



History of Domestication and Diversification of Seeds

La Via Campesina: Building shared knowledge on Peasant Seeds





History of Domestication and Diversification of Seeds

La Via Campesina: Building shared knowledge on Peasant Seeds

Training Module N°4

Created by La Via Campesina

Illustrations: Sophie Holin / La Via Campesina

Bagnolet, August, 2022

La Via Campesina: Building shared knowledge on Peasant Seeds

“Our political objective is to achieve Food Sovereignty, which aims at strengthening and rebuilding local food systems and coordinating a new model of economic and social relations based on dignity, solidarity and ethics.”

- LVC, Derio, Action Plan / Strategic Lines 2017-2020

Introduction

Each organization, region and process within La Via Campesina has the permanent task to sow, protect and harvest Food Sovereignty. This requires we fight transnational capital in all its manifestations, defend our ancestral knowledge and Mother Earth that sustains them, and sow sovereignty in each of our territories. This is what the reality of our peoples demands and this is what we have committed ourselves to within our movement.

As an integral part of this struggle, since 2003 we have been strengthening our Global Campaign for Peasant Seeds, a Heritage of Peoples in the Service of Humanity.

Several organizations of La Via Campesina carry out activities related to the recovery of peasant seed systems. These include political campaigns against threats from the seed industry and against the criminalization of peasant seed producers; advocating before public opinion for peasant seed systems and activities against national and international laws that allow and promote the privatization of seeds. Above all, there is a lot of work done with seeds themselves, a task in which women are main protagonists: especially in the rescue of local varieties and knowledge about them; as well as their revalorization, conservation, reproduction, selection, crossing, multiplication, exchange and distribution through peasant organizations. Within our communities there is an enormous variety of peasant seeds in danger of extinction, and at the same time a strong need for native seeds in sufficient quantity and quality to supply peasant and indigenous families as well as our societies.

In the course of our Global Peasant Seeds Campaign, we have gained a wealth of both political and practical experience and knowledge in the defense of peasant seeds and the rights of peoples to rescue, save, multiply, and place them at the service of humanity. In many cases, this experience and knowledge are reflected in our own profound peasant and indigenous reflections on our realities, common enemies, and strategies to be developed.

At this point in the process, we have seen that our movement has produced beautiful and richly diverse content that synthesizes our perspective on seeds at a time when we are giving greater priority to both political and technical training to accompany the different processes of social transformation around the world. Without ever neglecting the study of other sources, training from our own perspective, from our own struggle, is a strategic task that we are taking on within the movement and thanks to our organizations in the struggle for peasant seeds, we have all the conditions to do so.

Shared Contents & *Virtual Shigra*

As part of the celebration of **25 Years of Struggle for Food Sovereignty**, we share this training material in the spirit of building shared content for study, reflection and mobilization. This is also part of LVC's Global Seed Campaign, which seeks to strengthen the struggle for Peasant Seeds as the heart of Food Sovereignty, but also as a legitimate right of peoples guaranteed in Art. 19 of the United Nations Declaration on the Rights of Peasants and Other People Working in Rural Areas (UNDROP), approved in 2018.

These "Shared Contents", plus a "*Virtual Shigra*", will be organized by modules. Each module will have contents developed by LVC, partner organizations, and publishers that we believe are important to study. The contents will be distributed in three levels - Basic, Medium and Higher - each one with the minimum references that facilitators can use for the training processes, with increasing levels of complexity according to the objectives.

The modules are:

- Food Sovereignty starting from Peasant Seeds;
- Global Campaign for Peasant Seeds, a Heritage of Peoples in the Service of Humanity;
- Seeds in Peasant and Indigenous Cultures;
- **History of Domestication and Diversification of Seeds;**
- International mechanisms and organisms.

Shigra: word in Quechua language that means "a bag woven in net stitch". Since ancestral times, Andean peoples have used the *sighra* to carry or store food, plants, seeds, among others.

History of Domestication and Diversification of Seeds

Training Module N°4

Module Objective:

To learn about the historical process of domestication and diversification of peasant and indigenous seeds in the development of human food systems.

