

TRANSFORMATIVE CITIZENS TO PROPEL BIODIVERCITIES

Citizens as a fundamental axis for making urban biodiversity everyone's business

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In response to the constant urgencies of environmental degradation perceived in cities around the world and the evident impacts of these phenomena on the quality of life of their growing populations, new capacities, values, and attitudes are emerging in citizens that participate in and manage their territory based on reconciling their relationship with nature. From learning about natural history to new narratives that lead to contemplation, curiosity, and awareness of well-being linked to biodiversity, urban dwellers are leading actions and mobilizations around the world to transform their connection with the environment and face the social challenges imposed by global change. This chapter seeks to redefine citizens as the axis of BiodiverCities' empowerment: BiodiverCitizens who think, feel, and do, that is, who actively participate in shaping the quality of daily life and, conse-

quently, in harmonious coexistence with the diversity of life forms.

FEATURES OF CONTEMPORARY CITIZENS, AND THEIR ROLE IN FOSTERING BIODIVERCITIES

The planet is becoming increasingly urban, as shown by population prospects in which 68% of the world's inhabitants will live in cities by 2050 when urban coverage will have tripled (United Nations, 2019). This phenomenon thus becomes one of the most transformative processes facing the planet in the 21st century. The unsustainable patterns on which global urban development is being created have intensified its capacity for environmental degradation and the persistence of multiple forms of poverty and inequalities linked to the loss and degradation of ecosystems and biodiversity. (United Nations, 2017). In this scenario of global urban expansion, as well as

the deepening of its social and environmental impacts (Photo 1), the role of those who inhabit these spaces, i.e., citizens, will be decisive in reversing, reducing, and mitigating the urgent challenges that this phenomenon generates at local and even global scales. Citizens thus emerge as a fundamental factor in energizing the transformation of this reality, primarily through actions that allow urban development to be reconciled with preserving all forms of life. Such reconciliation seeks that cities and the territories where they are immersed become spaces where human beings can live, work, and evolve in harmony with their environment: BiodiverCities.

The social and environmental inequity conditions that materialize in urban environments of much of the world determine how the people who live there see, act and persist in search of improving their quality of life and habitat. There is

growing expectation for the active emergence of these actors who are faced with scenarios of increasingly socially and ecologically impoverished cities. They live daily in urban habitats, can question, get upset, and act to mobilize, convene and manage the collective imaginaries of what may represent a transformation towards a new city. A city that protects and restores its biodiversity, and also uses it sustainably for social and economic purposes, thus improving the quality of life of urban inhabitants. This transformation is what BiodiverCities propose, under a context in which citizens are the primary actors to demand and promote the conservation of urban life diversity as a way of valuing it and feeling part of it. This agency will gradually build a collective welfare based on solidarity and harmony with nature.

Thus, building a collective model of environmentally sustainable cities (Montoya & Garay, 2017),

which are reconfigured based on biodiversity management from different scales and approaches (BiodiverCities), will only be possible from the leadership of active citizens that aim at transformative action. That is why sustainable development is citizens in action (Álvarez-Vanegas, 2020) because, as urban citizens, we are participants and creators of coexistence in the spaces we inhabit. Therein lies the ability to move towards transformative innovation and collective intelligence and reclaim the right to nature.

HOW ARE CITIZENS EMPOWERED WITH THE HOPE OF LIVING IN HARMONY WITH NATURE?

The emergence of new citizens, characterized by direct participation and management in how to inhabit urban space, based on a more harmonious relationship with the environment, is evident in various cases. Examples

of collective appropriation processes mediated by education and participatory restoration have allowed the eastern hills of Bogotá in Colombia to be protected (Mejía, 2016); a wetland in a historically marginalized area of Cape Town to be restored; a post-industrial site in New York like "The High Line" to be intervened; and a green space considered "worthless" in the outskirts of London to be transformed. These examples show how groups of citizens with different degrees of cooperation lead successful interventions for protecting the nature of these urban centers, thus breaking down conventional distinctions between city and nature (Aalto & Ernstson, 2017).

