

Conservation actions for agrobiodiversity in the Sierra Tarahumara

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“Gardens of the Anthropocene: how botanic gardens are reconnecting people to plants”

CEPA Fair COP13. 2016, Cancún México

Jardín Botánico del Instituto de Biología Universidad Nacional Autónoma de México



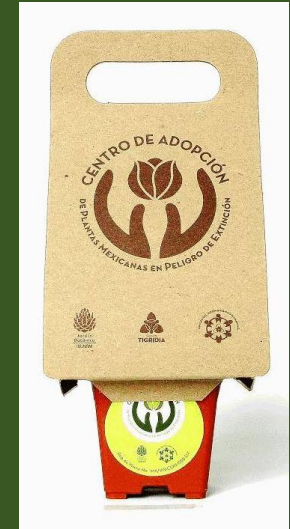
Area: 12 .6 ha

Natural reserve: Reserva del Pedregal de San Ángel (REPSA) 237.3 ha

Academic personal: 30 Ethnobotanist: 7



Approx. 1600 species



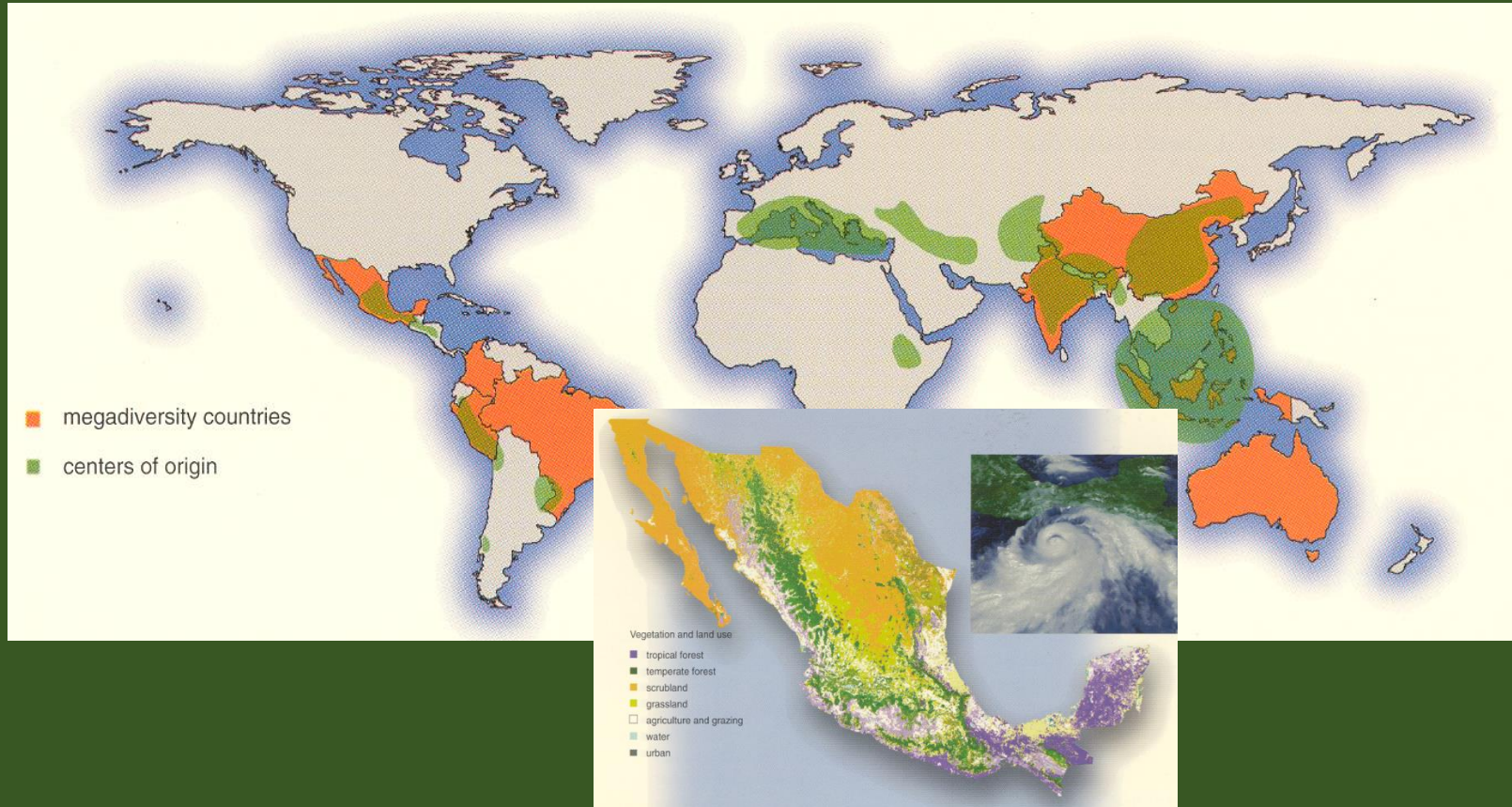
- Objectives: Education & Conservation
- Includes 30% especies of the Mexican endanger species (NOM 059)
- Adopted plants = 18,000
- Adoptive parents = 16,000



