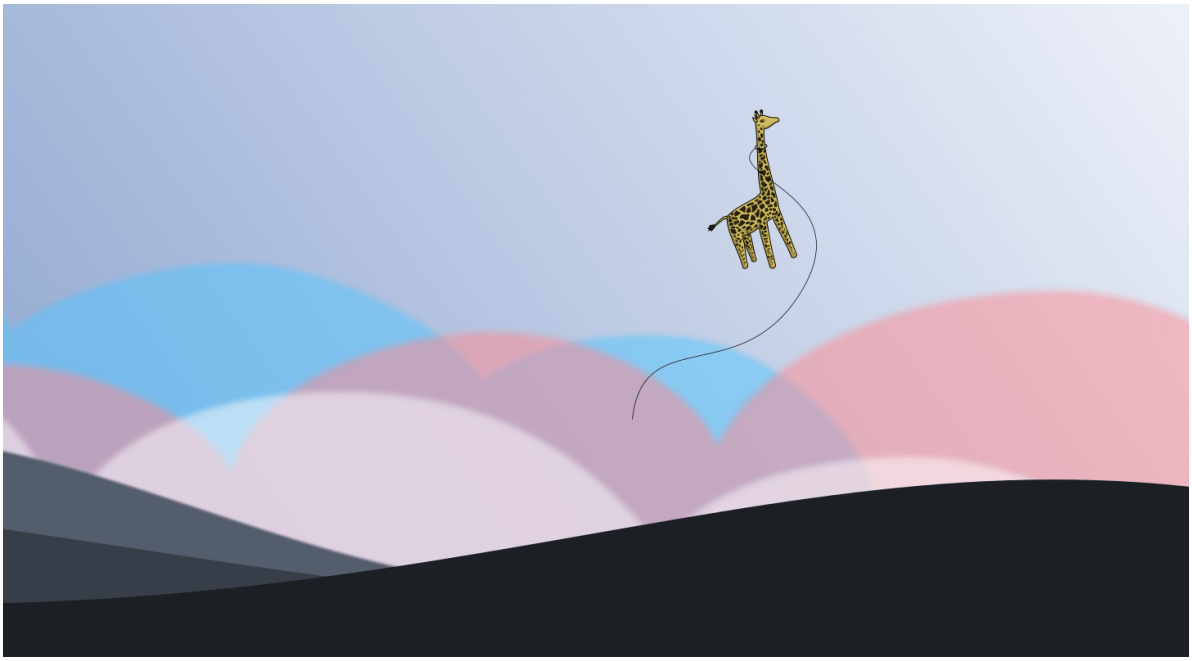
THE 2030 AGENDA AS A BLUEPRINT

Biodiversity: time for action?

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Illustrator: Fernando Prado

The evidence is irrefutable: we are losing biodiversity. During recent decades (between 2002 and 2019), the abundance in the number of specimens of a long list of critical animal species that make up Catalonia's own particular Living Planet Index has decreased by 25% on average [1]. We could be forgiven for thinking that our level of biodiversity loss is relatively moderate compared to the figure for the planet as a whole (68% [2]), but it is important to remember that this last figure reflects a much more extended period of time and that the rates of loss per unit of time are actually quite similar.

Biodiversity in crisis

Specimen loss is affecting the different natural systems disproportionately. It is especially noticeable in aquatic environments (rivers, lakes, marshlands; 54%), and land environments with more open vegetation (crops, pastures and meadows, 34%). The data available for marine environments also points to unfavourable conditions. By contrast, the decrease in forests and scrubland is far less exaggerated (12%). In addition, biodiversity loss isn't affecting all organisms equally: the more generalist ones with broader ecological requirements remain stable, while the specialist ones that live in specific habitats or have specific ecological requirements are generally experiencing a more pronounced regression. The data show the effect of what's known as biotic homogenisation; a phenomenon that

goes hand-in-hand with biodiversity loss, whereby the world's species composition becomes increasingly similar due to the growing dominance of a small set of generalist and cosmopolitan species (which are often invasive) and the rarefaction or extinction of a large number of specialists [3].

The trends identified for some of the species and habitats of European importance included in the EU Birds and Habitats Directives corroborates this general analysis. The latest six-yearly report presented by Catalonia to the Ministry of Ecological Transition (period 2013-2018; [4]), indicates that 59% of the habitats of European importance with available information (more than 90% of the total) have an unfavourable conservation status, and only 22% have a favourable conservation status (the remaining 19% have an unknown conservation status). Again, the habitats that fare worse are those linked to aquatic environments: (riparian forests, inland waters) and the coast.