In addition, these cases are the best representation of how a new scale of capacities, values, and attitudes is being consolidated in different urban environments around the world, in which citizens engage with nature from an ethical-political stand-

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➔ PREDOMINANT SOCIAL AND ENVIRONMENTAL DISRUPTIONS IN URBAN SETTINGS

The photograph shows children playing in a sandbox on the banks of the Medellín River in the *El Sinai* neighborhood in the northern zone of Medellín, Colombia. It is an emerging territory inhabited by people who have been displaced by violence. They come to an area characterized by self-construction and solidarity, but also by social inequality, by living in risky riverbank areas, and by being a scenario of speculation for macro mobility projects that ignore the territory's reality.

Photos: Urbam-EAFIT archive, 2017.

point. This represents a significant change in the paradigm of superiority over nature that modern societies have embedded. It was based on a relationship of extraction, experimentation, transformation, and exploitation that would solve the needs of a growing human population through the development of an industrial model but also deteriorated the quality of soil,

water, air, and the forms of life that inhabit it (Sanderson et al., 2002).

A change in this paradigm implies certain transformations: going from a nominal citizen who declares that they have rights (low-intensity citizen) to becoming a representative citizen, capable of building and deliberating on their rights (high-intensity citizen); from

a citizen who votes to one who, under the pressure of the contemporary world's challenges, is capable of meeting with others, mobilizing actions, and fine tune their senses around nature (Fox, 2005). This change implies the emergence of a sensitive, transforming citizen who reasons, learns, manages, and encourages other citizens and

is co-responsible for the territory they inhabit.

This transformative perspective of citizens based on their relationship with nature emphasizes the need to reconfigure the relationship between social and ecological systems that configure urban environments based on a shared vision of change. This implies changing characteristics associated with the values, expectations, and preferences that guide the choices and actions of the actors that converge there (Geels & Schot, 2007). In this context, methodologies aimed at producing proactive and transformative knowledge emerge. The one proposed by *Participatory Action Research - PAR (Investigación-Acción-Participación - IAP)* enables the population to learn about and become critically aware of its reality, empowerment, collective mobilization, and its transformative action.

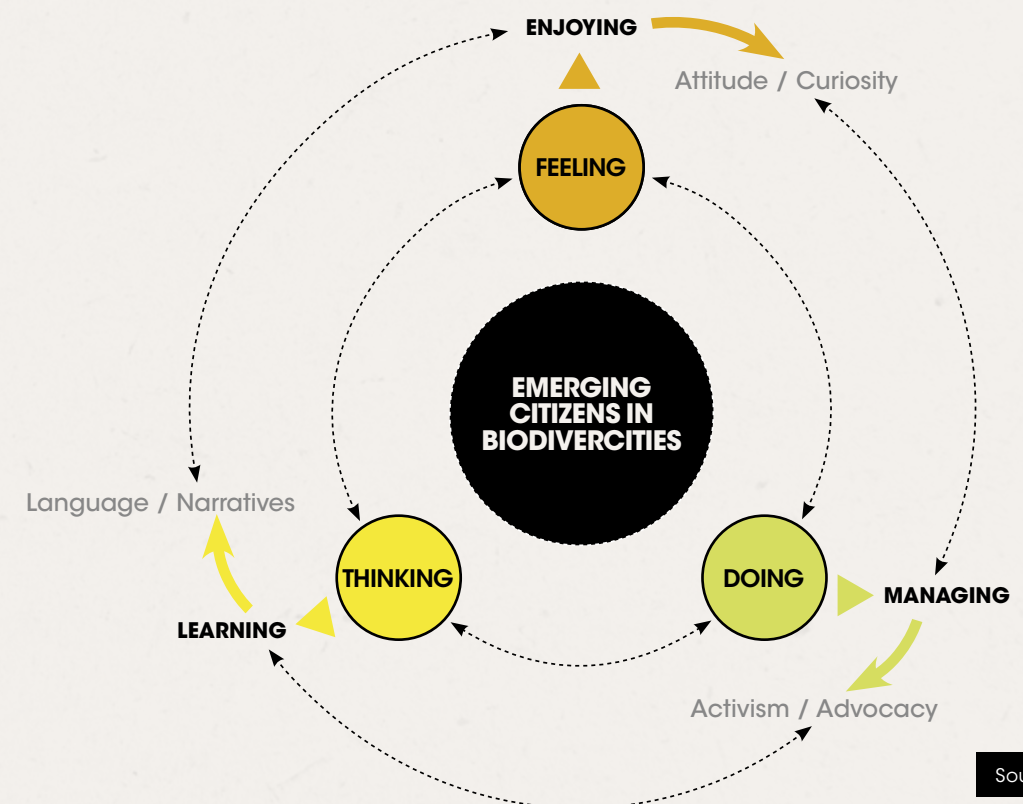
Under this frame of reference, the transformation of citizens is a redefinition that seeks to be part of a project in which the quality of daily life is the fundamental premise. Hence, RAP is, in turn, linked to the term *sentipensante* (one who feels/thinks), which denotes a person who combines everything they do in the territory, reason and passion, body and heart; they are those who continuously build their own world, their worldview and their reality (Jaramillo, 2012; Escobar, 2014). Thus, the perspective opened by BiodiverCities points to a transformation towards citizens that **think, feel, and do** according to the biodiversity they inhabit, where nature is not what is outside of us but a comprehensive part of what we carry inside (Figure 1).

