK, 2015.
- 58. Doron, G.M. The dead zone and the architecture of transgression. City 2000, 4, 247–263. [CrossRef]
- 59. Moran, D. Between outside and inside? Prison visiting rooms as liminal carceral spaces. GeoJournal 2013, 78, 339–351. [CrossRef]
- 60. Cobbinah, P.B.; Darkwah, R.M. African urbanism: The geography of urban greenery. Urban Forum 2016, 27, 149–165. [CrossRef]
- 61. Pedrosa, L.J.P.; Okyere, S.A.; Diko, S.K.; Kita, M. Informal greenspaces in Peripheral Luanda, Angola: Benefits and Challenges. In *Sustainable Urban Futures in Africa*; Addaney, M., Cobbinah, P., Eds.; Routledge: New York, NY, USA, 2022; in press.
- 62. Evans, J.M.; Gambill, J.; McDowell, R.J.; Prichard, P.W.; Hopkinson, C.S. *Tybee Island: Sea Level Rise Adaptation Plan*; National Oceanographic and Atmospheric Administration: Athens, GA, USA, 2016.
- Dopko, R.L.; Capaldi, C.A.; Zelenski, J.M. The psychological and social benefits of a nature experience for children: A preliminary investigation. J. Environ. Psychol. 2019, 63, 134–138. [CrossRef]
- 64. Tillmann, S.; Clark, A.F.; Gilliland, J.A. Children and nature: Linking accessibility of natural environments and children's health-related quality of life. *Int. J. Environ. Res. Public Health* **2018**, *15*, 1072. [CrossRef] [PubMed]
- 65. Tillmann, S.; Tobin, D.; Avison, W.; Gilliland, J. Mental health benefits of interactions with nature in children and teenagers: A systematic review. *J. Epidemiol. Community Health* **2018**, *72*, 958–966. [CrossRef]
- 66. Tillmann, S.; Button, B.; Coen, S.E.; Gilliland, J.A. Nature makes people happy, that's what it sort of means: Children's definitions and perceptions of nature in rural Northwestern Ontario. *Child Geogr.* **2019**, *17*, 705–718. [CrossRef]
- 67. Chawla, L. Benefits of nature contact for children. J. Plan. Lit. 2015, 30, 433–452. [CrossRef]
- 68. Li, Y.; Zhao, M.; Motesharrei, S.; Mu, Q.; Kalnay, E.; Li, S. Local cooling and warming effects of forests based on satellite observations. *Nat. Commun.* 2015, *6*, 6603. [CrossRef]
- 69. Simmons, D.A. Urban children's preferences for nature: Lessons for environmental education. Child Environ. 1994, 11, 194–203.
- 70. Children Uprooted: What Local Governments Can Do. Available online: https://www.unicef.org/children-uprooted (accessed on 20 January 2020).
- 71. Chown, N.; Beardon, L. Identification of adults on the autism spectrum: A suggested pathway and good practice principles. *Good Autism Pract.* **2014**, *15*, 34–46.
- 72. Louv, R. The Nature Principle: Human Restoration and the End of Nature-Deficit Disorder; Algonquin Books: Chapel Hill, NC, USA, 2011.
- 73. Louv, R. Last Child in the Woods: Saving Our Children from Nature-Deficit Disorder; Algonquin Books: Chapel Hill, NC, USA, 2008.
- 74. Christensen, P.; Hadfield-Hill, S.; Horton, J.; Kraftl, P. Children Living in Sustainable Built Environments: New Urbanisms, New Citizens; Routledge: Abingdon, UK, 2017.
- 75. Chawla, L. Welcoming young people in urban placemaking: Learning from challenges. In *The Routledge Handbook of Designing Public Spaces for Young People*; Routledge: Abingdon, UK, 2020; pp. 120–134.
- 76. Hart, R.A. Children's Participation: The Theory and Practice of Involving Young Citizens in Community Development and Environmental Care; Routledge: Abingdon, UK, 2013.
- 77. Hart, R.A. *Children's Participation: From Tokenism to Citizenship;* UNICEF: New York, NY, USA, 1992. Available online: https://www.unicef-irc.org/publications/100-childrens-participation-from-tokenism-to-citizenship.html (accessed on 5 May 2021).
- 78. Pearce, J. Political Identity and Conflict in Central Angola, 1975–2002; Cambridge University Press: Cambridge, UK, 2015.
- 79. INE-Instituto Nacional De Estatísticas. *Pobreza Multidimensional em Angola—IPM*; INE-Instituto Nacional De Estatísticas: Luanda, Angola, 2020. Available online: https://www.ine.gov.ao/publicacoes/detalhes/Ng%3D%3D (accessed on 5 May 2021).

