

Volcano Valley Reforestation. 2020

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Introduction

The trees made possible by the cocoa farmers producing *Die Gute Schokolade* are planted by farmers in the origin of cacao.

Reforestation and restoration planned and implemented in conjunction with farmers and local, small-scale landholders increases the likelihood of the long-term continued existence of the restored forests, especially in relatively densely populated areas. Similarly, this collaboration model is also likely to contribute the highest social welfare gain, since farmers are paid directly for their contribution to the reforestation effort and help select the reforestation sites.

After searching extensively for a restoration partner with which to implement such a farmer-centric reforestation model, particularly to plant the trees funded by *Die Gute Schokolade* and *Die Gute Bio Schokolade*, Plant-for-the-Planet was delighted to discover the preexisting work and extensive experience of PROBOSQUE.

The State of Mexico (Edomex) is 22,487.67 km² in size and 48 % of its territory is covered by pine, oak and fir forests. Nonetheless, the exploitation of these forests has been extensive due to illegal logging, excessive use of firewood and charcoal, intensive cattle grazing and agricultural activities,

creation of roads and highways as well as an accelerated population growth have contributed to the degradation and reduction of this forests (PROBOSQUE, 2021).¹

The *Protectora de Bosques del Estado de México*, PROBOSQUE, is a governmental organization established in 1990 in charge of improving the conservation and protection status of the forest resources of Edomex. PROBOSQUE achieves this with diverse programs, including “*Payments for Environmental Services*”, “*Sustainable Forestry Management*”, “*Reforestation Edomex*”, among others.

In particular, Reforestation Edomex is a program focused on conserving forests and soil by providing funding to farmers with forestry land to conserve and recover the forest of Edomex.

Plant-for-the-Planet collaborates with PROBOSQUE to develop strategies and actions to improve the quality of life of the inhabitants of Edomex and ensure the sustainable development of forests and the conservation of biodiversity and environmental services. As a result of the first phase of our collaboration, 2.8 million trees were planted in regions of the *Toluca Valley Reserve*. These plants belong to 12 different species including pines, cypresses, agaves and mesquite plants.



Acacia gaumeri seeds

Tree planting activities

In 2020, we started the second phase of our collaboration and planted 1,500,010 trees on 1,811.53 hectares in different municipalities of the State of Mexico (Figure 1a). These municipalities are located in the Transvolcanic Belt (Figure 1b) in which the dominating ecosystems are conifer forests.

During the planting activities of 2020, participation was open to a range of actors. Three main types of communities participated in the reforestation program. These actors included individual farmers, farmers organised in civil organizations (NGOs) and farmers in traditional community organisations (Ejidos) (Figure 2). 1,317,905 trees were planted by 66 Ejido farmer communities. A further 140,455 trees were planted by individual farmers and the planting of the final 40,000 trees was conducted with an NGO partner. Most of

these farmers had land with a certain degree of degradation, however, the intensity of degradation varied widely.

In Phase Two, we were able to increase the biodiversity of our reforestation and restoration effort. The saplings used for these activities belong to 23 species and 8 plant families. All saplings were grown under controlled conditions in the PROBOSQUE nurseries and were provided to each one of the participants when saplings reached a height above 30 cm.

All tree planting sites are mapped and are being made available at www1.plant-for-the-planet.org/toluca (see site tab in the top right to navigate between project sites). The exact number of trees per species is documented for each site.

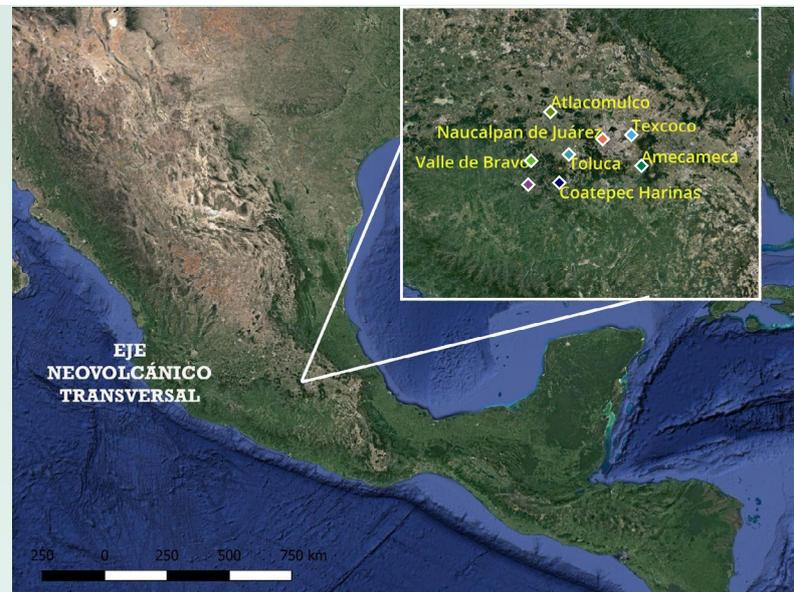
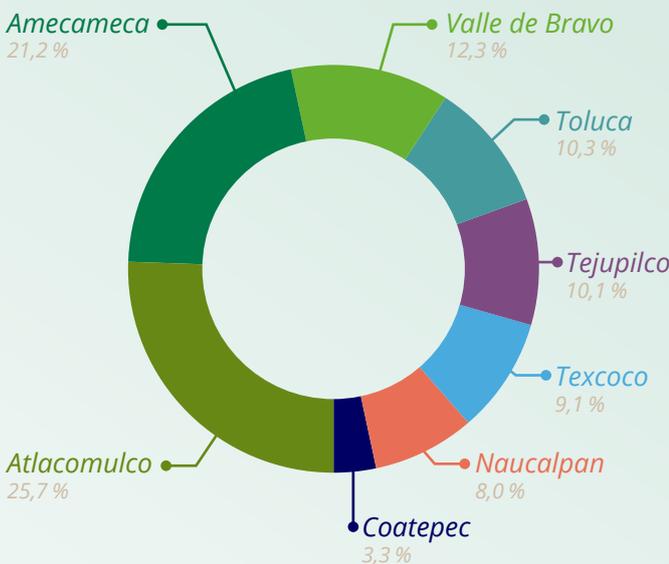