This triad of thinking, feeling, and doing is anchored to the ethical-political dimension of citizens and relates to one of the strategic areas of UNESCO's education

program: global citizens education, based on three learning domains. (UNESCO, 2015):

- ➔ **Cognitive:** capacities for acquiring knowledge and reflection necessary to better understand the world and its complexities through perception, memory, or language. This refers to the action of **thinking** and is evidenced through learning and constructing new narratives.
- ➔ **Socioemotional:** values, attitudes, and social competencies that contribute to the affective, psychosocial, and physical development of people and enable them to live with others respectfully and peacefully. It refers to **feeling** and is perceived through enjoyment and the ability to question and be interested in other ways of life.
- ➔ **Behavioral:** conduct, performance, practical application, and commitment. It is materialized

Figure 1. The awakening of feeling, thinking, and doing from which new citizens emerge in biodiversity transformation



Source: Prepared by the author.

in *doing*, one of the most challenging processes since moving to action requires having gone through knowledge, conviction, and coherence to manage and defend the quality of life.

Therefore, it is essential to apply the term *sentipensante* to move from a state of a city that is disconnected from its ecological processes where ecosystems and biodiversity are considered as external entities, independent and isolated from human beings, controlled, designed, and managed by environmental authorities. This implies, from the everyday life of citizens, experiencing the city as a socio-ecosystem, resulting from an interaction that society has been building culturally (Frank et al., 2017). For these ecological and everyday processes to acquire value in decision-making, social practices that protect urban nature are needed through local actions and neighborhood narratives (Ernstson, 2013; Aalto & Ernstson, 2017). Therefore, the transformation posed by BiodiverCities from *sentipensar* (feeling/thinking) consists of recognizing, coexisting, mobilizing, and promoting urban nature based on respect, admiration, and dignity of diversity at the local scale.

BIODIVERCITIZENS?

A redefinition of citizens as proposed by the BiodiverCities implies that citizens become part of a project in which quality of life is a fundamental premise, which may be possible based on a new way of relating with nature. This purpose can only be achieved through citizen participation that recognizes the role of all urban inhabitants as representatives and actors in developing this socio-ecosystem, thus incorporating an empathetic relationship with all those representations of nature in the rights agenda.

Citizen participation is, therefore, the set of actions, facts, and atti-

tudes that a group of individuals assumes regarding matters of common interest; it is the action in political life, not only to defend the particular or individual interest but, fundamentally, the common, collective, public interest (Maya, 2001; Miller-Rushing et al., 2012). It is also a social scenario of a complex network of interactions where controversies and disputes of cohesion and vital and constantly changing differences arise. It allows society to be configured based on each citizen's daily life, as it materializes their interests and their vision of the social and cultural appropriation of nature. When we invoke other citizens, we gather a polyphony of voices through participation levels based on cognitive, socio-emotional, and behavioral aspects that are in constant interrelation and involve an admiration for being part of nature.

Citizens that emerge from this new form of relationship with nature, a product of citizen participation, can be sketched around three categories: the learned and informed, the conscious and curious, and the bold and active. These allude to *feeling*, *thinking*, and *doing*, from

which this chapter proposes the scope of redefining new citizens in terms of BiodiverCities.

