

AIM: How has agriculture changed to feed a growing population?

1. Traditional Subsistence Agriculture

- grow what you need
- human and animal labor
- slash and burn & shifting cultivation esp. in tropical forest regions
- polyculture
- nomadic herding on marginal land
- intercropping/interplanting
- agroforestry

grow many types of crops

planting crops between trees

semi-arid land usually adjacent to forest, not totally suitable for farming

2. Traditional Intensive Agriculture

- grow to eat and sell for income
- increased human / animal labor to increase yields
- polyculture
- increased water use
- fertilizer use

3. Industrialized Agriculture (high input)

- monoculture
- uses large amounts of water, fertilizers, pesticides, fossil fuels
- chemical use, soil degradation, waste, pesticide resistance

grow one type of crop

43,560 sqft
a little smaller than a
football field
hectare = ~2.5 acres

4. Green Revolutions - HYVs - the production of more food per acre of cropland

First Green Revolution (1950-1970): Developed Countries

- selective breeding and hybridization monocultures
- genetically engineered high-yield key crops: wheat, rice, corn

High Yield Variety
drought / disease resistant
pesticide resistant
more / larger fruit or veggies
earlier maturation

Second Green Revolution (since 1967): Developing Countries

- fast-growing dwarf varieties of rice and wheat
- varieties of corn can be planted more densely

Pros and Cons:

- can protect biodiversity because less land is needed and virgin land is not encroached upon
- uses large amounts of water, fertilizers, pesticides, fossil fuels (machinery and pumping water)