Target Audience:

Training facilitators as well as rural and urban organizers undergoing political training under the organizations of the peasant movement in its territories, with its peoples, communities, neighbourhoods, among others.

Proposed Methodology:

Collective or individual reading followed by debate to strengthen the understanding of the topic at hand. Include this module within the context of other training processes in the respective organizational structure.

The Origins of Agriculture



Our struggle and action for Food Sovereignty has given women the opportunity to make visible our historic participation in the development of the world's food systems and the role we have played since the invention of agriculture."

From the Declaration of Women La Via Campesina at the International Conference in Jakarta (2013)



In a period possibly extending from 8,000 to 20,000 years ago, human communities in different parts of the world developed processes of observation, experimentation and care of plants and animals that culminated in the creation of agriculture, one of the most revolutionary processes in the history of humanity. It was collective work, which demanded care, observation, perseverance and innovation. It depended mainly on women.

Agriculture changed not only the way we feed ourselves and live, it also changed ecosystems and territories, and created the material conditions for all the subsequent processes of formation of the different peoples and their ways of being and living, including those processes that led to the formation of social classes and what are still called "civilizing processes." Without agriculture, our human species would have survived only with a few hundred million people scattered throughout the world, or it might even have gone extinct.

A peasant perspective to understand history



Every day more is discovered about the origins and history of agriculture, and thus the existing theories change constantly. Initially it was said that agriculture first emerged in the Middle East around 8,000 years ago and from there it spread around the world. Today, it is known that it emerged in at least 12 regions of the world independently and that the first steps towards agriculture may have occurred as far back as 20,000 years ago.

A general problem with research on this subject is that those who have dedicated themselves to studying the origins of agriculture are mainly men linked to institutions in Europe, the United States and a small number of other countries. Furthermore, studies have been and continue to be done with the almost total absence of people of peasant and indigenous origin, or anybody with any real, practical experience in peasant agriculture. For the same reason, much of what is presented today as hypothesis for possible historical processes does not seem to be consistent with what we know about peasant and indigenous agriculture, and especially the various forms of crop and seed care.

In this text we will try to look at history from a peasant perspective.

What is agriculture?

Today it tends to be taken for granted that it is the cultivation - sowing, caring for, harvesting - of domesticated plants and the raising of equally domesticated animals. But in its beginnings, agriculture consisted of the care and/or planting of wild plants and the partial confinement of tame but non-domesticated animals. To this day, agriculture includes non-domesticated plants and animals that are very important for general welfare, such as medicinal plants, wild vegetables, trees, wild animals, etc. Here we will use a broad definition of agriculture, to include any form of directed care and management of plants and animals by humans

Domestication and diversification in agriculture



From the processes of gathering and hunting prior to agriculture, to fully developed agriculture, human work and care brought about two transcendental changes: **what we now call “domestication”, and the processes of diversification.** Women played the central role in both.

What is the difference between a domesticated plant or animal and a wild one?

In general, a domesticated being is one that responds better to the needs and forms of work, processing or human consumption. In addition, a domesticated animal or plant is usually more dependent on human care than a wild one.

The first forms of agriculture consisted of the care and protection of wild plants that were of interest for food and, to a lesser degree, for the production of fiber (hemp, flax and cotton, and vines in general, among others) and wood (various trees, shrubs and bamboos). In these care and harvesting processes, the women discovered that the grains, tubers, rhizomes, cuttings, etc., are also seeds, and therefore planting was added to the list of ways to care for wild populations.

Later, selection became central to the domestication process. Women farmers in particular began to choose seeds, cuttings, roots, tubers, etc. from plants that for some reason seemed better to them. Among the characteristics that they sought and achieved were the largest size, the earliest production, the greatest vigor, the greatest production, the greatest ease of peeling and grinding, possibly the shortest cooking time, the elimination of bitter taste and toxic elements, resistance to drought, frost, excess water, pests and diseases, or whatever was necessary and was best adapted to each specific place. Although there is very little research on selection by taste, color, aroma, etc., if we look at what is still done in peasant agriculture, and the characteristics of many local varieties, there is no doubt that the selections made by women around the world took all of these factors into account.