- THINKING (cognitive): **learned and informed citizens** who make nature their own through other forms of knowledge and new narratives.
- FEELING (socioemotional): **conscious and curious citizens** who know that well-being depends on biodiversity, who contemplate, observe, investigate and register the species they coexist with.
- DOING (behavioral): **bold and active citizens** who perform sustainable daily actions, who seek to act, defend, mobilize and make urban nature their own.

Learned and Informed Citizens

Citizens have not been trained to have systemic thinking and to understand that the universe of relationships, from waking up to feeding oneself to dressing, moving, and interacting with others, all have to do with nature, surrounding ecosystems, and the landscapes we have built in that process.



BOX 1. MARAVILLOSOS PERSEGUIDOS (WONDERFUL ONES CHASED) FOR THEIR GOOD REPUTATION!

Maravillosos perseguidos is a successful transmedia campaign carried out by the Explora Park of Medellín, Colombia, to train citizens to respect biodiversity. It is an ethical public campaign that emphasizes, as priority obligations, learning to respect not only what is similar to us but also bringing citizens closer to real biodiversity, that which is profuse in its forms, complex in its life systems, and escaped from common places. Through a mixture of resources, from popular culture, literature, plastic arts, music, cinema, and biology, they seek to reclaim the role of unloved species such as opossums, piranhas, cockroaches, bats, moths, weeds, toads, snakes, etc.

More information at:

<https://encasa.parqueexplora.org/maravillosos-perseguidos/>

In this way, information plays a crucial role in training citizens, as a central factor in the collective and public life of citizens' urban lives (Maya, 2001). The way in which the quantity and quality of the information made available to the population are accessed is a crucial part of the awakening of *learned and informed citizens* (although we should not confuse information with knowledge, since the latter presupposes information, but not that someone who is well informed is knowledgeable by definition). The democratic aspiration is for information to enable competent and reasonable citizen participation and evaluate individuals as actors in their processes (Maya, 2021).

Thanks to the vast amount of information, new inspiring narratives appear that respond to collective imaginaries. For example, contempt for what is different, even for other forms of life with which we coexist in cities, has become normalized. This is represented, for example, in the stereotypical disgust for cockroaches, as opposed to empathy for ladybugs, or the stereotypical association of waste and filth for vultures and buzzards, as opposed to the admiration and inspiration produced, for example, by songbirds, among many other cases. Urban societies have been built based on examples of disgust and hatred, justified in tastes and aesthetics of contempt (Forbes, 2020). The invitation of BiodiverCities is to create new narratives based on informed citizens who make nature their own and become spokespersons for biodiverse practices and other forms of knowledge about its conservation, recovery, or use. From a cognitive point of view, these *learned and informed citizens* (see Box 1) seek to reclaim biodiversity and respect for what is different as an essential part of who we are, consid-

ering that there is much to learn about the environment's ecological processes, as well as contribute to reclaiming nature's wealth and promoting its care and respect.

Conscious and Curious Citizens

These citizens emerge with awareness and curiosity for the biodiversity they inhabit and have no prejudices. They enjoy an open and broad perspective for sharing space with other living beings. They formulate a different scenario from that of today's cities, in which citizens are encouraged to detach nature from the human condition as if it were something separate or distant. Cities have disconnected the human element from the biodiverse one so that the cycles and dynamics of nature, which are characterized by slow processes, are incompatible with the immediacy of productivity, profitability, fast food, schedules, and constant contact with social media, which alienate the human and natural dimensions (Maya, 2021). This rupture is evident in the lack of interest in processes considered imperceptible but present in the city's daily life. It is

a question here of moving towards citizens who transform their environment based on the art of observing and their capacity to contemplate.

The art of observing things is not something that can be transmitted through rules and precepts. It is an essential component in the eye and ear, that is, in the mind and soul, of which these are organs (Burroughs, 2018). A transition is required from *learned and informed citizens* to *conscious and curious citizens* because knowing is not everything; it is only half. The other half is to love. Love of nature is synonymous with understanding what makes us human (Burroughs, 2018).