Javier Caballero
Linda Balcázar
Iniciated this Project
2013

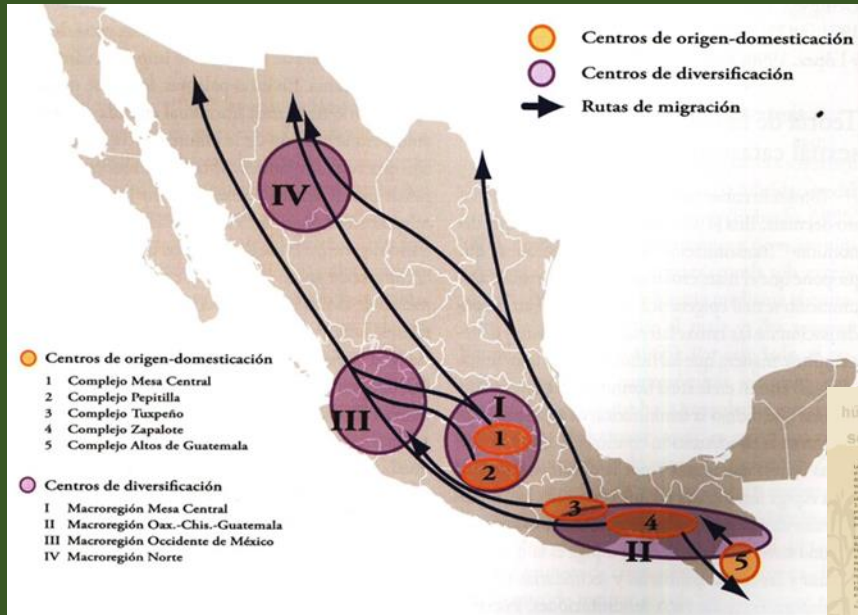
México - a megadiverse country

- Biological diversity (30,000 vascular plant species)
- Center of origin of agriculture



Maíz – *Zea mays*

Mexico: center of origin principal species in Mexican alimentation



Maíces mexicanos

México es el centro de origen, domesticación y diversificación del maíz

húmedos cálidos secos fríos
 10,000
 600

El maíz es el cultivo más importante de México y el más diversificado del mundo. En México se cultivan más de 10,000 variedades de maíz, que se agrupan en 600 variedades locales. Estas variedades se adaptan a diferentes condiciones climáticas y de suelo, lo que les permite sobrevivir en una gran variedad de entornos. El maíz es un alimento básico para el pueblo mexicano y es una parte importante de su cultura y tradición.

