SUBJECT:- ES –ALA

PRESENTATION ON

FOOD RESOURCES

INTRODUCTION OF FOOD RESOURCES &

SOURCES OF FOOD

➢INTRODUCTION

- Food is one of the basic requirements of human being it is the most important material that our body needs for its proper functioning and well being at all stages of our life human diet is not restricted to any special category of food.

- Man eats a variety of foods, of plant and animal origin, as no single food provides us with all the nutrients that we need.

SOURCES OF FOOD

- Although the earth has perhaps 30,000 plants species with parts that people can eat , only 15 plants and 8 animals species supply 90% of our food.

➢Our main food resource are

➢Wheat and rice as their staple food.

➢Domesticated animals (cattle , sheep , goat , etc.)
These animals are the source of milk and meat . these form the important component of the diet of the people all over the world.

Aquaculture (fish and sea food)

- It is the production of food from aquatic habitants - marine and fresh water . Fish and sea food contribute about 70 million metric tons of high quality proteins to the world's diet .

- Although aquaculture provides only small amount of the world's food at present, it is an important source of protein for many contrives , especially in Asia and Europe.

WORLD / GLOBAL FOOD PROBLEMS

DEFINITION :

- WORLD FOOD PROBLEMS Involve complex interactions among *Food production*, *Population growth*, *Poverty*, *Environmental effects*, *Economic* And *Political system.*

- *Chronic hunger* (undernourishment caused by not ingesting enough energy to lead a normal, active life) and *catastrophic famine* (scarcity of food) are due to lack of access to food but not a lack of food.

The global food crisis

"The world's 200 wealthiest people have as much money as about 40% of the global population, and yet 850 million people have to go to bed hungry every night."

- Global food production has increased substantially over past 2 decades.

- Producing food and other agricultural products by conventional means uses more soil , water , plant , animal and energy resources ; Causing more pollution and damage to environment.

- During last 50 years the world grain production has increased 3 times but due to increasing population growth rate in LESS DEVELOPED COUNTRIES (LDC) has outstripped food production.

FACTS :

- Every year 40 million people die due to undernourish-ment or malnutrition.

- People receiving less than 90% of the minimum dietary calories (2500 cal./day) are called undernourished and if less than 80% they are said undernourished.

- The lack of essential nutrients like proteins and minerals leads to malnutrition resulting in several diseases.

- Thus every year our food problems is killing as many people as were killed by the atomic bomb dropped on Hiroshima during world war 2.

IN INDIA:

- Despite impressive gains in total and per capita food production since 1970, roughly 40% suffer from malnutrition bcoz they are poor to buy or to grow enough food to meet their basic needs.

- Now its time to give more emphasis to increase food production , equal distribution of food and at the same time to control the population growth.

KINDS OF FOOD PROBLEMS ???

TWO KINDS OF FOOD PROBLEMS :

- MALNUTRITION
- UNDERNOURISHMENT

MALNUTRITION

- Derived from *malus* (bad) and *nutrire* (to nourish)
- Includes both
  - Under nutrition (deficiency of one or more essential nutrients)
  - Over nutrition (an excess of a nutrient or nutrients)

- Malnutrition arises due to lack of minimum amount of proteins , vitamins , lipids , carbohydrates and other essential nutrients required for proper health and growth.

- Malnutrition may occur in both rich and poor countries .

- RICH COUNTRIES : OVER NUTRITION

- POOR COUNTRIES : UNDER NUTRITION

PROBLEMS DUE TO MALNUTRITION :

1. ANEMIA : caused by inability to absorb iron
2. GOITER : caused by iodine deficiency leads to mental retardation and deaf mustism.
3. MARAMUS : lack of protein and calories.
4. KWASHIARKAR : lack of protein in diet leads to neutral development and learning disabilities.
5. PELLAGRA : deficiency of tryptophan and lysine vitamins.
6. CHRONIC HUNGER : occurs when people have just enough food to stay alive but not satisfactory lives.

2. UNDERNOURISHMENT :

- The problem of undernourishment occurs when the body is not been given enough food or enough calories as required to support its need.

- As a result , the body begins to breakdown its own stored proteins and fats which reduces mental and physical efficiency as well as affects adversely the body immune system.

STATS

(By – The Food and Agricultural Organization, United Nations)

- An average the minimum calorie intake on a global scale is ***2500 calories*** per day.
- People receiving less than:
  - 90% of these minimum dietary calories are called ***undernourished***.
  - 80% of these minimum dietary calories are called ***seriously undernourished***.
- Deficiency and lack of nutrition often leads to ***malnutrition*** resulting in several diseases.