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Similarly, 75% of the species included in the Habitats Directive (Annexe II, IV and V) and present in Catalonia have an unfavourable conservation status, and only 12% are in a favourable situation. The remainder (13%) have an unknown status. In the case of the species in the Birds Directive, there are differences in the short and long-term trends for nesting and wintering species. In the short term, 21% of the nesting species and 36% of the wintering ones show negative trends. However, these figures are reduced to 4% and 5% in the long term, respectively. Nonetheless, there is a high number of species with an unknown trend, especially among nesting species.

The principal pressures affecting them

The causes of this decline are extremely varied and operate on various spatial and temporal scales, although all are directly or indirectly related to human activity. On a global scale, the main causes of biodiversity loss are hunting, intensifying productive systems (agriculture, livestock, forestry and fishing), the loss and degradation of natural habitats, climate change, invasive species and pollution. These are set against the common background of a globalised socio-economic model based on an unsustainable use of our planet's natural resources.

In Catalonia, much of this biodiversity loss has to do with the urbanisation of the land and the use of its natural resources. Urbanisation and the proliferation of communication infrastructures have negatively affected (in the form of pollution, frequentation, and the alteration of water systems) and decreased the connectivity (through fragmentation) of the natural environment, especially in highly transformed areas such as metropolitan regions.

These changes have typically involved biotic homogenisation on a global scale [5], with the more demanding local species being replaced by more general and cosmopolitan native or invasive ones. The proliferation of invasive species must be considered an extreme case of this homogenisation, motivated by the increased movement of people and goods and the alteration of the most humanised territories.

The use of natural resources includes intensifying agriculture, livestock and forestry practices, which come with large-scale usage of external materials (fertilisers, plant protection products, machinery, water, etc.) and introduce techniques and varieties that have a noticeable impact on spontaneous biodiversity. Paradoxically, the abandonment of traditional uses in less productive areas has also significantly affected biodiversity conservation. Over the last century, in a globalised economic context, we have seen an abandonment of areas whose remoteness, dryness or more challenging terrain has made them unprofitable. This has led to a widespread expansion of forest areas (forests and scrub) to the detriment of crops and pastures, with subsequent changes in species and communities, primarily those that thrive in open spaces.

Climate change is also having an effect on Catalonia’s biodiversity, although not at the speed initially expected; we are just starting to feel the effects now. Rising temperatures and declining rainfall are now causing colder species —which migrate further north or up into mountainous areas— to be replaced by others from warmer climates. Moreover, droughts are already jeopardising the survival of many others adapted to wetter climates. We are also seeing more and more recurring episodes of tree mortality in mountain forests (such as Scots Pine forests).

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Finally, it is important to stress that the pressures are global. In recent years, Europe, and Catalonia in particular, have managed to reduce significant pressures such as water and air pollution with positive effects on biodiversity and human health. However, we should also be aware that rather than being eliminated, some of these pressures have simply been relocated to other less regulated countries that now produce many of the goods and services previously produced here. Therefore, any analysis of the pressures that threaten biodiversity must also consider social justice by adopting a global rather than local perspective.

A context of emergency

The environmental emergency is part of a context, both here in Catalonia and internationally, whereby humanity has been aware of the magnitude of the crisis for a good

number of years and is trying to react. We've had the necessary adoption of the 2008 "One World, One Health" Manhattan Principles, which seek to combat the threats to life on Earth with a holistic approach to preventing epidemics and epizootics and preserving the integrity of ecosystems for the benefit of humans, their domestic animals and their functional biodiversity. These principles took on particular relevance with the onset of Covid-19 in 2020, and there is now widespread acceptance around the concept of Global Health, at least on a theoretical level. Also noteworthy is the adoption of the Sustainable Development Goals (SDGs) put forward by the United Nations General Assembly in its 2030 Agenda. Approved in 2015, the agenda defines global action for sustainable development until 2030 through 17 goals (SDGs) belonging to three dimensions (economic, social and environmental). (See figure 1). In 2019, the Government of Catalonia approved the National Plan for the implementation of the agenda in Catalonia, thereby fulfilling the mandate of the previous legislature.



