

## Geography and Climate for Agricultural Landscapes

**Plant-source Foods:** A typical American diet consists of a wide array of fruits, vegetables, grains, nuts, dairy, and meat products. Each food item was produced on a farm that could be located relatively nearby, or it could have been produced across the nation or even globe depending on where you live. Consider the following geographical factors that influence the production of plant-source foods:

**Climate** plays a large role in the production of plant-based foods. Every plant has its own climate requirement for productive growth. For example, citrus fruits such as oranges, grapefruit, lemons, and limes require a tropical or subtropical climate. In the United States citrus fruits are grown primarily in Florida and Southern California. Tropical fruits such as pineapple, mangos, passionfruit, and papaya can only be grown in Hawaii or countries outside of the United States. Other berries and fruits such as strawberries, raspberries, peaches, and melons can be grown in more **temperate** climates as long as the length of the **growing season** is sufficient for the plants to produce their fruit. Other crops prefer cooler climates such as wheat, potatoes, sugar beets, and many vegetables such as broccoli, onions, lettuce, carrots, and spinach.

**Soil** across the country has different properties that affect its ability to supply nutrients, hold water, and to ultimately support food production. Sandy soils under some conditions will not hold enough water. However, clay soils might hold too much water which could lead to plant loss. Soil fertility refers to the quality of a soil that allows it to provide adequate amounts of nutrients in the proper balance to support healthy plant growth. Fertile soil contains the correct balance of organic matter, lies with a specific pH range, cycles nutrients, and hosts a community of microorganisms.

**Water** is an essential resource for the growth of plants. Water requirements vary from crop to crop with some crops requiring a lot of water and others requiring relatively little water. For example, rice is a staple food crop that requires a lot of water. Rice fields can actually be submerged in water for part of the growth season. Geography impacts both water supply and the availability of fresh water.

**Open space** is another important factor to consider in evaluating a state's capability to produce their own food. In some areas, residential populations or businesses are too dense for a traditional farm which requires space for fields and plant growth. Even more important than simply open space is to consider if the space has **arable** land.


Can your fruit or vegetable be grown locally? If not, discover the limiting factor(s).

**Climate:**

**Soil:**

**Water:**

**Open Space:**



Place your  
*Where does it grow?*  
Card here.

**Animal Source Foods:** The livestock that produce our meat, eggs, and milk are slightly more adaptable to various climates and conditions, especially with the use of modern animal husbandry practices which provide temperature controlled buildings and shelters in unsuitable weather. However, consider the following geographical factors that influence the production of animal-source foods.

**Resource Availability.** Animals raised on farms for the production of meat, milk, and eggs require adequate feed and appropriate shelter for the climate and weather conditions. There is often a geographic correlation between the location of livestock farms and where their feed was produced. For example, pigs eat a mixture of corn and soybeans. Iowa produces more pork and corn than any other state. Among other factors, it is an economical choice to raise pigs close to where their feed is produced to eliminate shipping costs.

**Open space.** Livestock animals are raised in a variety of places. Beef cattle and sheep spend a large portion of their lives grazing on public or private rangelands. Many pigs and poultry animals are housed in climate-controlled indoor barns that may require relatively less space for animal housing, but also require locations that meet zoning requirements and provide for proper manure and environmental management.

**Access to markets and processing facilities.** While many livestock farms are located in remote or rural areas, they also need to have efficient access to processing and distribution facilities. For example, milk is a perishable food product. It is transported from the dairy farm to a processing plant where the milk is pasteurized and either bottled or processed into cheese, butter, or other dairy products. Close geographical proximity is helpful for cost efficiency as well as practicality.