- 80. Jenkins, P.; Robson, P.; Cain, A. City Profile. Cities 2002, 19, 139–150. [CrossRef]
- Cain, A. Conflict and collaboration for water resources in Angola's post-war cities. *Water Post Confl. Peacebuild.* 2014, 63–83. Available online: https://www.taylorfrancis.com/chapters/edit/10.4324/9781849775809-13/con%EF%AC%82ict-collaboration-water-resources-angola-post-war-cities-allan-cain (accessed on 10 April 2020).
- 82. Rodrigues, C.U.; Frias, S. Between the city lights and the shade of exclusion: Post-war accelerated urban transformation of Luanda, Angola. *Urban Forum* **2016**, 27, 129–147. [CrossRef]
- 83. Gastrow, C. Urban states: The presidency and planning in Luanda, Angola. J. Urban Reg. Res. 2020, 44, 366–383. [CrossRef]
- 84. Castro, J.C.; Reschilian, P.R. Metropolization and territorial planning as a development perspective in Angola. *Cadernos Metrópole* **2020**, *22*, 841–868. [CrossRef]
- 85. Cobbinah, P.B.; Darkwah, R.M. Toward a more desirable form of sustainable urban development in Africa. *Afr. Geogr. Rev.* 2017, 36, 262–285. [CrossRef]
- 86. Jenkins, P. In search of the urban-rural frontline in postwar Mozambique and Angola. Environ. Urban 2003, 15, 121–134. [CrossRef]
- 87. Power, M. Angola 2025: The future of the "World's richest poor country" as seen through a Chinese rear-view mirror. *Antipode* **2012**, *44*, 993–1014. [CrossRef]
- 88. Watson, V. African urban fantasies: Dreams or nightmares? Environ. Urban 2014, 26, 215–231. [CrossRef]
- 89. Smith, H.; Jenkins, P. Trans-disciplinary research and strategic urban expansion planning in a context of weak institutional capacity: Case study of Huambo, Angola. *Habitat Int.* **2015**, *46*, 244–251. [CrossRef]
- 90. Croese, S.; Dominique, M.; Raimundo, I.M. Co-producing urban knowledge in Angola and Mozambique: Towards meeting SDG 11. *NPJ Urban Sustain*. **2021**, *1*, 1–10. [CrossRef]
- 91. INE-Instituto Nacional De Estatísticas. *Recenseamento Geral da População e Habitação; Resultados Preliminares;* INE-Instituto Nacional De Estatísticas: Luanda, Angola, 2014.
- 92. Luanda Urban Planning and Management Institute Plano Diretor Geral Metropolitano de Luanda; Luanda Urban Planning and Management Institute: Luanda, Angola, 2015.
- 93. Creswell, J.W. Research Design: Qualitative, Quantitative, and Mixed Methods Approaches, 4th ed.; SAGE Publications: Thousand Oaks, CA, USA, 2014.
- Van den Berg, M.; van Poppel, M.; van Kamp, I.; Andrusaityte, S.; Balseviciene, B.; Cirach, M.; Danileviciute, A.; Ellis, N.; Hurst, G.; Masterson, D. Visiting green space is associated with mental health and vitality: A cross-sectional study in four European cities. *Health Place* 2016, *38*, 8–15. [CrossRef] [PubMed]
- 95. Nieuwenhuijsen, M.J.; Kruize, H.; Gidlow, C.; Andrusaityte, S.; Antó, J.M.; Basagaña, X.; Cirach, M.; Dadvand, P.; Danileviciute, A.; Donaire-Gonzalez, D. Positive health effects of the natural outdoor environment in typical populations in different regions in Europe (PHENOTYPE): A study programme protocol. *BMJ Open* **2014**, *4*. [CrossRef]
- 96. Seguin, R.; Flax, V.L.; Jagger, P. Barriers and facilitators to adoption and use of fuel pellets and improved cookstoves in urban Rwanda. *PLoS ONE* **2018**, *13*, e0203775. [CrossRef] [PubMed]
- 97. Guest, G.; Bunce, A.; Johnson, L. How many interviews are enough? An experiment with data saturation and variability. *Field Methods* **2006**, *18*, 59–82. [CrossRef]
- Ando, H.; Cousins, R.; Young, C. Achieving saturation in thematic analysis: Development and refinement of a codebook. *Compr. Psychol.* 2014, 3. [CrossRef]
- 99. Bob-Milliar, G.M. Introduction: Methodologies for researching Africa. *Afr. Aff.* **2020**. [CrossRef]
- 100. Obeng-Odoom, F. The intellectual marginalisation of Africa. Afr. Ident. 2019, 17, 211–224. [CrossRef]
- 101. Marrengane, N.; Croese, S. *Reframing the Urban Challenge in Africa: Knowledge Co-production from the South*; Taylor & Francis: Germantown, NY, USA, 2020.