Once nature is admired, we perceive an inexhaustible world of that which moves the heart, attracts the mind, and triggers the imagination because it means health for the body, stimulus for the intellect, and joy for the soul (Burroughs, 2018). The biologist Edward O. Wilson has called this feeling *biophilia*, that impulse of association that we feel towards other forms of life, loaded with memories, observations, and anecdotes of everyday life, in coex-



BOX 2. URBAN NATURALISTS

"In an urbanizing world, curiosity about all life forms found daily in cities takes on unprecedented relevance. Observations, drawings, records, and community environmental projects show civil society's role in managing Colombian biodiverse cities [...]. Knowing with whom the urban habitat is shared will provide knowledge to build, manage, use, and protect it in a balanced way, so it is necessary to continue sharing, recognizing, and mobilizing collective actions of the inspiring world of nature in cities" (Montoya et al., 2018).

More information (in Spanish) at:

<http://reporte.humboldt.org.co/biodiversidad/2017/cap3/303/>

<http://reporte.humboldt.org.co/biodiversidad/2020/cap2/201/>

<http://reporte.humboldt.org.co/biodiversidad/2020/cap3/306/>

istence with other forms of life. It refers to a deep emotional need to be in intimate and constant contact with living beings (Wilson, 1984) by walking through a forest, contemplating sunsets, watching water flow, and socializing with those we love under the shade of a tree.

In the global landscape of the pandemic, essential changes in how we interact with each other and our environment were apparent. Particularly evident was the impact of lockdown on the mental health of citizens and the role nature plays in counteracting it. The increased use of green space and outdoor socialization to reduce virus transmission during this period has led many people to appreciate the mental health benefits of local parks (Roe & McCay, 2021). This example shows how interaction with nature creates multiple cultural and immaterial benefits for us: landscape and green public spaces that allow physical exercise, relaxation, and contemplation and reinforce socialization, social cohesion, and a sense of belonging (Gómez-Baggethun, 2016).

By awakening the sense of observation for nature's daily events and reflecting on the ecological processes that determine human well-being, curiosity flourishes for those living beings with which the urban and rural space is shared: this promotes questions, observation, inventories, and participatory monitoring processes, i.e., science in the hands of citizens. In this context, proposals such as citizen science appear, a space for knowledge production that attracts a very heterogeneous group of actors to a collaborative learning space (Lafuente, 2017). This space facilitates a vast network of participating citizens who collaborate and provide data through different platforms (e.g., iBird and iNaturalist) and, at the same time, acquire new learning

and skills related to the enjoyment of and interdependence with nature (Sanz et al., 2014).

From the socioemotional point of view, these *conscious and curious citizens* require a capacity to pay attention daily, to know how to ask questions through curiosity, to be passionate about cities' natural histories, to record the enthusiasm of everyday life as if they were expeditionists in the face of an urbanizing world that calls for a new role, that of urban naturalists (see Box 2). This social reclaiming of nature begins to establish another type of action in the territory, where it is evident that biodiversity management is in the hands of each citizen.

Bold and Active Citizens

The daily life of citizens who are open to learning about nature and informed about their territory, observe, contemplate, and are aware of the benefits that biodiversity offers for their health and enjoyment. In addition, it creates



BOX 3. ESCAZÚ YOUTH AGREEMENT

Assimilating the growth of multiple environmental youth movements around the world, the United Nations Children's Fund (UNICEF) promotes a toolkit created collectively among young activists from 15 countries in Latin America and the Caribbean in the context of environmental protection and human rights: the Regional Agreement on Access to Information, Public Participation, and Access to Justice in Environmental Matters in Latin America and the Caribbean (Escazú Agreement). This platform seeks to encourage and guide young environmental activists' active and informed participation and presents the following reports: *Tools for Climate Action, What is Climate Governance?, Get Ready to Act!, Paris Agreement for Young People, and Climate Glossary for Young People.* (UNICEF, 2020).

