

# VALUATION OF ECOSYSTEM SERVICES PROVIDED BY IZTACCÍHUATL-POPOCATÉPETL NATIONAL PARK



Photo: Nashieli González

Photo: Yadira López

Natural Protected Areas (NPAs) benefit society by providing a range of ecosystem services. These include the provision of food, clean water, climate regulation, pollination, erosion control and places for recreation. Nonetheless, the value of these services is not broadly understood. Benefits tend to be dispersed or are wrongly considered infinite. As a result, they are “invisible” within the economic system, and are therefore not valued.

In the case of Iztaccíhuatl-Popocatepetl National Park, lack of information about the economic and social benefits that the area generates has kept it from being valued as a key contributor to human wellbeing and development at both local and regional levels. This situation has resulted in the degradation of ecosystems in the Park as a result of fires, cattle ranching, and the unsustainable use of forest products. Additionally, the Park has limited resources for management, which makes it difficult to adequately address threats.

The purpose of this document is to effectively communicate the benefits generated by Iztaccíhuatl-Popocatepetl National Park, as calculated in a study that quantified the economic value of the following ecosystem services:

- Carbon sequestration
- Erosion control
- Surface water infiltration
- Provision of non-timber forest products

Additionally, the study valued the contribution of Park tourism to the local economy



Iztaccíhuatl-Popocatepetl National Park was established in 1935, with an area of 39,819 hectares. It contains central Mexico's most important remnants of coniferous forests and high mountain meadows, and is an extremely important biological corridor. In 2010, a larger area (171,774 hectares) was designated by UNESCO as Los Volcanes Biosphere Reserve.

## MAIN FINDINGS



Recreation generated by the Park is worth **9.2 million pesos** (USD 0.51 million) per year to the local economy.



**161 million pesos** (USD 9 million) in additional benefits could be generated annually by adopting sustainable practices – improved farming and ranching and sustainable forest management – in both the National Park and Los Volcanes Biosphere Reserve (designated by UNESCO).



The ecosystem service of surface water infiltration provided by the National Park is worth **199 million pesos** (USD 11 million) per year; in the UNESCO designated Los Volcanes Biosphere Reserve, water infiltration is valued at **1.168 billion pesos** (USD 64 million) per year.



Improved management of Izta-Popo National Park would generate additional economic benefits of **47.5 million pesos** (USD 2.6 million) per year as a result of increased water infiltration and carbon sequestration.



Implementing more sustainable economic activities would avoid costs of at least **473,000 pesos** (USD 26,000) per year in erosion control infrastructure.



**13 million** people in the states of Puebla, Tlaxcala, Morelos and Mexico City benefit from water provided by the Park.

**NATURAL PROTECTED AREAS PROVIDE WATER FOR PEOPLE**



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## RECOMMENDATIONS

1. Align agricultural and environmental policies in the region.
2. Promote the adoption of improved agricultural and forestry practices by local residents.
3. Increase the budget and invest in projects that promote management and protection of ecosystems – doing so is a sound investment.
4. Reconsider the option of Los Volcanes Biosphere Reserve as a mechanism to unite and guide the multiple efforts aimed at guaranteeing the provision of ecosystem services to people in Mexico City, Puebla, Morelos, and Mexico States.

Based on these results, a priority for decision-makers at all levels of government is to take actions to secure the ecosystem services provided by Natural Protected Areas, which are a key building block to economies at regional and national scales. The solutions may seem complex, but the benefits for human wellbeing and economic activity are well worth the cost.