Agriculture & Aquaculture

Agriculture

- Farming land for the growth of crops and animals
- Controlled by people
- Inputs:
  - Space
  - Water (irrigation)
  - Fertilizer
  - Pesticides/herbicides/fungicides

Benefits

- Reliable/predictable food supply
- Use of machinery increases efficiency
- Permits diversification of work force

Drawbacks

- Rapid depletion of soil nutrients
- Increase in erosion
- Machinery burn fossil fuels
- Decrease in biodiversity
- Chemical inputs lose effectiveness over time

Sustainable Agriculture

- Focuses on the long-term usability of the land as well as meeting present needs
- Techniques include
  - Crop rotation—protects soil nutrients
  - Multi-crop fields—reduces pests/disease
  - Organic pest controls—minimizes chemicals
  - Avoid overgrazing—continuous grass and prevents erosion

Aquaculture

- Water-based farming of fish and other seafood
- Controlled by people
- Inputs:
  - Space/tanks/netting—can be in existent aquatic ecosystem or 100% manufactured
  - Food
  - Water (manufactured)

Benefits

- Prevents overfishing of natural populations
- Reliable food supply
- Reduced heavy metal contamination of fish
- Less labor intensive than fishing

Drawbacks

- Higher chance of disease among fish
- Very high level of organic wastes in water (i.e. phosphate and nitrate!)

Sustainable Aquaculture

- Focuses on the long-term usability of the water as well as meeting present needs
- Techniques
  - Concentrate/remove organic wastes for use as fertilizer
  - Tanks directly linked to plants (hydroponics)