

# Governance for Ecosystem-based Adaptation



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In recent decades, climate change has caused impacts on natural and human systems on all continents and oceans.<sup>1</sup> Changes in precipitation and melting of glaciers alter hydrological systems, and affect the availability of water in terms of quality and quantity. It has been observed that species of terrestrial and aquatic fauna and flora have modified their areas of geographical distribution, seasonal activities, migratory patterns and abundances in response to climate change. This also includes the agricultural species and varieties, key in food security. Thus, the integrity of the ecosystems suffers the

impacts of climate change, which reduces their capabilities to provide essential services for the livelihoods of human populations.<sup>2</sup>

Climate change and variability have allowed greater awareness regarding the dependence of human systems on ecosystems and their services. In this context, IUCN promotes the use of Nature-based Solutions (NbS) to address climate change. The NbS are defined as actions for the protection, sustainable management and restoration of natural or modified ecosystems to face the most pressing challenges

1 Intergovernmental Panel on Climate Change (IPCC) (2014). *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. [pdf online] [https://www.ipcc.ch/site/assets/uploads/2018/02/SYR\\_AR5\\_FINAL\\_full.pdf](https://www.ipcc.ch/site/assets/uploads/2018/02/SYR_AR5_FINAL_full.pdf). (Accessed: 5 April 2019).

2 Mumby, P.J., Flower, J., Chollett, I., Box, S.J., Bozec, Y.M., Fitzsimmons, C., Forster, J., Gill, D., Griffith-Mumby, R., Oxenford, H.A., Peterson, A.M., Stead S.M., Turner, R.A., Townsley, P., van Beukering, P.J.H., Booker, F., Brocke H.J., Cabañillas-Terán, N., Cauty, S.W.J., Carricart-Ganivet, J.P., Charlery, J., Dryden C., van Duyl, F., Enríquez, S., den Haan, J., Iglesias-Prieto, R., Kennedy, E.V., Mahon, R., Mueller, B., Newman, S.P., Nugues, M.N., Cortés Núñez, J., Nurse, L., Osinga, R., Paris, C.B., Petersen D., Polunin, N.V.C., Sánchez, C., Schep, S., Stevens, J.R., Vallès, H., Vermeij, M.J.A., Visser, P.M., Whittingham, E., Williams, S.M. (2014). *Towards Reef Resilience and Sustainable Livelihoods: A Handbook for Caribbean Coral Reef Managers*. Exeter: University of Exeter.

of the human being, in an effective, adaptive manner and in benefit of people and biodiversity.<sup>3</sup> These solutions refer to Ecosystem-based Adaptation, Ecosystem-based Mitigation and Ecosystem-based Disaster Risk Reduction (Eco-DRR).

Ecosystem-based Adaptation (EbA) promotes the use of ecosystems and their services to deal with the impact of climate change. The IUCN Environmental Law Centre understands that the EbA approach includes a "set of strategies, policies and practices aimed at the protection and restoration of ecosystem services (or nature) to reduce the vulnerability of society as a whole to climate change ". There are several practical examples of this approach, such as the reforestation of forests in water recharge zones to improve water harvesting and therefore reduce the risk of drought and water scarcity, as well as the restoration of mangroves, which pose a natural infrastructure barrier in the face of sea level rise.

EbA is being included more and more in strategies or plans for adaptation and sectoral development. However, there is still a long way to go to understand the governance arrangements necessary for EbA to be sustainable. The purpose of this file is to define governance for EbA and outline its fundamental characteristics.

## Flexible

Climate change implies a challenge for decision making, given the uncertainty about the consequences of the increase in the average temperature of the planet. Although there are data, analyses and models on different climate scenarios depending on the development trajectory, there is no certainty about the timing, scale, place or severity of the impacts or how those impacts will interact with other change engines.<sup>4</sup> Creating and implementing policies, laws and systems for the management of natural resources in such a context requires a change from the traditional paradigm to a flexible one that allows adjusting to constant changes.

