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Healthy Earth, Healthy Food, Healthy People



How to produce food, healthy food?

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Where did your last meal come from?

- What did you eat for breakfast, lunch, dinner, and snacks in one day?
- Can you list the places of origin of each of these foods and beverages?
- How these various food are being produced?
- Do you know of any problems or issues regarding the type of agriculture that produced these foods?



How can agriculture affects?

- Human health?
- Environment?
- Rural communities?

What are natural resources used in agriculture?

- And are these used in a sustainable way?
- In all types of agriculture?



Types of agriculture

What do you think makes these two types of farms different?



What type of agriculture is producing your food?

- Traditional low-energy agriculture
- Industrial high-energy commercial agriculture
- Sustainable agriculture



Traditional (subsistence) agriculture



Traditional (subsistence) agriculture

- Labor intensive
- Poor reliance on pesticides and chemical fertilizers
- Close circuit within the farm
- Polyculture system



Industrial agriculture

- **Industrial Agriculture**



Industrial agriculture

- **Industrialized Agriculture** is the type of agriculture where large quantities of crops and livestock are produced through industrialized techniques for the purpose of sale
- The goal of industrialized agriculture is to increase **crop yield**, which is the amount of food that is produced for each unit of land.



Industrial agriculture

- Large and specialized equipments
- Large irrigation systems



Industrial agriculture

- Synthetic fertilizers and pesticides
- Monoculture system



Industrial agriculture

- **Very dependent on inputs:**
 - Synthetic pesticides
 - Synthetic fertilizers
 - Irrigation water
 - Specialized equipment
- **Rely on fossil fuel (a nonrenewable energy)**
- **It takes 10 calories of energy to produce 1 calorie of food**
- **Less and less people are working in agriculture**



Sustainable agriculture

- Sustainable agriculture is the production of food, using farming techniques that protect the environment, public health, human communities, and animal welfare.
- This form of agriculture enables us to produce healthful food without compromising future generations' ability to do the same.



Sustainable agriculture

- This type of agriculture tries to find a good balance between the need for food **production** and the **preservation** of the ecological system within the environment.



Sustainable agriculture goals

- Water conservation
- Reduce the use of pesticides and fertilizers
- Promoting biodiversity



- Maintain economic stability of farms
- Help farmers improve their techniques and quality of life



Sustainable farming strategies

- Growing plants that can create their own nutrients
- Rotating crops in fields
- Mixing crops
- Water management systems



Sustainable agriculture benefits

- **Human health benefits:**
 - Healthier food
- **Environmental benefits**
 - 30% less energy to produce food
 - Less pollution
 - Maintaining and improving soil quality
 - Increasing biodiversity
 - Saving on water



Agriculture practices

- Field/Soil preparation
- Planting
- Adding manures and fertilizers
- Irrigation
- Protection from weed and pests
- Harvesting
- Storage and marketing (postharvest)