The domestication processes were long, possibly more than two thousand years for most crops, during which there were constant processes of selection and improvement, many of which are still done today. Selection allowed the wonder of converting weak and small tassels into the richness of rice, wheat, sorghum or corn or transforming poisonous plants into staple foods, such as potatoes, cassava or yams.

But it was not a linear process, because selection also causes problems. Every time someone selects a characteristic (for example, for vigor), they can or must discard other desirable characteristics (for example, drought resistance). If bitterness is eliminated, plants can become more susceptible to pests, and so on. To resolve this, it became common practice to re-cross the selected plants with their wild relatives, to recover at least some of the desirable characteristics that may have been lost.



This practice was perfected and generalized to such an extent that crossing with wild plants became a common peasant practice that has been maintained to this day, as a way to maintain varieties that are simultaneously productive, resistant and vigorous, and even to continue domesticating varieties of certain crops. There are documented examples of crosses with wild relatives in all types of plants, even in plants that do not normally reproduce by seed, such as potatoes.

The Age-old Legacy of Peasant Knowledge

The strategy of selecting and at the same time crossing with wild plants was an efficient and sophisticated mechanism to improve and domesticate plants, which required a lot of observation and knowledge. However, most historians and modern geneticists see it as a permanent back and forth in the breeding

process. For this reason, many scientists say that domestication was done at random, without associated knowledge, and that view has been used to disqualify, minimize and disregard the work of domestication, conservation and improvement of crops and varieties done by farming communities around the world. This is the case despite the fact that the very concept of crossing crops with wild plants to produce less fragile varieties is now considered "state of the art" when used by geneticists.



The development of agriculture did not just mean the domestication of hundreds or thousands of species. It also meant the development of thousands of different varieties. The different colors of corn, rice, beans, lentils, sorghum, and so many others are a simple example of that diversity. Cabbages are just one species on their own, and selection among cabbages led to cauliflower, cabbage, brussels sprouts, broccoli and kale, which then in turn all

have their own varieties. There are varieties of wheat for winter and others for spring. Varieties of corn that mature in 90 days and others in 150 or 180. Rices that grow when flooded and others that need only the rain, with growth periods that can vary from 80 to 280 days, with different flavors and



aromas. There are potatoes that are round, elongated, smooth, wrinkled, yellow, red and purple. There are pumpkins of the most diverse forms; wheat for bread, wheat for making pasta. Corn and beans traveled from America to Africa, and African women developed authentically African varieties, completely different from the American ones. Wheat spread all over the world and in each continent there are different varieties with their particularities. In total, there are hundreds of thousands of varieties that have been created by the peasants of the world.

Science tells us that diversity has its origin in two fundamental processes: a) the emergence of spontaneous changes or mutations that were selected by the farmers and b) the fact that the crops were subjected to very different growing conditions. These different conditions favored different characteristics, and those are what “remained fixed” in the crops whilst each people or community selected the characteristics that interested them according to their own tastes and needs.

Collectivizing and sharing knowledge to ensure the world’s agrodiversity



Although the two above processes are indeed important sources of diversity, researchers have paid little or no attention to a third fundamental source of diversity created and expressed in hundreds or thousands of varieties within each crop: **the fact that the care, selection and improvement of seeds and crops has been done collectively, whilst appreciating diversity, and without imposing a single use, objective or concept of what is optimum.**



Many examples can be given. All crops have different forms of processing and uses. They can be consumed fresh, dry, raw, cooked, pickled etc. They can be put into stews or drinks, or used in rites, ceremonies and medicines. Therefore, each family and each community needed to conserve diverse varieties. No one ruled that one use was better or more important than another. Each village, each community and each family decided how to carry out the task of caring, selecting, improving, preserving. The fact that no single pattern or mold was imposed made it possible for diversity to flourish and be preserved. And this did not mean that they did not learn from each other or even that they did not copy from each other, but rather that each one, each family, each community was free to adopt

what their own experiences and needs called for. That is why we have different colors and different growth habits, different soil and water requirements, different flavors, aromas, cooking times, textures, tolerances to different forms of preservation, nutritional characteristics, medicinal attributes, etc. And throughout all this there is no doubt that women had and still have the central and fundamental role, because they have been responsible for taking care of the seeds and turning them into nutritious, attractive and tasty foods.