Thus, the most distinctive feature of governance for EbA is the flexibility of political and legal frameworks. Flexibility is managed through the adoption of sequential and iterative decisions to identify short-term strategies to face long-term uncertainties. In this process, additional information is incorporated over time and, through learning and evaluation, policies are corrected in intermediate periods.<sup>5</sup>

The information on which this process is based must integrate the sciences (physical, biological, economic and social, and the interactions between these components), as well as traditional and indigenous knowledge. The analysis of this information aims to project the negative and positive consequences of climate change in human

## Governance for EbA: Definition

Governance is the means through which society defines its goals, priorities and moves towards decision making at a global, national or local level. It includes: a) the legal and policy frameworks, b) institutions, and c) processes and mechanisms through which citizens and other interested actors express their interests, exercise their rights, fulfill their obligations and resolve their differences.<sup>6</sup>



natural systems, the human intervention can facilitate adjustment to the projected climate and its effects".<sup>7</sup> It should be noted that the EBA is an approach that should be part of a comprehensive adaptation strategy.

Thus, it can be said that governance for EbA refers to the norms, institutions and processes that determine the way in which power is exercised, responsibilities are distributed and how and what decisions are made and implemented to moderate potential harms, take advantage of the beneficial aspects or resist the negative consequences of climate change, making use of solutions based on nature. This model of governance should be flexible, multidimensional, participatory and ecosystemic.

Adaptation to climate change refers to the "process of adjustment to the actual or projected climate and its effects. In human systems, adaptation tries to moderate the damage or take advantage of the beneficial opportunities. In some

3 Cohen-Shacham, E., Janzen, C., Maginnis, S., Walters, G. (2016). *Nature-based Solutions to Address Global Societal Challenges*. Gland, Switzerland: IUCN.

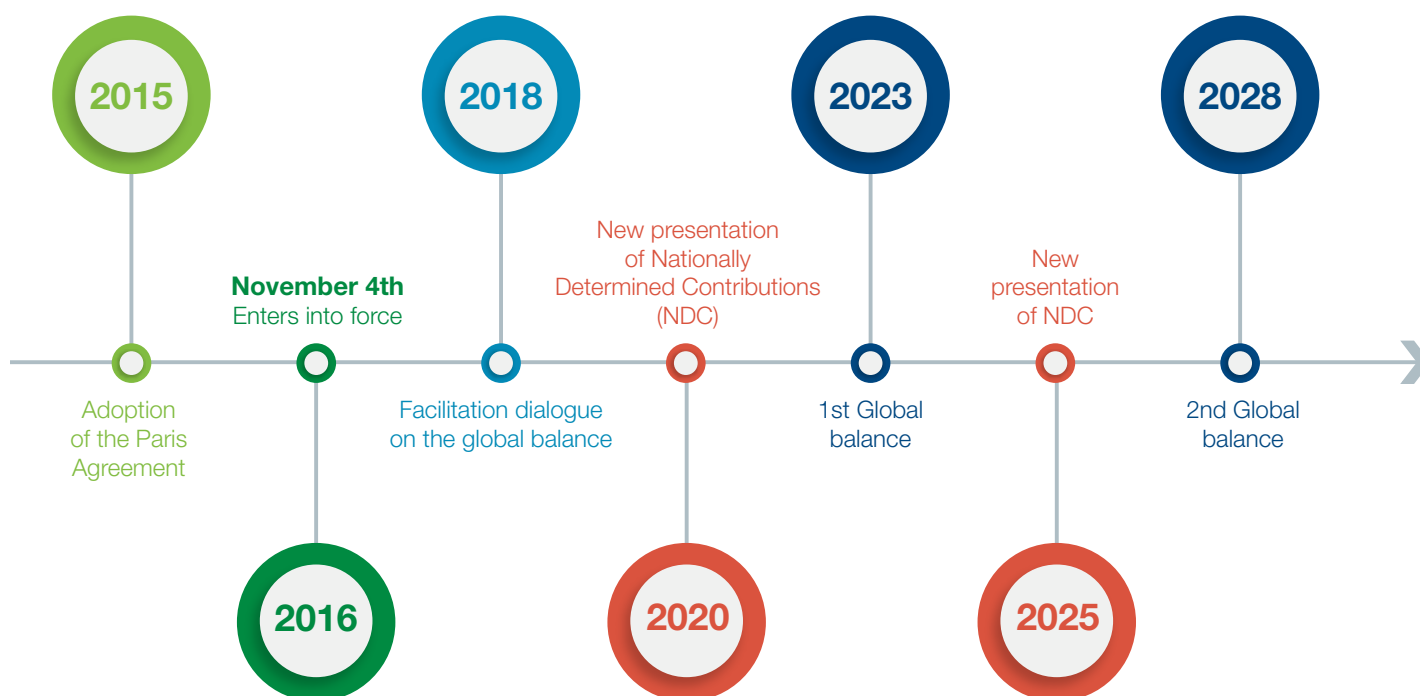
4 Sánchez, J.C. and Roberts, J. (eds.) (2013). *Transboundary Water Governance: Adaptation to Climate Change*. IUCN Environmental Policy and Law Paper No. 75. Bonn, Germany: IUCN.