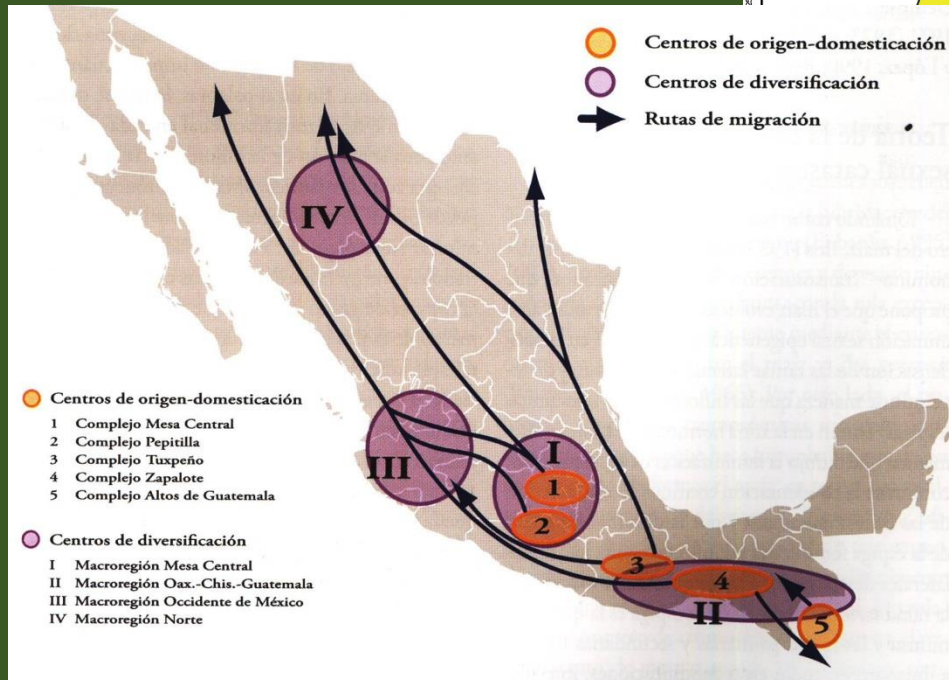
El maíz es patrimonio biológico, agrícola, cultural y económico de México
 Comisión Nacional para el Conocimiento y Uso de la Biodiversidad
www.conabio.gob.mx

CONOCER LA RIQUEZA NATURAL DE MÉXICO
BIODIVERSIDAD MEXICANA
www.biodiversidad.gob.mx

Sustainability of maize in México?

