



CONNECTING **natural resources** AND **human activities**

Agricultural activities produce agricultural commodities. A **commodity** is a product that can be bought or sold. However, many of these commodities have to be processed in some way before they can be used.

Food processing is a method used to take raw materials and make them into a food product. For example, grains are processed into flour and made into many different foods, such as bread, cereals, crackers, and pasta. Milk is also processed into many different dairy products after it is pasteurized.

Dairy farming is called a **primary industry**, as it changes natural resources into an ingredient or material that is used to make other products. Dairy farming starts with natural resources because farmers need land, soil, water and sunlight to grow the food that cows need to produce milk.



Green Grass to Milk



Did you know that it cow eats 40 to 50 kg of food each day? How does this compare to the amount of cereal a person might eat in the morning?

When milk is transported to a dairy processing plant, it is made into many different products, like 1%, 2%, chocolate milk, yogurt, ice cream and butter. Dairy processing adds value to Canada's natural resources because farmers use these resources to raise cows and produce milk. Jobs are also created by the dairy industry. Farmers consult regularly with veterinarians and nutritionists, buy from feed suppliers and hire workers like equipment technicians and builders for their barns, or hands-on workers to help with daily activities on the farm. The transportation and processing of dairy products creates thousands of jobs for Canadians away from the farm, in addition to the jobs created at retail stores throughout the country.

The production of food products is an important part of Canada's secondary industries. A **secondary industry** uses materials or ingredients made by primary industries. Secondary industries change these materials or ingredients into products.

When milk is transported to processing plants, it is pasteurized. **Pasteurization** is the process of heating a food to a high temperature for a short amount of time, and then cooling it quickly. The heating process kills any harmful bacteria that could make people sick. Health Canada regulates and requires all milk sold in Canada to be pasteurized.

Milk is also **homogenized**, which means breaking up the fat into very small particles, so that the fat and milk can then be blended together in a smooth mixture.

Fluid milk is packaged in cartons, jugs or bottles. These containers are stamped with a "best before" date and sealed. They are then ready to ship to stores and restaurants.

In Alberta, milk comes in jugs, bottles or cartons. In eastern Canada, milk is also available in bags. People in Alberta seem to prefer to buy milk in jugs, bottles and cartons, so that is how dairies package it. In Alberta, all types of packaging used for milk can be recycled.



What comparisons could you make between the production of milk products to another agricultural product? Compare the use of natural resources and the types of human activities connected to this other product.



Water Use



Water is a natural resource. Agriculture makes up a small proportion of Canada's water use. Much of the water used by agricultural activities does not go back to its original source. Original sources of water can include lakes, rivers, streams and ponds.



Connections to Other Industries



Dairy farming is also connected to other primary industries and natural resources. Oil is a natural resource.

Many of the **expenses**, or costs, that dairy farmers have to pay when they are raising dairy cows are connected to the price of oil and gas. These expenses include:

- ◆ Transportation
- ◆ Fuel and oil to heat and cool buildings
- ◆ Electricity and power to use milking machines
- ◆ Fertilizer and herbicides
- ◆ Purchased feed