5 IPCC (2014b). *Third Assessment Report. Annex B: Glossary of terms* [pdf online], <https://archive.ipcc.ch/pdf/glossary/tar-ipcc-terms-sp.pdf>. (Accessed: 7 August 2018).

6 Adaptation of the governance definition of: Burhenne-Guilmin, F. and Scanlon, J. (eds.) (2004). *International Environmental Governance*, IUCN Environmental Policy and Law Paper No. 49. Gland, Switzerland: IUCN.

7 IPCC (2014). *Climate Change 2014: Impacts, adaptation and vulnerability. Summaries, Frequently Asked Questions and Cross-Chapter Boxes. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [pdf online][https://www.ipcc.ch/site/assets/uploads/2018/03/WGIIAR5-IntegrationBrochure\\_FINAL-1.pdf](https://www.ipcc.ch/site/assets/uploads/2018/03/WGIIAR5-IntegrationBrochure_FINAL-1.pdf). (Accessed: 5 April 2019).

# Key dates of the Paris Agreement:



and natural systems, and the consequences of policy responses to that change. Thus, new adaptation options and the establishment of criteria for the evaluation of these options can be identified (in terms of availability, advantages, costs, efficiency and viability).

The United Nations Framework Convention on Climate Change (UNFCCC) refers to the need to maintain a certain flexibility in international commitments (Article 4, paragraph 6).

Indeed, the Paris Agreement (PA) is a flexible instrument, as reflected in its mechanism of constant updating and improvement through national commitments on adaptation, mitigation and means of implementation. Countries have an obligation to update their climate commitments, called Nationally Determined Contributions (NDCs), every five years (Article 4, paragraph 9) and in addition, they can adjust their NDCs at any time in order to increase their level of ambition (article 4, paragraph 11). The PA also foresees a global evaluation mechanism for progress in meeting its objectives, known as the "global balance", which will allow updating and improving its goals (Article 14).

## Multidimensional

Governance for EbA encourages multisectoral coordination (e.g. agriculture, water, biodiversity) and multi-level coordination (e.g. local, sub-national, national and international). The multisectoral nature of climate change is widely recognized, along with the need to reduce "isolated" approaches in decision-making and management. Therefore, governance for EbA promotes sectors - such as water, environment, agriculture, tourism, health, energy, industry, and others - to develop more effective mechanisms for horizontal integration or inter-institutional coordination and cooperation.<sup>8</sup> Such coordination can facilitate the identification of benefits and synergies between sectors and their adaptation needs, prevent regulatory and institutional fragmentation and favor coherence in the measures and actions for adaptation.<sup>9</sup>

Climate change affects people and ecosystems differently, depending on their degree of vulnerability. Geographic characteristics and socio-environmental, economic and health conditions can make socio-ecological systems (human and natural) more sensitive to the effects of change,<sup>10</sup> therefore vulnerability assessments and the implementation of adaptation