More information at:

<https://www.unicef.org/lac/informes/acuerdo-escazu-para-jovenes>

curiosity, which turns them into people who implement daily sustainability practices. These citizens also seek spaces and opportunities that allow open debates, where ideals and shared visions are built. Spaces in which everyone can intervene. These are the bases for being able to talk about citizenship, social inclusion, and a new relationship with nature. In short, a society worth living in (Subirats, 2011). This is why citizen participation is a fundamental ingredient of sustainable development because a world that is fairer and more respectful of nature does not depend on those in power (Álvarez-Vanegas, 2019) but on those who manage their territory daily.

It takes audacity and activation of the senses to act, defend, mobilize and make urban nature one's own. Traits that have been close to the new generations through environmental influencers and activists, such

as the youth movements led by Greta Thunberg, from Sweden, through the worldwide student movement "Fridays For Future" (<https://fridaysforfuture.org/>), and Francisco Vera, in the Colombian case, with the "Guardians for Life" movement. They are people who act according to environmental precepts, seeking to maintain the harmony of their daily actions with nature. As a result of their convictions, they get involved and lead community movements for environmental education and sustainable development.

This activation requires that appropriate information be transformed into adequate knowledge to discern the problems, their implications, and multiple incidences. It is central that each citizen asserts themselves in biodiversity and learns how to participate in decision-making. Hence, management is the highest form of citizen participation. Management in terms of citizens, that is, in the horizon of a policy and a general sense that seeks to "create a concept of collective action that allows citizens to imagine and cross the frontiers of what is socially possible" (Medellín, 1994).

However, becoming part of ecosystems does not only imply protecting, regenerating, or even building them but also agreeing to govern and manage them. Once the will of citizens has been manifested, building harmonious coexistence must become a habit (Baptiste, 2014). This process must occur through active participation in local processes to foster collective and guided action and be part of citizen networks, debates, self-behavioral changes, and seek political action and public discussion.

Bold and active citizens require, from the behavioral point of view, some guidelines concerning BiodiverCities: the ability to attract

and mobilize actors, resources, and information for the transformation of their habitat, their block, their territory; leadership capabilities related to the undertaking of sustainable actions to make nature their own; and finally, the hope that they can promote significant changes in harmony with nature.

WHAT COMES FIRST: THE BIODIVERCITY OR BIODIVERCITIZENS?

The transformation proposed by BiodiverCities implies new capacities, values, and attitudes of citizens who participate in and manage their territory based on reconciling their relationship with nature. This process calls for the emergence and empowerment of new types of citizens that, in terms of biodiversity, can be guided by principles such as:

- ➔ Being a citizen is not a given. We have a surplus of nominal citizens, a bonanza of information and situations. Still, we have a profound deficit of real and active *sentipensante* citizens who consider themselves part of nature and act for it. This change implies sensitive, transforming citizens who reason, learn, manage and encourage others and are co-responsible with the territory they inhabit.
- ➔ The new citizens that emerge in BiodiverCities act decisively to ensure that the well-being of those with whom they coexist (humans and non-humans) and the care of the ecosystems in which they interact go hand in hand. This must occur without being detrimental to other people or ecosystems. BiodiverCities are built with citizens willing to achieve a full life in harmony with the natural systems on which they depend.

➔ Cities are the most crucial point of convergence of social and ecological challenges for the persistence of humanity, making them the main laboratory in which to reactivate the hope of redefining and re-educating for a better tomorrow. Transformative actions that can effectively address these challenges will facilitate the transition of these spaces into biodiverse, livable, equitable and resilient cities.

➔ Reconciling the relations between society and nature proposed by BiodiverCities requires moving towards active participation of new citizens in making judgments on matters of common interest, in decision making, in ethical-political reflection, as well as in executing and monitoring what has been decided and what is expected to be achieved.

KEY MESSAGES

➔ **The challenges of this new urban era, brought about by the ecological crisis and growing inequality, can only be met through education.** It is urgent to train and empower new citizens who, aware and knowledgeable of their environment, are willing to transform the society they dream of based on this knowledge.

➔ **Ecosystems are the product of human actions and culture; therefore, they are a material and symbolic construction.** Cities resemble the world of relationships between the social and ecological systems they host and, consequently, their citizens' decisions about their development.

➔ **Citizens are key actors in shaping socio-ecosystems** based on the cognitive, socio-emotional, and behavioral aspects that are in constant interrelation and interdependence with the nature humans admire.