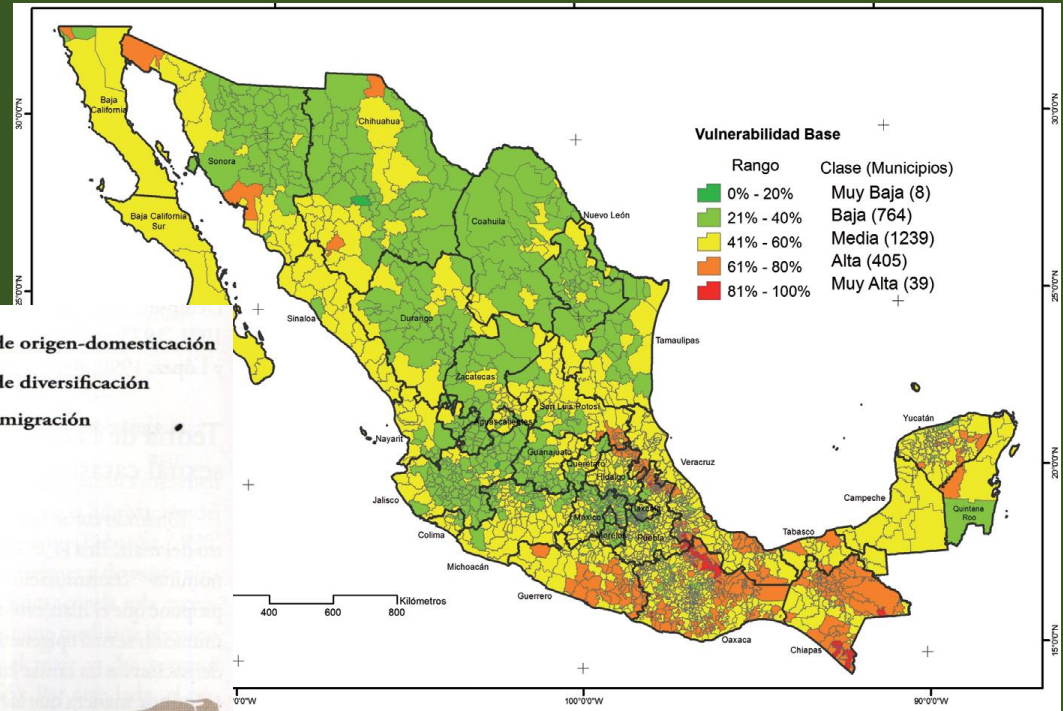
Diversity and production vulnerability

Centers of origin and centers of diversification of maize



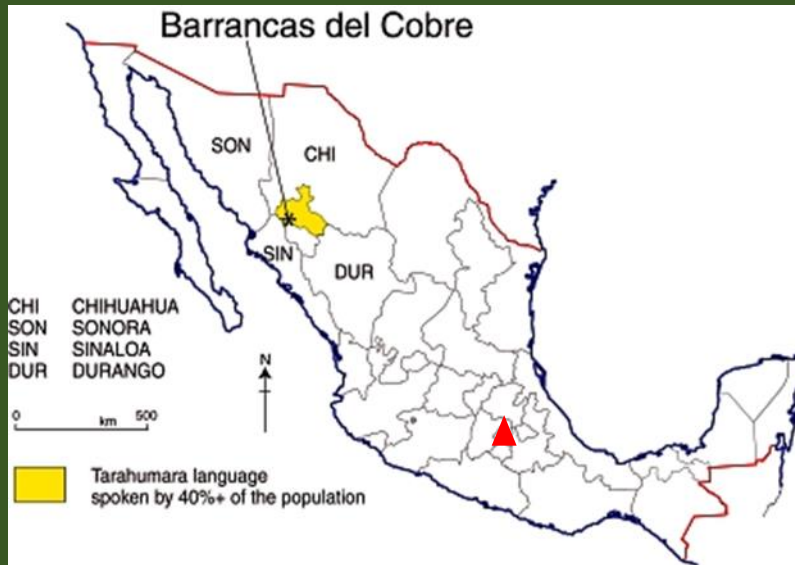
Kato, Mapes, Mera, Serratos, & Bye 2009

Index of vulnerability to climate change by municipalities



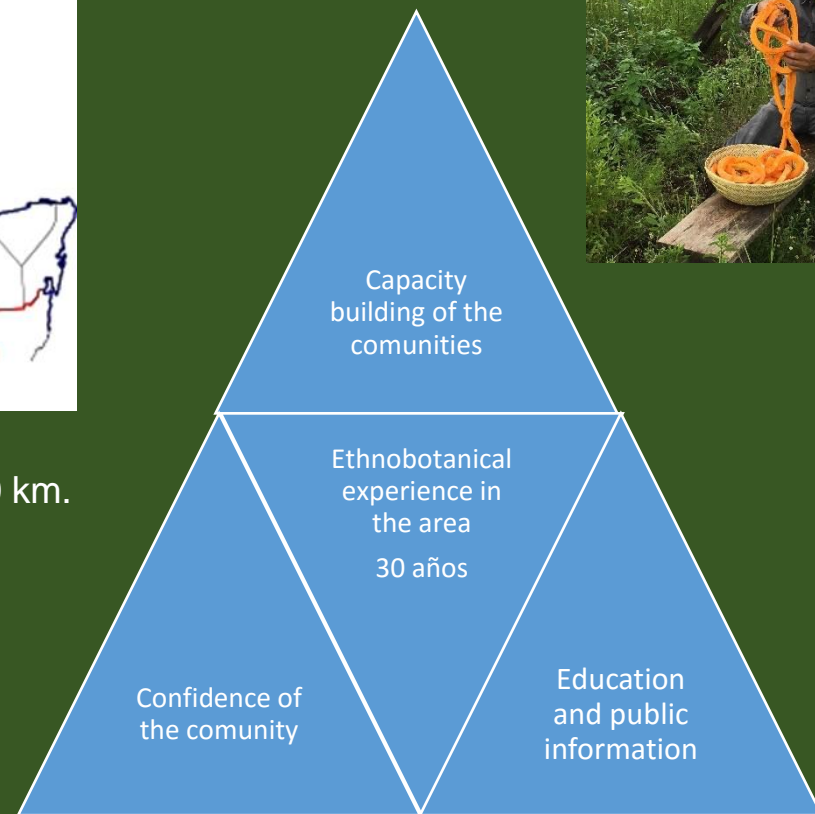
Monterroso et al. 2014. Indicadores de vulnerabilidad y cambio climático en la agricultura de México