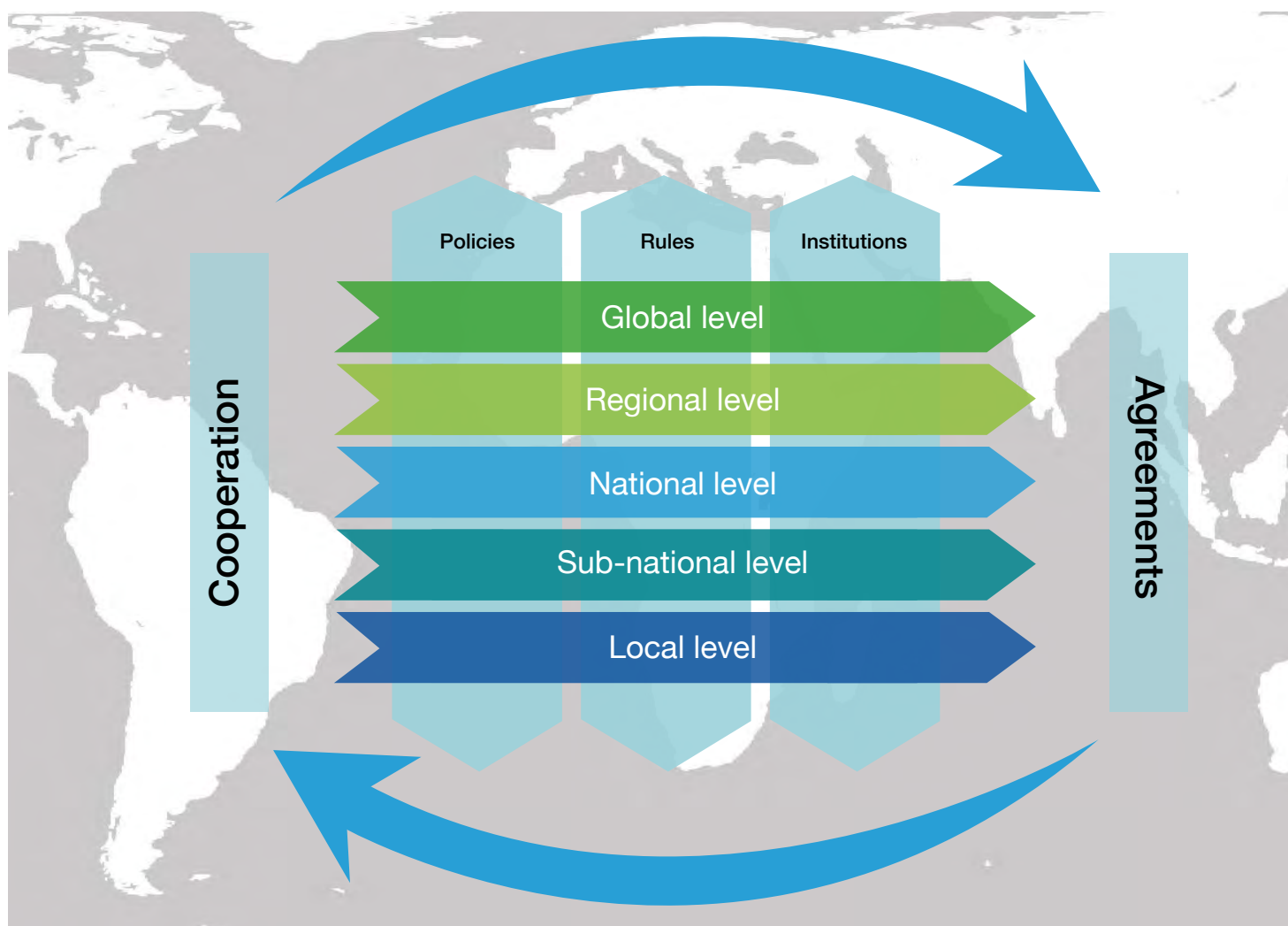
8 Pahl-Wostl, C. (2009). 'A Conceptual Framework for Analyzing Adaptive Capacity and Multilevel Learning Processes in Resource Governance Regimens'. *Global Environmental Change*, 19 (3): 354-365.

9 UNDP-UNEP (2011). *Mainstreaming Climate Change Adaptation into Development Planning: A Guide for Practitioners*. [pdf online] UNDP-UNEP Poverty Environment Initiative. Available at: [https://www.undp.org/content/undp/en/home/librarypage/environment-energy/climate\\_change/adaptation/mainstreaming\\_climatechangeadaptationintodevelopmentplanningagui.html](https://www.undp.org/content/undp/en/home/librarypage/environment-energy/climate_change/adaptation/mainstreaming_climatechangeadaptationintodevelopmentplanningagui.html). (Accessed: 5 April 2019)

10 Instituto Nacional de Ecología y Cambio Climático (INECC) (2016). 'Vulnerability to climate change' [online article], (November 13, 2016) <https://www.gob.mx/inecc/acciones-y-programas/vulnerabilidad-al-cambioclimatico-80125>. (Accessed: 7 August 2018).

measures must be carried out at a local level, responding to their particular conditions. However, other decisions relevant to local adaptation are adopted at a national level (e.g. adaptation priorities in the NDCs) and internationally (e.g. funding mechanisms for adaptation), which poses a challenge as regards coordination, communication and coherence between the different levels of government.