Figure 1. a) Percentage of trees planted in each region of the State of Mexico. The total number of trees planted was 1,500,010;

b) Location of the main regions that participate in the program.

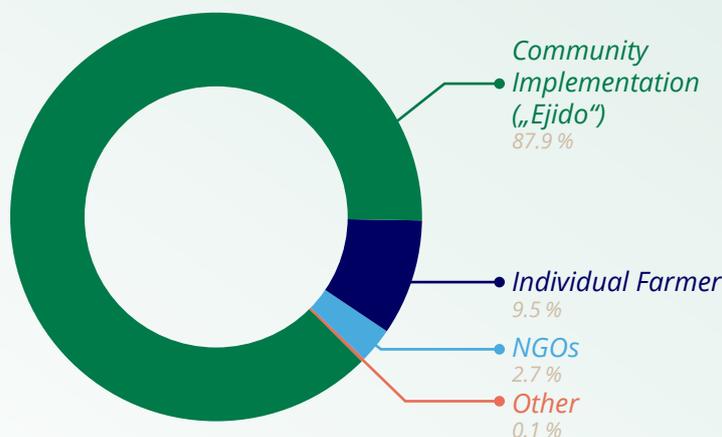


Figure 2. Percentage of trees planted per community type. NGOs refers to farmers that belong to a small civil-society organization. Community Implementation refers to farmers who participated jointly within their traditional Ejido communities, planting on their joint land. And Other are farmers that did not disclose the type of organization they belong to.

Table 1. Families and species planted in 2020 in the Toluca Valley Reforestation program.

Family	Species
Pinaceae	<i>Abies religiosa</i>
Agavaceae	<i>Agave atrovirens</i>
Agavaceae	<i>Agave salmiana</i>
Rosaceae	<i>Crataegus mexicana</i>
Cupressaceae	<i>Cupressus lusitanica</i>
Fabaceae	<i>Mimosa guatemalensis</i>
Pinaceae	<i>Pinus ayacahuite</i>
Pinaceae	<i>Pinus cembroides</i>
Pinaceae	<i>Pinus greggii</i>
Pinaceae	<i>Pinus hartwegii</i>
Pinaceae	<i>Pinus leiophylla</i>
Pinaceae	<i>Pinus montezumae</i>
Pinaceae	<i>Pinus oocarpa</i>
Pinaceae	<i>Pinus patula</i>
Pinaceae	<i>Pinus pseudostrobus</i>
Pinaceae	<i>Pinus rudis</i>
Pinaceae	<i>Pinus teocote</i>
Fabaceae	<i>Prosopis</i> sp.
Fagaceae	<i>Quercus crassipes</i>
Fagaceae	<i>Quercus</i> sp.
Anacardiaceae	<i>Schinus molle</i>
Fabaceae	<i>Senna multiglandulosa</i>
Meliaceae	<i>Swietenia humilis</i>

Total: **23** Species



Abies religiosa
Detail of leaves and immature cones²



Pinus hartwegii
at 4030 m, Cofre de Perote, Mexico³



Schinus molle⁴

Voices of people involved in the program

Spanish

Petra Espinosa

"Fue una experiencia muy interesante que realicé con mi familia y muchas personas de PROBOSQUE. Yo hago esto para el futuro de mis nietos y porque me ayuda a tener beneficios económicos de mi propiedad".

Dr. Ángel Leiva

"Yo conozco Plant-for-the-Planet y la hermosa labor que realizan, nosotros nos sentimos muy agradecidos de formar parte de su trabajo".

Engineer Eduardo Rodríguez

"Las plantas que fueron donadas fueron una gran ayuda para nuestra investigación".

Translation

Petra Espinosa

"It was a very interesting family experience done with the people from PROBOSQUE. I do this for my grandchildren's future and I also benefit economically from my property".

Dr. Angel Leiva

"We feel very honored to participate in the beautiful labor Plant-of-the-Planet is doing".

Engineer Eduardo Rodríguez

"The plants we received from Plant-for-the-Planet are helping us in our research".



Pine sapling



Oak sapling



Local farmer planting



Local farmer transporting saplings

References

- 1.) PROBOSQUE. 2021. Antecedentes. Protectora de Bosques del Estado de México.
<http://probosque.edomex.gob.mx/antecedentes>
- 2.) Bodofzt, [CC BY-SA 4.0](#)
- 3.) [Jose Francisco Del Valle Mojica from Xalapa, Ver., Mexico, CC BY 2.0](#)
- 4.) [CC BY-SA 3.0](#)



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