

CLIMATE CHANGE STRATEGY FROM PROTECTED AREAS

A CALL FOR THE RESILIENCE OF MEXICO
2014-2020

The effects of climate change are becoming more evident and they are taking place at a faster rate than estimated.¹ Protected Areas (PA) conserve highly valuable systems that contribute to reduce vulnerability to climate change and mitigate carbon dioxide emissions. Based on the PA of Mexico, it is possible to create new guidelines to improve wellbeing both of urban and rural population.

Mexico has made progress showing its interest and commitment to meet the demands that this phenomenon implies, including the General Law on Climate Change (LGCC, for its initials in Spanish), the National Climate Change Strategy (ENCC Vision 10-20-40, for its initials in Spanish), and the Climate Change Special Program (PECC, for its initials in Spanish). These documents recognize the importance of conserving ecosystems, as well as creating and managing PAs as climate change adaptation strategies. PA contribute to meet international goals, such as the Aichi targets, agreed by the Parties to the Convention on Biological Diversity (CBD), due to their capacity to increase the resilience of ecosystems and carbon stocks. The National Commission for Protected Areas of Mexico (CONANP, for its initials in Spanish) relies on their "Strategy towards 2040, An Approach for the Conservation of Protected Areas of Mexico", a long-term planning framework that considers climate change as a substantive theme.

Taking into account all the above, this proposal is built on the premise of collaborative work across all sectors involved, within a medium and long term vision. Based on the first version of the Climate Change Strategy for Protected Areas (CONANP, 2010), the strategic themes and actions were developed taking into account best practices to address climate change. The strategy derives from the concepts of vulnerability, resilience, sustainability and connectivity that contribute to the effective management and conservation of natural capital through the PA, facing the risks of climate change.

1 Turner *et al.*, 2010. Climate change: helping nature survive the human response. *Conservation Letters*, 3, 304–312.

The conceptual framework of this strategy is based on resilience in its ecological and social dimensions and may serve as a key benchmark to assess and foster sustainability. From a systemic approach, resilience appears as the capacity of systems to improve their conditions for sustainability. In turn, sustainability creates suitable conditions for the enhancement of resilience. These factors are thus interconnected.

Furthermore, resilience and vulnerability are associated concepts. Vulnerability depends on the character, magnitude and rate of the climatic variation to which a system is exposed (exposure), its sensitivity, and its adaptability. These factors result in the risk that a disaster may take place. The risk determined by the coincidence of several vulnerability aspects, all of them social in nature and, consequently, modifiable through public policies (see figure 1).

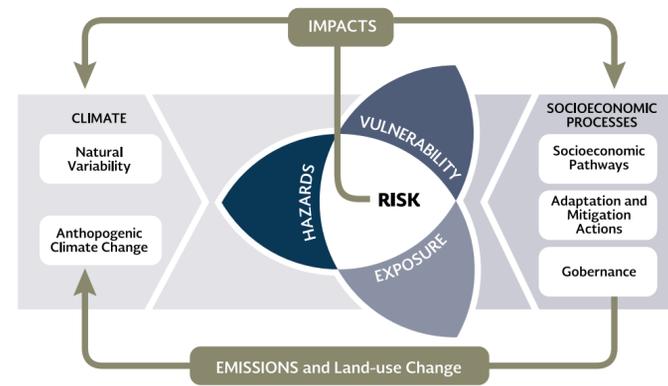


Figure 1. Risk components, according to the Intergovernmental Panel on Climate Change (IPCC).

The mutual influence between social and ecological vulnerability leads to an overall vulnerability of the socio-ecosystem that is the social and ecological system as a whole.²

The above assumptions suggest that the courses of action should be directed to conserve and support social and biological diversity, increase resilience, enhance sustainability, and reduce the vulnerability of socio-ecological systems to climate change.



Figure 2. Relation between resilience and vulnerability

In this document, integrated landscape management and connectivity among PA and their transition zones are of particular relevance³ as both increases the resilience of the socio-ecosystem. In the face of climate change, the static concept of Protected Areas requires rethinking, in the understanding that areas are dynamic sites in space and time that contribute to increase the adaptability of ecosystems and human communities.

Thus, CONANP's recently revised Climate Change Strategy considers and integrates the concepts of adaptation, mitigation, resilience, vulnerability, risk, and landscape connectivity in a set of courses of action aiming to enable the institution to fulfill its mandate, in a context of climate change.