Governance for EbA promotes vertical integration through the creation of institutions and processes involving representatives of national and sub-national entities (as well as authorities from different sectors), in order to establish dialogues for the elaboration of policies and concrete adaptation actions. These dialogues allow local adaptation needs, as well as traditional and indigenous knowledge and experiences, to inform national and international public policies.<sup>11</sup> At the same time, international and national policies guide the adaptation priorities in an integral way and try to avoid bad adaptation.



11 Huitema, D., Mostert, E., Egas, W., Moellenkamp, S., Pahl-Wostl, C. and Yalcin, R. (2009). 'Adaptive Water Governance: Assessing the Institutional Prescriptions of Adaptive Water Governance (Co-)Management from a Governance Perspective and Defining a Research Agenda'. *Ecology and Society*, 14(1): 26 [online] <http://www.ecologyandsociety.org/vol14/iss1/art26/>. (Accessed: 5 April 2019)





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## Participatory

Public participation is an essential element of all stages of decision making in climate change adaptation. It contributes to the assessment of vulnerabilities and the definition of climatic risks that the communities face, to the design and formulation of measures for adaptation to climate change and for civil society to take an active role in the implementation of adaptation policies and actions.<sup>12</sup>

From the point of view of social justice, informed public participation allows greater equity in decision-making that affects the groups most vulnerable to climate change, among them, women, children, young people, older adults and ethnic and indigenous minorities. Public participation is especially important for EbA, since it favors equity in the access, use and distribution of natural resources on which the livelihoods of local communities are based.

Governance for EbA promotes institutional strengthening to enable the participation of various stakeholders interested in finding solutions, continuous learning, and the search for joint actions.

<sup>12</sup> To know more about the advantages of public participation in decision-making related to the environment see: Ebbesson, J. (1997). 'The Notion of Public Participation in International Environmental Law'. *Yearbook of International Environmental Law*, 1997, 8(1): 51-97.

