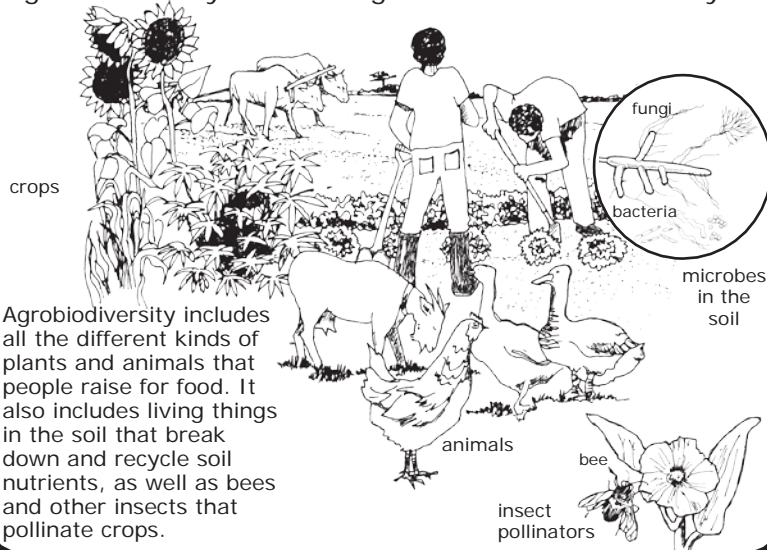


# AGROBIODIVERSITY Science Page

## WHAT IS AGROBIODIVERSITY?

Agrobiodiversity refers to agriculture and biodiversity.



Agrobiodiversity includes all the different kinds of plants and animals that people raise for food. It also includes living things in the soil that break down and recycle soil nutrients, as well as bees and other insects that pollinate crops.

## DID YOU KNOW?

In the Andes Mountains of South America, farmers grow over 3,000 different potato varieties!



## HOW PEOPLE CREATE AGROBIODIVERSITY

Over the past 10,000 years people have created countless varieties of crops and livestock breeds.

Each growing season, farmers saved seeds or took cuttings from the plants that grew well in local soils and weather conditions, or that were best able to resist diseases and insect pests. Over time, they developed varieties that produced food under varying environmental conditions. Farmers also alter soils and other parts of the landscape, and this in turn affects biodiversity.



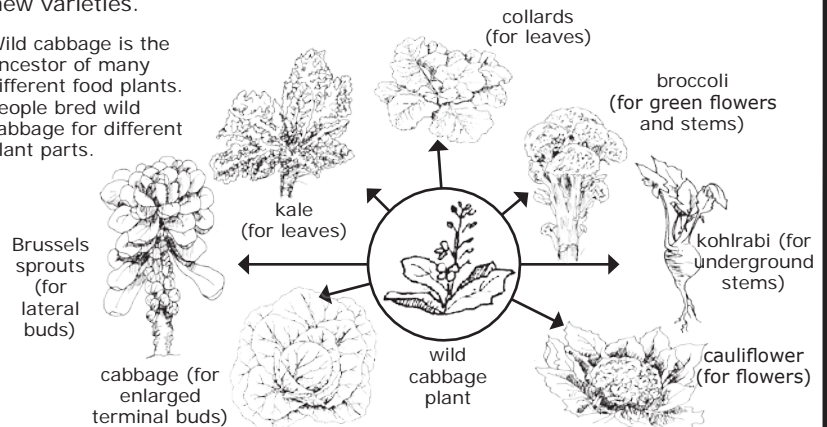
The knowledge traditional farmers have about crop varieties is astonishing. In India, women grow, harvest, and cook over 100 varieties of rice.

When people moved to different parts of the world, they took their seeds and farm animals with them. Farmers bred new varieties of crops and livestock that suited the new growing conditions.



As people select crop plants and livestock for different traits, they create new varieties.

Wild cabbage is the ancestor of many different food plants. People bred wild cabbage for different plant parts.



Genes, together with the environment, determine the traits of living things. Add human ingenuity and experimentation, and you get the diversity of vegetables, fruits, grains, and meats we eat today!



## PUZZLE

### Letter Tiles

Unscramble the tiles to reveal a message.



## TRY THIS

### Agrobiodiversity in Your Local Food Markets

#### What you need

- \* notebook
- \* pencil

#### What to do

1. Go to a local fruit and vegetable stand or farmers' market. Check out the variety of produce that is there. List all the fresh fruits and vegetables that you see. Also list the varieties of each fruit and vegetable that are available.
2. Talk to the produce manager or farmers. Find out where their fruits and vegetables come from. If you are not familiar with how they are used, find out this information, too. Take careful notes on what you learn.
3. Have a group discussion about the variety of produce that is available in your community in different food markets. Are there foods that are used by different ethnic groups? Did you find some foods that are not familiar to you? If so, how are they used?

#### Extension

Pick a fruit or vegetable that is new to you. Find someone to help you prepare a dish using that food. As a group, share in an agrobiodiversity feast!

Answer to puzzle: People help create agrobiodiversity.



## SPOTLIGHT ON RESEARCH

### Carlos Ochoa, Treasure Hunter

Near the Peruvian village of Chota, a band of thieves tried to kill Carlos Ochoa by rolling boulders down a mountainside. He escaped with his treasure by ducking under a rocky overhang. In Colombia, he managed to escape with another treasure down the side of a volcano just before it erupted. Carlos has devoted most of his life to exploring remote areas in pursuit of his treasure – ancient species of wild potatoes!

The potato species he has discovered contain a goldmine of valuable genes for traits such as resistance to pests and diseases. Plant breeders can cross the wild species with cultivated varieties to develop new and better potato varieties. Carlos has discovered more than a third of all the wild potato species in South America. One species, *Solanum chochoa*, is named after him – *chochoa* stands for C. Ochoa. It can grow in very hot climates, which is not true of the cultivated varieties that exist now. This wild species can be used to breed potato varieties for farmers in hot, tropical areas.

Many of the species that Ochoa discovered and saved for future scientific work are now believed to be extinct (meaning they no longer exist) in the wild. They have been buried in volcanic ash or scraped away by bulldozers. But thanks to Ochoa's tireless efforts over the last 40 years, his valuable treasure trove of wild potato species will be available to plant breeders for years to come.

Source: "Genetic Resource Conservation: Carlos Ochoa," cipotato.org. Centro Internacional de la Papa. 2002. <<http://www.cipotato.org/potato/conservation/ochoa.htm>>



## QUOTE

"I know of no pursuit in which more real and important services can be rendered to any country than by improving its agriculture, its breed of useful animals, and other branches of a husbandman's cares."

- George Washington