MILPA PRACTICES IN MEXICO
CONTRIBUTING TO SUSTAINABLE AGRO-FOOD SYSTEMS

By Laura Moreno Altamirano

The traditional agricultural system of the Milpa continues to be actively promoted in Mexico with the contribution of different Federal Government bodies, universities and organizations committed to the agroecological transition in the country.

Milpa is an agricultural system of millenary tradition in Mexico made up of a polyculture which constitutes a dynamic space of genetic resources corresponding to the agro-ecological environment of each region of the country. Maize is the main crop and cohabits symbiotically with a diversity of crops such as beans, pumpkins and chilli peppers, tomatoes and *quelites*, among other local crops.

Already in 2010 the traditional Mexican cuisine was officially inscribed on the Representative List of the Intangible Cultural Heritage of Humanity by UNESCO. The recognition highlights the community participation in the entire traditional food chain (from planting and harvesting to cooking and eating), the basic elements of the system (founded on corn, beans and chili), and the unique farming method of Milpa.

The Milpa is also part of today's challenges launched by the international community to urgently implement a transition to more sustainable food systems at all levels and in all countries. The principles and techniques of the Milpa system, that recover the high ancestral knowledge about agriculture of the native peoples of Mesoamerica, contribute to this transition for food security, to promote healthy eating, for the protection and sustainable use of biodiversity and the natural resources of the territories.

The focus on ecosystems

CONABIO, the National Commission for the Knowledge and Use of Biodiversity, highlights that the interaction of the large number of various species turns the Milpa into an ecosystem, where the different resources (water, light, soil and nutrients) are used in a complementary way. In these ecosystems ecological interactions are favoured (biological control of insects, soil fertility and pollination) providing different benefits not only to the species that coexist but also to the communities and farmers that manage them, ensuring products that promote a balanced diet and food security. These ecosystems also ensure services related to increased productivity, climate change mitigation and adaptation, erosion control and soil loss.

Polyculture and agro-ecology

In the Milpa system several cultivated plants share the same place, for at least part of their life cycle, so that the use of the resources necessary for their growth is more efficient than in the production of a single crop. Diversification of crops is mentioned by FAO as key element in agroecological transitions to ensure food security and nutrition while conserving, protecting and enhancing natural resources.

Polycultures imply higher biodiversity, better soil quality, greater water retention capacity and energy efficiency, and greater resilience to climate change. With respect to conventional monocultures, multi-crops improve the regulation of weeds, diseases and pests, while increasing pollination services. Different organisations working in Mexico for ecological agriculture, develop agroecological Milpa systems adapted to the different territories, selecting native seeds and improving the use of drought-tolerant varieties customised to each zone, the use of organic and green manures and biofertilizers, agroecological management of pests and diseases, crop diversification, association and rotation and soil conservation.

Biodiversity protection

Farmers use native seeds, which are saved from the previous harvest, transforming the Milpa systems into dynamic reservoirs of biological and nutritional resources. CONABIO points out that Milpas have played an important role in being habitat for various species. Throughout the country there are around 59 native maizes varieties with distinct characteristics, five species of beans and four of pumpkin, different wild and domesticated chili peppers, variants of tomatoes and husk tomatoes, *quelites* used temporarily and others cultivated all year round due to their commercial importance. Recent studies have documented up to 191 types of edible plants of 84 species in Milpas of the humid and sub-humid tropical zone of north-eastern Mexico. In the Milpa, the farmers also grow medicinal and colouring plants, flowers and fruit trees adapted to the different locations. By free exchanging native seeds, Milpas of different environments create reservoirs of cultivated plants that allow species to be conserved and contribute to the protection of biodiversity. In this context, the National Council for Science and Technology CONACYT reports on the successes in the defence of Mexico's biocultural wealth, due to the publication of the Presidential decision on the gradual substitution until the total suppression of glyphosate and transgenic maize.

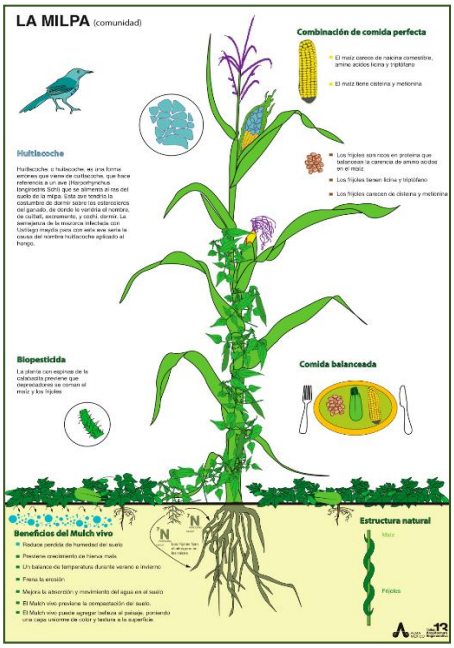
Milpa's contribution to nutrition and health

The Department of Public Health of the Faculty of Medicine of the National University of Mexico UNAM develops a set of training and dissemination initiatives to highlight the great contribution that the Milpa Mesoamerican diet can give to health and nutrition. The basic foods of Milpa are a source of energy, complex carbohydrates, maize and beans proteins combined. Vitamins and minerals are provided by fruits and vegetables, as well as by chillies. This diet has the nutrient profile recommended for healthy eating by the World Health Organisation. By taking advantage of fresh food produced in the Milpa sustainable farming systems it is possible to reduce the use of ultra-processed foods, the consumption of animal products, sugar and fat, reducing health problems such as obesity and diabetes, controlling diseases and preserving health.

Like many other traditional farming practices, the Milpa System is in danger of disappearing due to the use of inappropriate farming approaches and the abandonment of rural areas, among other causes. The patrimony of knowledge of this system, however, represents an important basis for all new trends in sustainable and environmentally friendly agriculture.

The article published in June 2021 in the Food Reviews International Magazine by academics from relevant institutes of México summarizes the scientific evidence on the bioactive elements found in the plants grown as part of the Milpa practices and their benefits for health. This

article is an example of the work that is being carried out in the country to scientifically update the contributions that the ongoing Milpa practices across Mexico bring to the new global paradigm of agri-food systems based on the resources of territories, sustainable from the environmental, economic and cultural point of view, beneficial for nutrition and health and resilient to climate change.



To know more

La dieta de la milpa - Secretaría de Salud, Mexico 2016

De la milpa a la mesa in gob.mx website

La milpa, saberes y sabores | Secretaría de Agricultura y Desarrollo Rural in gob.mx website

La Milpa el corazon de la agricultura mexicana in gob.mx

Las milpas de México - Comisión Nacional para el Conocimiento y Uso de la Biodiversidad in gob.mx website

La milpa in Biodiversidad Mexicana website

Razas de maíz de México in Biodiversidad Mexicana website

La Dieta de la Milpa - Secretaría de Salud in gob.mx website

Article in Conacyt website

Milpa intercalada con arboles frutales in gob.mx

Traditional Mexican Cuisine-UNESCO

Milpa y cultura alimentaria - UNAM

La milpa, tradición milenaria de agricultura familiar - Ciencia UNAM

Diversity in Agroecology Knowledge Hub in FAO website

The 10 elements of Agroecology in FAO website

La milpa, tradición milenaria de agricultura familiar in Simiente Disidente website

La Milpa del Buen Comer in viaorganica.org website

Hagamos milpa agroecológica - La Jornada del Campo

Article in Food Reviews International

Food Systems Summit | United Nations