General objectives:

- Increase the adaptability of terrestrial and marine ecosystems, and people who inhabit in and depend on them.
- Contribute to mitigate climate change through the carbon dioxide (CO₂) capture and storage in natural ecosystems.
- Work in coordination with all sectors of society and levels of government towards adaptation and mitigation of climate change in terrestrial and marine ecosystems.

2 León, *et al.*, 2009. http://www2.ine.gob.mx/publicaciones/consultaPublicacion.html?id_pub=609

3 Ervin, *et al.*, 2010. http://ec.europa.eu/environment/nature/natura2000/index_en.htm

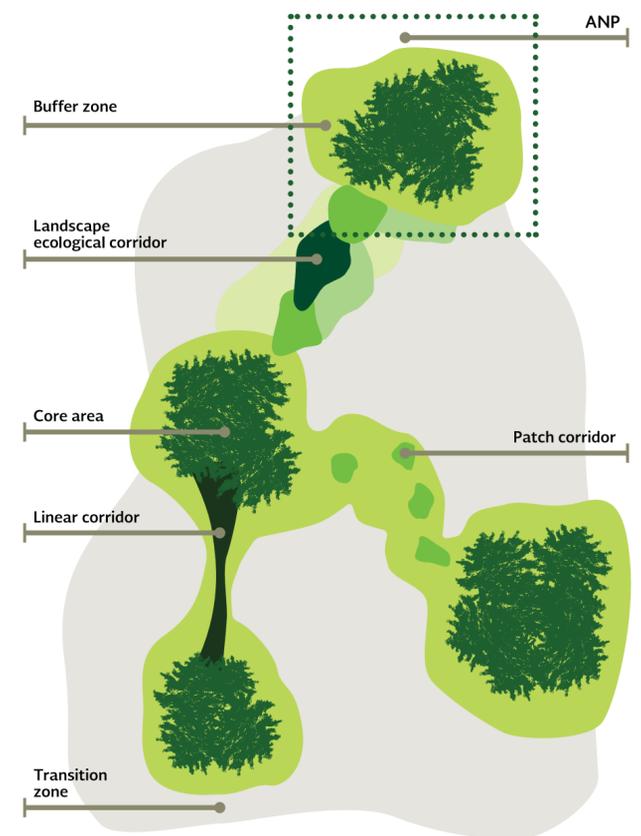


Figure 3. Landscape connectivity and integral landscape management of Protected Areas in a context of climate change.

FEDERAL PROTECTED AREAS OF MEXICO



ACCOMPLISHMENTS

- System to estimate forest cover change.
- Automatic Meteorological Stations network.
- Adaptation programs.
- Actions implemented in PA.
- Important investment portfolio in climate change matters and PA.
- Establishment of the "Alliance for the Resilience of Mexico"

POSSIBLE FUTURE SCENARIOS

- Drought tendency is constantly increasing.
- In the north and center of Mexico, heat waves are exacerbating.
- In coastal zones, floods probability is increasing.
- Winter temperature has a ~ 1.3°C increment.
- There is little certainty of precipitation patterns.
- Extreme meteorological events are increasing.



CLIMATE CHANGE STRATEGY FROM PROTECTED AREAS EXECUTIVE SUMMARY





COMPONENT: INSTITUTIONAL COORDINATION

To harmonize public policies and establish inter- and intra-institutional agreements that help to reduce vulnerability and mitigate climate change.

STRENGTHENING OF INTER- AND INTRA-SECTORIAL MANAGEMENT

- To foster the participation of the CONANP in regional and national planning bodies to reach collaborative agreements on climate change and conservation.
- To influence over different territorial management agencies in order to achieve landscape management and connectivity among PA, their transition zones and priority conservation areas.
- To promote the implementation of measures to adapt to and mitigate climate change, by including climate change criteria in the rules of operation of subsidy programs that apply in PA and transition zones.

STRENGTHENING COORDINATION ACROSS LEVELS OF GOVERNMENT

- To integrate and coordinate actions among federal, state, and municipal Natural Protected Areas to facilitate the design of PA systems.
- To support the participation of municipalities in the Advisory Boards of the PA to address climate change.
- To strengthen states and municipalities in order to develop State Sectorial Programs and instruments of climate action, to ensure the inclusion of guidelines for conservation, sustainability and connectivity.

STRENGTHENING OF INSTITUTIONAL LEADERSHIP

- To create an international information platform for sharing knowledge and actions on climate change and PA.
- To reinforce the know-how of CONANP on territorial management at a regional level.
- To create communication mechanisms within and across the PA to share best practices. and up-to-date scientific information on climate change.