How far should our reach be beyond our physical garden boundaries/walls?



Distance from Mexico City to Chihuahua: 1600 km.

Generate an on-site conservation model that values the resources of its agrobiodiversity and may be applicable in several parts of the country



S.O.S

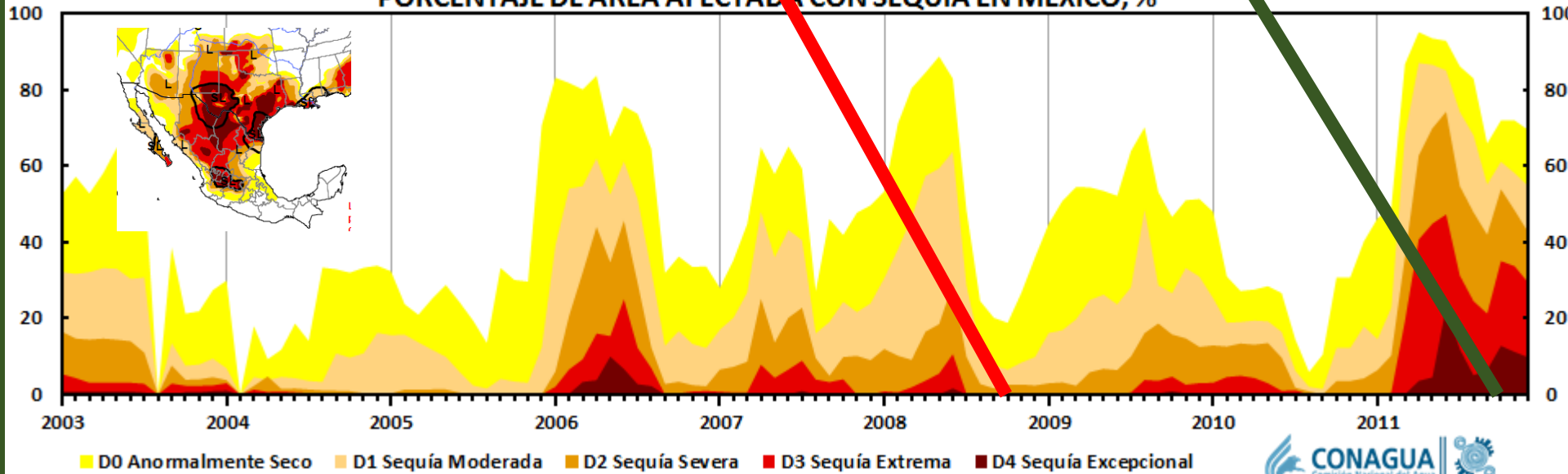
Conservation of agrobiodiversity in the Sierra Tarahumara In response to two years of exceptional drought

Intensidad de la Sequía:

- D0 Anormalmente Seco
- D1 Sequía - Moderada
- D2 Sequía - Severa
- D3 Sequía - Extrema
- D4 Sequía - Excepcional



PORCENTAJE DE AREA AFECTADA CON SEQUIA EN MEXICO, %



What type of involvement in the wider community should we have?