- 102. Flyvbjerg, B. Five misunderstandings about case-study research. Qual. Ing. 2006, 12, 219–245. [CrossRef]
- 103. Piaget, J. El Nacimiento de la Inteligencia en el Niño; Consejo Nacional para la Cultura y las Artes: Mexico City, Mexico, 1990.
- Hibbard, M.; Lurie, S. Saving land but losing ground: Challenges to community planning in the era of participation. J. Plan. Educ. Res. 2000, 20, 187–195. [CrossRef]
- 105. Savahl, S. Ideological Constructions of Childhood. Ph.D. Thesis, University of the Western Cape, Cape Town, South Africa, 2010.
- 106. Smithson, J. Using and analysing focus groups: Limitations and possibilities. Int. J. Soc. Res. Method 2000, 3, 103–119. [CrossRef]
- 107. Braun, V.; Clarke, V. Using thematic analysis in psychology. Qual. Res. Psych. 2006, 3, 77–101. [CrossRef]
- Nowell, L.S.; Norris, J.M.; White, D.E.; Moules, N.J. Thematic analysis: Striving to meet the trustworthiness criteria. *Int. J. Qual. Methods* 2017, 16, 1609406917733847. [CrossRef]
- 109. Du Toit, M.J.; Cilliers, S.S.; Dallimer, M.; Goddard, M.; Guenat, S.; Cornelius, S.F. Urban green infrastructure and ecosystem services in sub-Saharan Africa. *Landsc. Urban Plan.* **2018**, *180*, 249–261. [CrossRef]
- 110. Afrad, A.; Kawazoe, Y. Can interaction with informal urban green space reduce depression levels? An analysis of potted street gardens in Tangier, Morocco. *Public Health* **2020**, *186*, 83–86. [CrossRef]
- Długoński, A.; Dushkova, D. The Hidden Potential of Informal Urban Greenspace: An Example of Two Former Landfills in Post-Socialist Cities (Central Poland). Sustainability 2021, 13, 3691. [CrossRef]
- 112. Kim, M.; Rupprecht, C.D.; Furuya, K. Residents' perception of informal green space—A case study of Ichikawa City, Japan. *Land* **2018**, *7*, 102. [CrossRef]

- 113. Farahani, L.M.; Maller, C. Investigating the benefits of 'leftover' places: Residents' use and perceptions of an informal greenspace in Melbourne. *Urban For. Urban Green.* **2019**, *41*, 292–302. [CrossRef]
- 114. Rupprecht, C.D.; Byrne, J.A. Informal urban green-space: Comparison of quantity and characteristics in Brisbane, Australia and Sapporo, Japan. *PLoS ONE* **2014**, *9*, e99784. [CrossRef]
- 115. Zylstra, M.J.; Knight, A.T.; Esler, K.J.; Le Grange, L.L.L. Connectedness as a core conservation concern: An interdisciplinary review of theory and a call for practice. *Sci. Rev.* 2014, 2, 119–143. [CrossRef]
- 116. Sarkissian, W.; Wenman, C. Creative Community Planning: Transformative Engagement Methods for Working at the Edge; Routledge: Abingdon, UK, 2010.
- 117. Santhia, D.; Shackleton, S.; Pereira, T. Mainstreaming sustainable adaptation to climate change into municipal planning: An analysis from the Eastern Cape, South Africa. *Dev. S. Afr.* **2018**, *35*, 589–608. [CrossRef]
- 118. Kita, M.; Okyere, S.A.; Sugita, M.; Diko, S.K. In Search of Place and Life in Indigenous Urban Communities: An Exploration of Abese Indigenous Quarter of La Dadekotopon, Accra. In *The Challenge of African Potentials: Conviviality, Informality and Futurity;* Ofosu-Kusi, Y., Matsuda, M., Eds.; Langaa: Bamenda, Cameroon, 2020; p. 255.
- 119. Okyere, S.A.; Diko, S.K.; Hiraoka, M.; Kita, M. An Urban "Mixity": Spatial Dynamics of Social Interactions and Human Behaviors in the Abese informal Quarter of La Dadekotopon, Ghana. *Urban Sci.* **2017**, *1*, 13. [CrossRef]
- Silver, J. Incremental infrastructures: Material improvisation and social collaboration across post-colonial Accra. Urban Geogr. 2014, 35, 788–804. [CrossRef]
- 121. Fletcher, R. Connection with nature is an oxymoron: A political ecology of "nature-deficit disorder". J. Environ. Educ. 2017, 48, 226–233. [CrossRef]
- 122. Dickinson, E. The misdiagnosis: Rethinking "nature-deficit disorder". Environ. Commun. J. Nat. Cult. 2013, 7, 315–335. [CrossRef]