



Iztaccíhuatl - Popocatepetl National Park

Project Details

COMPANY

The Volkswagen Group

COUNTRY

Mexico

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Izta-Popo - Replenishing Groundwater through Reforestation in Mexico

CONTEXT

The Volkswagen Group (the Group), headquartered in Wolfsburg, Germany, is one of the world's leading automobile manufacturers. In 2014, the Group's 592,586 employees delivered 10.137 million vehicles in 153 countries, which comprises a 12.9 percent of the global market share. The Group is comprised of twelve brands (Volkswagen Passenger Cars, Audi, SEAT, ŠKODA, Bentley, Bugatti, Lamborghini, Porsche, Ducati, Volkswagen Commercial Vehicles, Scania and MAN), operating 118 production plants in 20 countries across Europe and 11 countries in the Americas, Asia, and Africa.

The Group aims to create lasting value for the Company, its employees, and its shareholders, but also for the countries and regions in which they operate. This all-embracing view of sustainability is shared by all twelve brands, their companies, and all employees across the Group. Together they work to find solutions to the substantial challenges of the future. Indeed, markets are shifting, resources are becoming scarcer, emissions regulations are tightening all over the world, and booming cities call for new and intelligent traffic and mobility concepts. The Group considers it part of their responsibility to find the right answers to these trends.

[Volkswagen de México](#) operates a production plant in the Puebla-Tlaxcala Valley (Figure 1), a region of Mexico where water supply is particularly critical. Although the wastewater produced by Volkswagen de México is treated and recycled, it has been clear for years that there would not be enough fresh water for the growing city of Puebla and the industrial area nearby. In this context, securing a reliable water supply was critical to ensure the stability of Volkswagen de México production efforts.



Figure 1. Volkswagen de México Plant

Comisión Nacional de Áreas Naturales Protegidas partnered in the Iztaccíhuatl-Popocatepetl (Izta-Popo) project to help secure a water supply for the local population and future plant operations.

OBJECTIVE AND PROJECT OVERVIEW

The primary objective of the project was to secure a reliable water supply to ensure the stability of production for Volkswagen de México, and the availability of water for local communities.

Analysis found that groundwater replenishment in the Puebla Tlaxcala valley was highly contingent upon the functionality of the ecosystems on the volcanic slopes of Popocatepetl and Iztaccíhuatl. Years of deforestation from illegal logging, livestock farming, and fires had led to increased water runoff, and loss of capture and storage in the groundwater table.

It was important to re-plant the deforested slopes between the two volcanoes in the source region of the Rio Atoyac, and to construct pits and earthen banks to facilitate infiltration.

THE BUSINESS CASE

The additional water supply supports Volkswagen de México's long term operations in the region. Additionally, this project will also help prevent water rationing, rising water prices, and unrest in the local population, ensuring Volkswagen de México retains their license to operate in Mexico.

DECISION MAKING PROCESS

Volkswagen de México partnered with the Comisión Nacional de Áreas Naturales Protegidas to develop this project. Because of the effects of deforestation, existing conditions at Iztaccíhuatl - Popocatepetl National Park were not effectively retaining water. The team proposed a system of natural infrastructure alternatives—trees, pits and earthen banks—to enhance rainwater capture.

A 10-person environmental planning team developed the project. Leadership support within Volkswagen de México for this project, as well as environmental protection, were critical components of progress toward implementation—as was the support of the Secretary of the Environment for Mexico, who supported the project as one component of improvements planned for the Iztaccíhuatl - Popocatepetl National Park.

PROJECT DETAILS

The project aimed to restore the functionality of the ecosystems on the volcanic slopes of Popocatepetl and Iztaccíhuatl. To facilitate this, approximately 300,000 Hartweg's Pines, a tree native to Mexico (Figure 2) were planted in 2008, on 300 hectares (Ha) of land located at an altitude of up to 4,000 meters.

To support permanence of the pines, which grow very slowly, nutrient concentration in the soil was amended with organic material (compost). Additionally, pits (Figure 3) and earthen dams (Figure 4) were constructed to ensure a source of water was retained while the trees were establishing.



Figure 2. Hartweg Pine Planting



Figure 3. Pits



Figure 4. Earthen Dams

Over six years, the Iztza-Popo project team planted 490,000 trees, and installed 91,000 pits and 430 earthen banks to preserve water on over 750 Ha (Table 1). The plantings, pits, and earthen banks will enable more than 1,300,000 cubic meters of additional water per year to be fed into the ground reserves in the source region, which is significantly more groundwater than Volkswagen de México itself consumes every year. Over the long term, the additional biomass will also help sequester carbon dioxide and improve living conditions for the native fauna.

Table 1
Iztza-Popo Ecosystem Improvements

Year	Area Covered (Ha)	Pits	Earthen Banks	Trees
2008	300	21,000	100	300,000
2010	200	16,000	200	100,000
2011	-	-	-	20,000
2012	100	40,000	30	30,000
2013	150	14,000	100	40,000
Total	750	91,000	430	490,000
2013-2022	Maintenance			

Volkswagen de México earmarked US\$3 million to fund the next steps of the project (namely, ongoing maintenance from 2013 to 2022).

LESSONS LEARNED

Key lessons learned from this project include:

- When involving local people in the planting and maintenance work, it is important to rely on their experience, and allow them to take ownership of their part in the project.
- The participation and stakeholder buy-in from other organizations, including the agency responsible for the Puebla State drinking water, was key to the project’s success.

- It was important to include team members with a working knowledge of sustainable practices in water use and development for natural resources.
- This project was an opportunity to create awareness within local communities, and to educate students at different levels (elementary and high school) on the importance of environmental stewardship through the example of the project.

FUTURE IMPLEMENTATION AND NEXT STEPS

The success of the Itza Popo project has prompted Volkswagen de México to initiate a similar new project involving 100 hectares of trees to be planted in Filao, Mexico in 2015.

ABOUT THE WORLD BUSINESS COUNCIL FOR SUSTAINABLE DEVELOPMENT (WBCSD)

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The WBCSD provides a forum for its member companies - who represent all business sectors, all continents and a combined revenue of more than \$8.5 trillion, 19 million employees - to share best practices on sustainable development issues and to develop innovative tools that change the status quo. The council also benefits from a network of 70 national and regional business councils and partner organizations, a majority of which are based in developing countries.

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