The Rarámuri (Tarahumara) requested help to avoid the loss of their maize

"Semillatón Project", accompanying the Sierra Tarahumara:

An example of citizen collaboration and the Mexican Gastronomic Family

It began in 2012



Distribution of seed

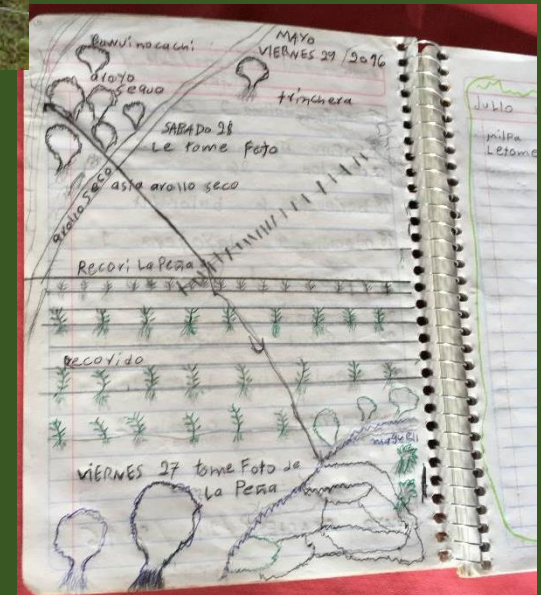
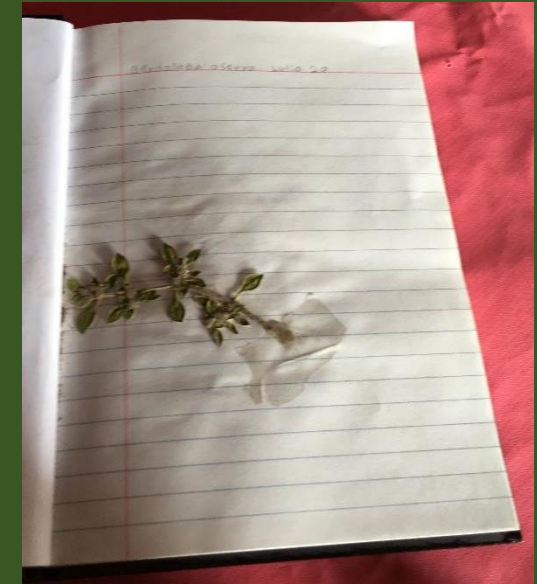
In April 2013 (after seed incrementation) we returned to the Rarámuri 26 tons of planting seed of maize to different communities of the ST for cultivation in the 2013 cycle with the help of CONANP



Should the BG be mandated by the State to have a direct influence on the actions of citizens in terms of promoting conservation, sustainable living?

The "accompaniment" involves local actions such as:

Strengthening local knowledge of agrobiodiversity



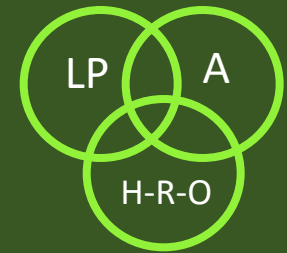
Pilot projects: includes local production and testing traditional products with potential consumers



Programmes to reevaluate the traditional foods for the local community and to educate the tourists about the values of local agrobiodiversity



Innovative thinking



Chef. Ana Rosa Beltrán del Río
Chef. Jorge Álvarez Vega



Multiplication of these efforts

Capacity building of community leaders and key farmers



Rarámuri to rarámuri
appropriation of the
knowledge and solutions



Dissemination of results among the other communities
Revaluation - visual documentation of their cultural values using
contemporary means of communication (videos)

Example:

- **El pinole y el esquiate en la Sierra Tarahumara**