With regard to the specific area under consideration here, several agreements signed by the Government of the Generalitat de Catalunya are relevant. One of them is the Strategy for the Natural Heritage and Biodiversity of Catalonia, which was approved in 2018 and defines a roadmap for nature conservation policies in Catalonia until 2030. This document will guide the implementation, in Catalonia, of the policies agreed at the 1992 United Nations Convention on Biological Diversity and the 2011-2020 Plan for the implementation of the EU Biodiversity Strategy to 2020, which has now been reinforced by the 2020 approval of the EU Biodiversity Strategy to 2030. The starting point for any future action must be an evaluation of the results of the previous strategy (2020), which unfortunately points to its general failure due to a lack of global vision and action on the processes responsible for biodiversity loss, the scarcity of economic resources and insufficient efforts to communicate the problem and engage society.

This latest evidence has been brought to light by the work of different international panels and the designated conventions commissioned to fulfil precisely that purpose (the IPBES,

IPCC and CBD). For example, the report recently presented to society by the IPBES and the IPCC emphasises the intrinsic link between the climate crisis and the biodiversity crisis and the need to respond to them jointly and efficiently [6]. Along these lines, the 2019 Government Agreement to declare a climate emergency in Catalonia seeks to achieve the objectives, in terms of mitigation and adaptation to climate change, established by Law 16/2017, of the 1st of August, on climate change. However, as a society, we have yet to overcome the challenge of integrating the different environmental responses, beyond climate action, into the bulk of the country's sectoral policies.

General lines of action

The data for both Catalonia and Europe as a whole proves that our nature is in crisis, and we must take immediate action to protect and regenerate it. To do this, we need determined, crosscutting policies that tackle the very foundations of the socio-economic model for land management, the climate emergency and biodiversity conservation. Yet, there are a number of shortcomings that must be corrected.

Firstly, the insufficient forcefulness of European environmental policies, which display a lack of ambition in some of their goals and fail to aspire to a fundamental change in model. One example of this is the EU's goal of halving emissions by 2050 to avoid exceeding a 2° temperature increase, which won't be enough; we need to reduce them by 65% (and it should really be 1.5° if we are to prevent irreversible processes). Another example is the failure to amend the ineffective environmental measures of the old Common Agricultural Policy (CAP) in the recently approved new one.

Furthermore, one of the main criticisms voiced by scientists concerning European policies in general and the European Green Deal in particular, is the outsourcing of environmental impacts beyond the EU's borders. For as long as Europe's fails to look beyond its own borders to assess its impact on the entire planet and ensure that imports meet the same environmental (and social) standards as the food and materials produced here, the effectiveness of our environmental policies will be more than debatable. Paradoxically, this outsourcing has not always led to an improvement in European biodiversity. The reduced pressures on agriculture and livestock due to food imports from outside Europe, for example, has not led to an improvement in agricultural habitats.

The various global assessments on the state of Biodiversity and Ecosystem Services (IPBES) conclude that the underlying factor in this crisis is an economy based on an explicit link between natural resource extraction and economic growth [7]. This dependence on natural resources is not only based on oil consumption; it also includes a long list of renewable and non-renewable resources. It is critical we realise, then, that we currently have an excessive focus on changing the energetic model, combined with generalised inaction on other fronts. The transition cannot be based solely on an energy transition to renewables because it will fail to achieve the goals and have an extreme impact on the natural environment due to the extraction and treatment of the massive amounts of raw materials we would need. Meanwhile, inaction and misinformation dominate in many other areas, such as the

conservation and restoration of biodiversity.

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From an economic point of view, the cost of inaction is much higher than the cost of protecting and conserving nature and thus safeguarding the benefits it brings us. We know that investments made in this field generate a substantial economic return (approximately 100 to 1). Fortunately, these objectives are now being included in new European policies like the aforementioned European Green Deal, an economic programme that aims to achieve climate neutrality by 2050, conserve and restore biodiversity, and promote sustainable agriculture, among other goals. The challenge lies in providing an appropriate policy response to put these changes into effect and limit the short-term economic benefits that our society (particularly some economic sectors) derives from the unsustainable exploitation of resources, while at the same time ensuring the new model is compatible with the environmental conditions that should allow us to conserve these resources in the future.