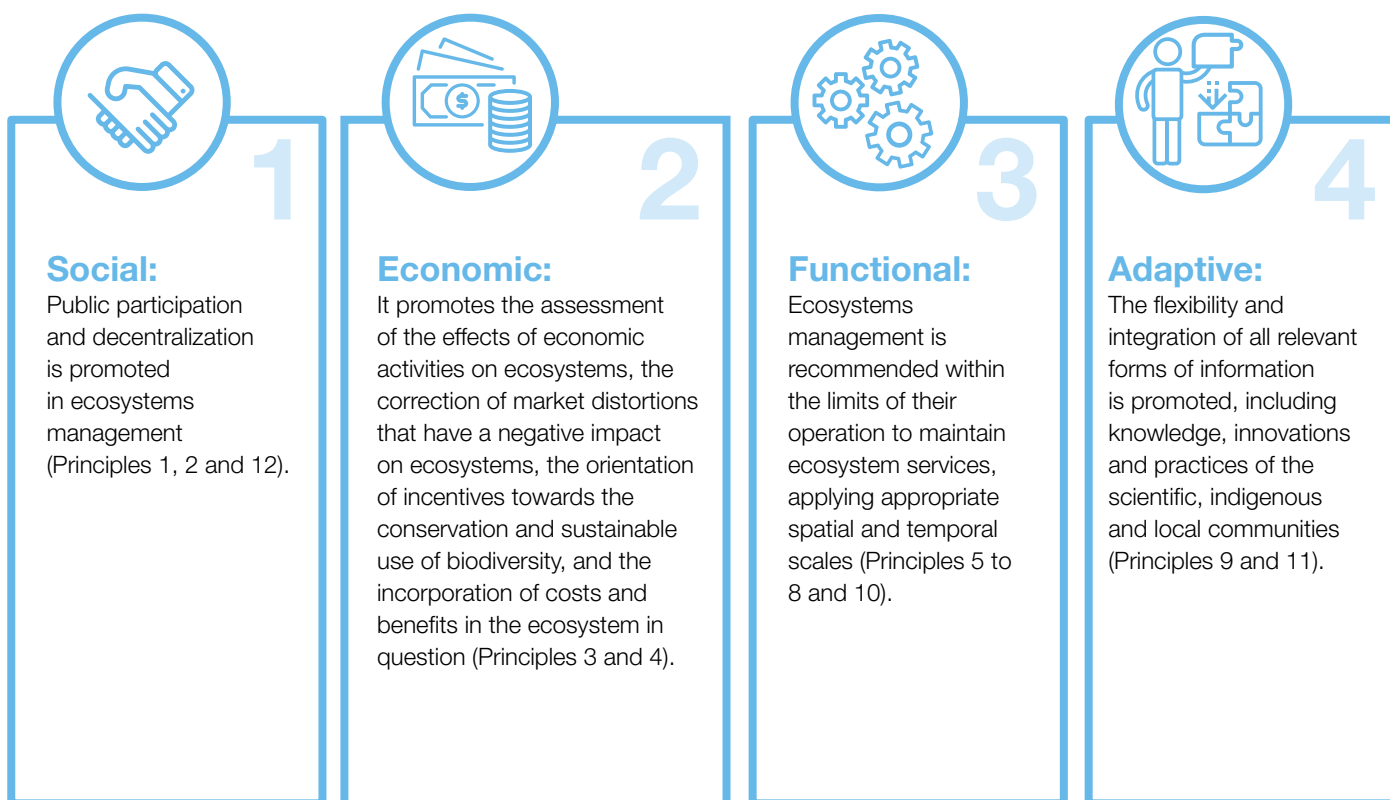
# Ecosystem

Governance for EbA aims to fully integrate the ecosystem approach into policies and laws with the aim of reducing the vulnerability of ecosystems to climate impacts and seeking equity.

The ecosystem approach constitutes an integrated management strategy for soil, water and living resources that promotes their conservation and sustainable and equitable use.<sup>13</sup> It is based on the application of appropriate scientific methodologies focused on the levels of biological organization that comprise the structure, processes, functions and interactions between organisms and their environment. It also establishes that human beings are an integral component of ecosystems.

The ecosystem approach recognizes the importance of the services that nature provides to people for human well-being (such as climate regulation, the provision of food and recreational values, among others) for the protection and maintenance of health and resilience of people, human and natural systems.

This approach is based on 12 complementary principles to conserve biodiversity,<sup>14</sup> which could be summarized in the following four dimensions:



<sup>13</sup> Secretariat of the Convention on Biological Diversity (CBD) (2004). *The Ecosystem Approach, CBD Guidelines*. Montreal: Secretariat of the Convention on Biological Diversity.

<sup>14</sup> The 12 principles were adopted at COP VII, in Decision VII / 11. CBD (2004). *The Ecosystem Approach* [pdf online], (2004). <https://www.cbd.int/doc/publications/ea-text-en.pdf>. (Accessed: 7 August 2018).





**In conclusion,** governance for EbA aims to respond to the challenges associated with climate change and is a means to an end, which is to increase the resilience of human and natural systems, through good management, as well as the restoration and conservation of ecosystems.

Transforming the current paradigm of governance with this new vision will be key, not only to implement solutions based on nature to face climate change, but also to achieve the Sustainable Development Goals of the 2030 Agenda.





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**About the AVE project**

The AVE project: Adaptation, Vulnerability & Ecosystems seeks to scale up the Ecosystem-based Adaptation (EbA) approach through the strengthening of capacities to address climate change, the integration of political, legal and institutional frameworks and the gathering of evidence on their multiple benefits to increase resilience and reduce the vulnerability of people and nature. Its implementation is carried out since 2015 in six Mesoamerican countries (Mexico, Guatemala, Honduras, El Salvador, Costa Rica and Panama) with the support of the Federal Ministry of the Environment, Nature Protection and Nuclear Safety (BMU) of Germany, and executed by the Environmental Law Centre (ELC) and the Regional Office for Mexico, Central America and the Caribbean (ORMACC) of the International Union for Conservation of Nature (IUCN), and in coordination with member organizations and partners such as the Honduran Environment Foundation and VIDA Development, the Salvadoran Ecological Unit, the Natural History Society of Soconusco, the Talamanca Caribe Biological Corridor Association and the Trinational Commission of the Trifinio Plan.

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