COMPONENT: LANDSCAPE MANAGEMENT IN CONTEXT OF CLIMATE CHANGE

To recover connectivity among priority ecosystems based on landscape management in a context of climate change.

INTEGRATED LANDSCAPE MANAGEMENT

- To identify priority regions to establish connectivity across ecosystems to ensure conservation and restoration of ecosystem services.
- To promote conservation schemes, other than PA, that help to conserve and restore ecosystem functions, and reduce fragmentation, e.g. payments for environmental services, voluntary areas for conservation, and community forestry.
- To create mechanisms (funds, trusts, partnerships) that increase financial capabilities of PA, transition zones and priority conservation areas to increase connectivity.
- To design and implement adaptation programs to climate change in the PA, transition zones, and priority conservation areas.

DIVERSIFICATION OF PRODUCTIVE ACTIVITIES TO REDUCE VULNERABILITY TO CLIMATE CHANGE

- To promote the diversification of sustainable productive activities and increase the value of the products and services offered by the PA, transition zones, and priority conservation areas.
- To promote and disseminate best practices regarding production, marketing, and service delivery in and around the PA.
- To increase valuation and payment schemes for environmental services in the PA and priority conservation areas.

CONSERVATION AND RESTORATION OF NATURAL ECOSYSTEMS TO CONSERVE AND ENHANCE CARBON STORAGE

- To promote studies to identify reservoirs and potential areas for carbon sequestration, by estimating carbon content balances (terrestrial and coastal).
- To integrate carbon capture and conservation actions in the Management Programs of terrestrial and marine PA.
- To support early actions of the Reducing Emissions from Deforestation and Forest Degradation mechanism (REDD+) and voluntary carbon market schemes.



COMPONENT: KNOWLEDGE FOR DECISION MAKING

To rely on updated scientific knowledge, effective monitoring, and efficient assessment systems to make robust decisions in a context of climate change.

TO CONSOLIDATE AND ENHANCE THE TECHNICAL AND ORGANIZATIONAL SKILLS TO ENSURE THE CORRECT IMPLEMENTATION OF ADAPTATION AND MITIGATION MEASURES

- To ensure basic and advanced training on concepts, methods, and tools regarding adaptation and mitigation matters.
- To include technical personnel as focal points within the institution to support processes in the territory, and to ensure quality in the planning and implementation of climate change measures.
- To increase operational capabilities in the PA and to increase resources for adaptation and mitigation measures.

MONITORING SYSTEMS AND RISK MANAGEMENT

- To develop indicators, protocols, and coordination agreements to monitor the effects of climate change in the PA.
- To develop assessment schemes to verify periodically the results of the adaptation and mitigation measures for climate change in the PA.
- To develop long-term survey programs for ecological and climate monitoring in the PA, transition zones, and priority regions for conservation, in order to assess the impacts of climate change.
- To collaborate with universities, civil society organizations (CSO), and government agencies to develop capacity building programs, for staff and other key players in the PA, to prevent and act against hydro-meteorological hazards.

KNOWLEDGE MANAGEMENT

- To ensure the documentation and systematization of lessons learnt in adaptation and mitigation matters from the PA, e.g. best practices.
- To promote the sharing of knowledge and experiences on climate change.
- To foster studies on valuation of ecosystem services in the PA, transition zones, and priority regions for conservation.



COMPONENT: SOCIAL PARTICIPATION AND COMMUNICATION

To increase the level of co-responsible and equitable participation of key stakeholders, in climate change mitigation and adaptation actions, in PA.

ENVIRONMENTAL EDUCATION TO ENHANCE ACTIONS

- To implement environmental education and communication programs on a national level to promote Natural Protected Areas and other conservation schemes, as effective national security strategies against climate change.
- To share best practices, resulting from inter-sectoral coordination, that enable adaptation to climate change in PA and priority conservation areas.
- To involve residents and neighbors of the PA in the development and implementation of adaptation and mitigation measures for climate change.

STRENGTHENING LINKS AND WORKING SCHEMES WITH SOCIETY

- To develop capacities among PA communities to understand and respond to climate change and related hazards.
- To strengthen the participation of civil society organizations and academia in the Advisory Boards and in the Technical and Scientific Councils of the Natural Protected Areas.
- To consolidate the Mexico Resilient Alliance: Protected Areas, Natural Responses to Climate Change, as an opportunity to provide feedback and suggestions for public policy issues on climate change.