Lines of action in Catalonia

In Catalonia, we need to tackle the global emergency with a radical rethink of our policies, particularly those concerning land usage and the exploitation of its natural resources. Firstly, these policies need to incorporate the concept of Global Health as a central leitmotif. We must accept that we can only maintain a healthy society within equally healthy ecosystems. This implies preserving their ability to function and provide environmental services to the population, both of which are dependent on species and habitats having a healthy conservation status. We also need to align these policies with the SDGs. The transformation should capture the essence of the SDG approach while allowing for a crosscutting model in which any action taken would positively impact the 17 SDGs as a whole. The current model does not achieve this because some of the goals, especially those focused on economic growth, are prioritised over and above (and in fact erode) the other SDGs. The global and joint vision of the SDGs, and their ability to drive new policies and review existing ones, is the best tool we have for reversing the environmental and social degradation we are suffering. This integrated approach to politics at an international level is inspiring a change in the socio-economic model in line with the proposals made in the European Green Deal. The future economy must be green (and fair), or there wiil not be one at all.

More specifically, with regard to biodiversity conservation, if Catalonia is to make its vision for 2030 effective, it must first deploy its Natural Heritage and Biodiversity Strategy [8].

This will involve ensuring a more effective governance of the natural heritage in Catalonia, articulated through and aligned with the various sectors involved; introducing a new legal framework that overcomes the limitations of the current one; deploying government bodies to manage the network of protected natural spaces; and widespread participation in nature conservation by local authorities. Moreover, as a priority, it must involve the materialisation and deployment of the Agency for the Natural Heritage and Biodiversity of Catalonia, the creation of which was approved a year ago. This Agency must be consolidated as the administrative structure around which the new model of governance and the execution of nature conservation policies in Catalonia revolve, and this should go hand-in-hand with a review of the sectoral policies that are often responsible for the erosion of our natural heritage.

Clearly, all these actions depend on the availability of adequate resources, which in principle should be guaranteed by the Natural Heritage Fund fed by the so-called Tax on CO2. But we also need to explore connections with the post-COVID recovery funds (known as the Next Generation EU funds or NGEU), which the Catalan government wants to allocate according to areas of interest, some of which have strong links to conserving and recovering natural heritage (such as Axis 1, Economy for Life, and Axis 3, Ecological Transition).

Furthermore, we urge the government to focus the deployment of the strategy on urgent policies for the conservation and restoration of the environments most under threat according to the report on the state of nature in Catalonia: mature forests, coastal and mountainous environments, inland aquatic ecosystems and extensively managed agro-pastoral areas, such as dry lands and pastures.

In addition, while it will may be more difficult to achieve in the short term, what will be most important in the long term is ensuring that the bulk of the country’s policies explicitly internalise and minimise their impact on the environment and biodiversity. While this will inevitably close the door to some of the unsustainable enterprises being carried out in our territory, it will open others to new forms of activity. It’s imperative that public spending reinforces this transition and doesn’t perpetuate an environmentally and socially unsustainable model

Obviously, the conservation policies will need to go hand-in-hand with other determined policies for achieving climate commitments and dealing with all their related consequences, including commitments to reduce emissions, change the urban model and deploy mobility infrastructures that allow citizens to adequately contribute to climate change mitigation. In parallel, efforts to conserve biodiversity must be accompanied by the deployment of the Strategy for Green Infrastructure in Catalonia, which will guarantee the provision of ecosystem goods and services to the citizenry and, therefore, protect its quality of life and ability to adapt to global change

We should never forget that, as a society, not only do we have a lot to do, we also have a lot to say. It is time for action.

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Carles Castell is an environmentalist. He holds a PhD in Biology, a Master's Degree in Environmental Management in the Rural World and a Master's Degree in Leadership from the Autonomous University of Barcelona (UAB). For 10 years, he was a researcher at the Catalan Center for Ecological Research and Forestry Applications (CREAF), where he now collaborates in communication issues. He has been working with Barcelona Provincial Council to conserve natural spaces for 25 years, planning, managing, monitoring and carrying out analyses of the natural heritage. Currently, he is responsible for monitoring environmental actions and programmes within the Climate Action Area. He taught ecology as a professor at the Autonomous University of Barcelona (UAB) and the Polytechnic University of Catalonia (UPC) and collaborates in several postgraduate programmes. In 2019 he curated the "Som Natura" exhibition at the Barcelona Museum of Natural Sciences.



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