Along with this historically practiced tolerance and appreciation for diversity, the other pillar of diversity creation was the collective. As we have seen, when one person makes a selection it diminishes diversity because selection always means discarding something; no one can preserve everything on their own. But when everyone did the work of caring, improving and preserving as an inherent part of cultivating, what someone discarded, someone else preserved; what was unpleasant for someone, could be useful or tolerable for others, what someone did not see could be appreciated by the rest. A mutation didn't show in one field but it did appear and was preserved in another, what was discarded by one style of selection did not disappear when other styles were used. The result of this was that, although diversity was lost from what each individual family preserved,, what each group, community, people and group of peoples preserved not only maintained diversity but also increased it.

There is a second peasant and collective practice of utmost importance to maintain vigor, strength and diversity: **the sharing and exchange of seeds**. This allowed seeds to be dispersed over entire continents, so that when someone lost their seed they could recover it, or when a plant lost its vigor it could be given back its strength. This maintained varieties for generation after generation, even though modern geneticists say that varieties last only a few years. Sharing seeds has also meant being able to try out different varieties and adopt those that are considered of interest, or mix them with one's own to bring out new varieties.

It is a very long and diverse story, with a lot of experimentation and observation and an accumulation of invaluable knowledge. There are common paths and divergent paths, and different looks, judgments and tastes. Some techniques developed are unique, whereas others are practically universal, and all involve the participation of women and men, gender and sexual diversities, children, adults and the elderly. It has been based on centuries of appreciation and respect for curiosity, inventiveness, prudence and "madness", over a time where work was shared among millions of people year after year. A time where each people and each nation had its own way of doing things and so it was expected. All of this gave us the immense and invaluable wealth of agriculture.

In other words, the invention of agriculture was a long process because it required the collective construction of profound and sophisticated knowledge, and it involved millions of people worldwide. Once again, it was women who played a central role in this.

None of this would have been possible if someone had monopolized the seeds, or if the exchange of seeds had been restricted, despised, forbidden or criminalized, or if the people of the countryside had accepted that their knowledge was worthless. But that is exactly what the seed, chemical and agribusiness companies are looking for today, with the support of most governments. When we defend seeds as the peoples' heritage and strongly reject their privatization, we are defending diversity, the possibility of farming, of eating healthy and tasty food, of protecting ourselves against bad weather, of having good harvests, of living with dignity and of continuing to be in the countryside, taking care of the planet and feeding humanity.



Virtual *Shigra*

(additional tools)

Read:

[The Origins of Agriculture](#)

[A History of World Agriculture](#)

Watch:

[Seeds: Common Good or Corporate Property?](#)

Note: We would like to know your experience with these modules. Which other topics would you like to explore in more depth? When you use this material in your regional, local and organizational processes, please send your reactions and comments to lvcweb@viacampesina.org, they will be very useful.

La Via Campesina is an international movement that defends small-scale sustainable agriculture as a way to promote social justice and dignity. It brings together millions of peasants, small and medium-sized producers, landless peoples, rural youth and women, indigenous peoples, migrants and agricultural workers around the world. It strongly opposes agribusiness and multinationals that are destroying peoples and nature. LVC comprises 182 local and national organizations in 81 countries in Africa, Asia, Europe and the Americas.

For more information, visit www.viacampesina.org and suscribe to recieve newsletters and make donations.

International Operative Secretariat of La Via Campesina

Address:
104 Robespierre street, 93170 Bagnolet, France.

E-mail Address:
viacampesina@viacampesina.org

 facebook.com/ViaCampesinaOfficial
 [@via_campesina](https://twitter.com/via_campesina)
 [@la_via_campesina_official](https://www.instagram.com/la_via_campesina_official)