FACTORS TO IMPROVE FOOD PRODUCTION

Factors to improve food productions are as follow:-

- Training farmers for new techniques of agriculture, cultivation, & crop rotation.
- Construction of water storage reservoirs.
- Improvement in the irrigation system & canal networking.
- Adopting water conservation & water harvesting techniques.
- Adopting soil reclamation processes.

Types of agricultural system for food production:-

- There are two major types of agricultural systems in world.
- (1) Traditional
- (2) Industrialized (Modern)

TRADITIONAL AGRICULTURE CONSISTS OF TWO MAIN TYPES :-

- (a) **Traditonal subsistence** : In which enough crops or live stocks are produced for a family's survival in good years and there may be surplus to sell or to put aside for hard times. Farmers use human labour and draft animals.
- (b) **Traditional intensive agriculture** : In which farmers increase their inputs of human and labours, fertilizer and water to get a higher yield per area of cultivated land to produce enough food to feed their families and to sell for income.

(2) INDUSTIRALIZED AGRICULTURE :

- The number of developed countries use large amounts of fossil fuel, energy, water, commerical fertilizers and pesticides to produce huge quantities of single crop or livestock animals for sale.

Enviromental impacts due to increased food production :

IMPACTS DUE TO INCREASED FOOD PRODUCTION :-

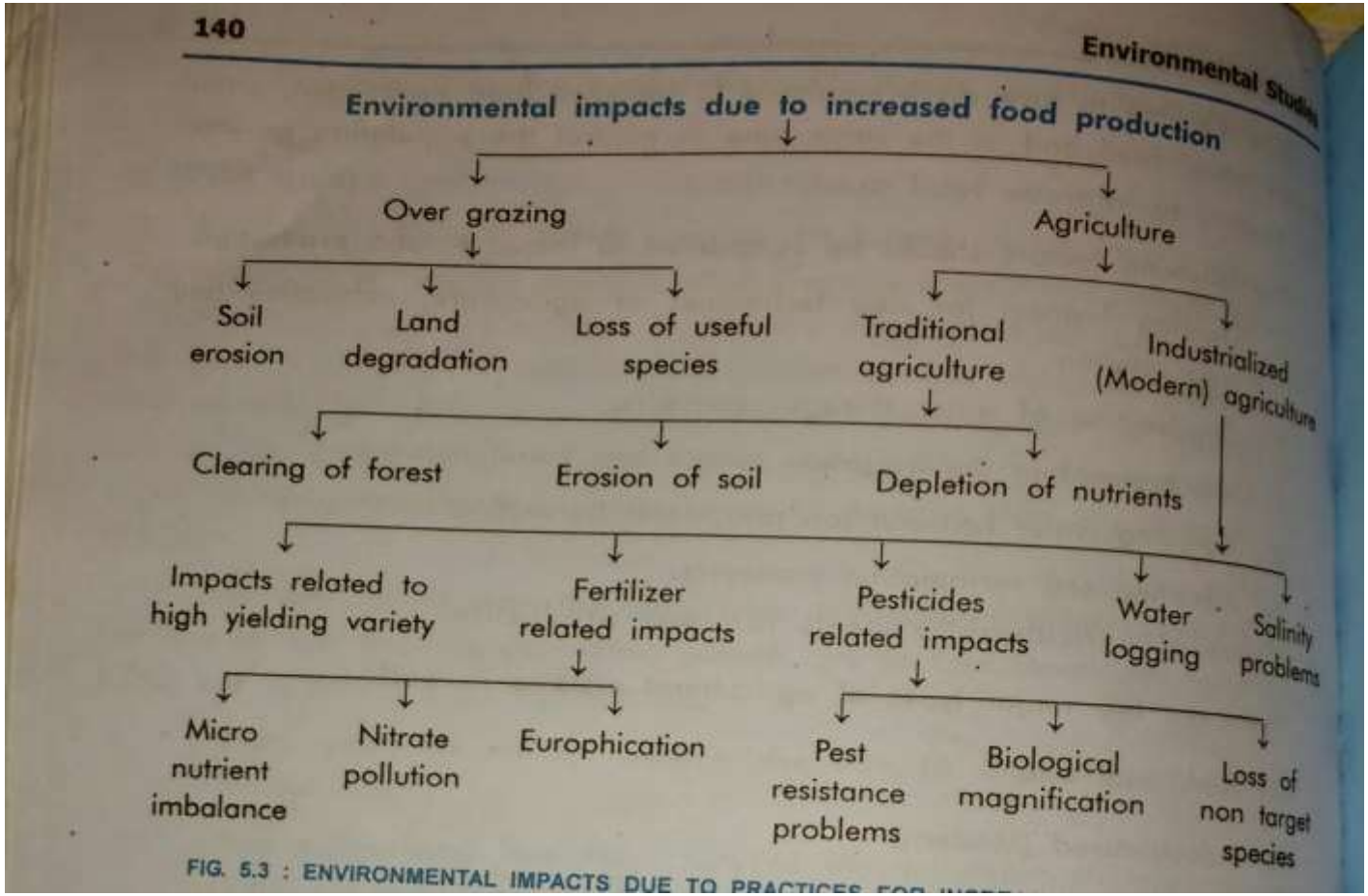


FIG. 5.3 : ENVIRONMENTAL IMPACTS DUE TO PRACTICES FOR

INDIAN FOOD SCENARIO :

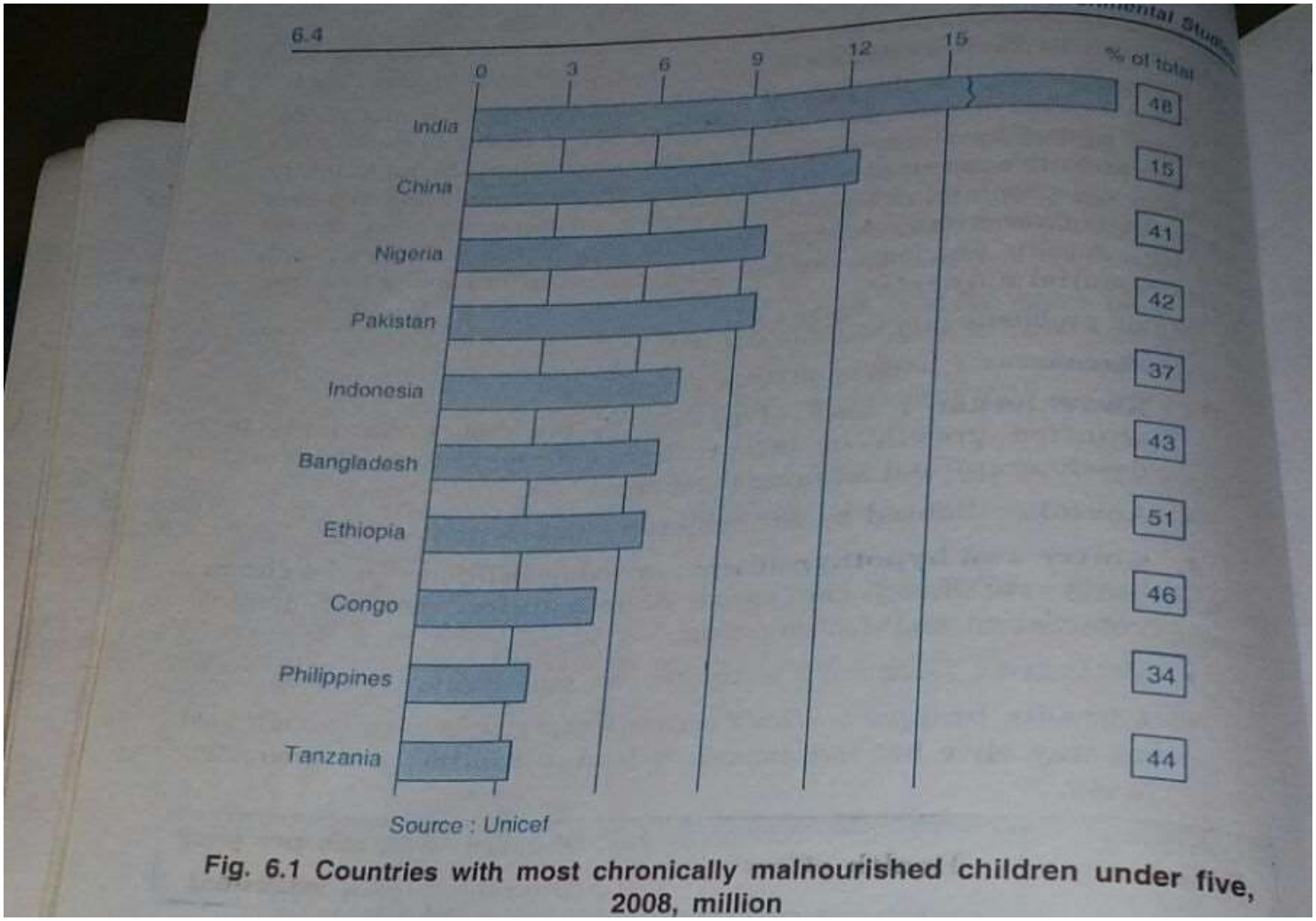
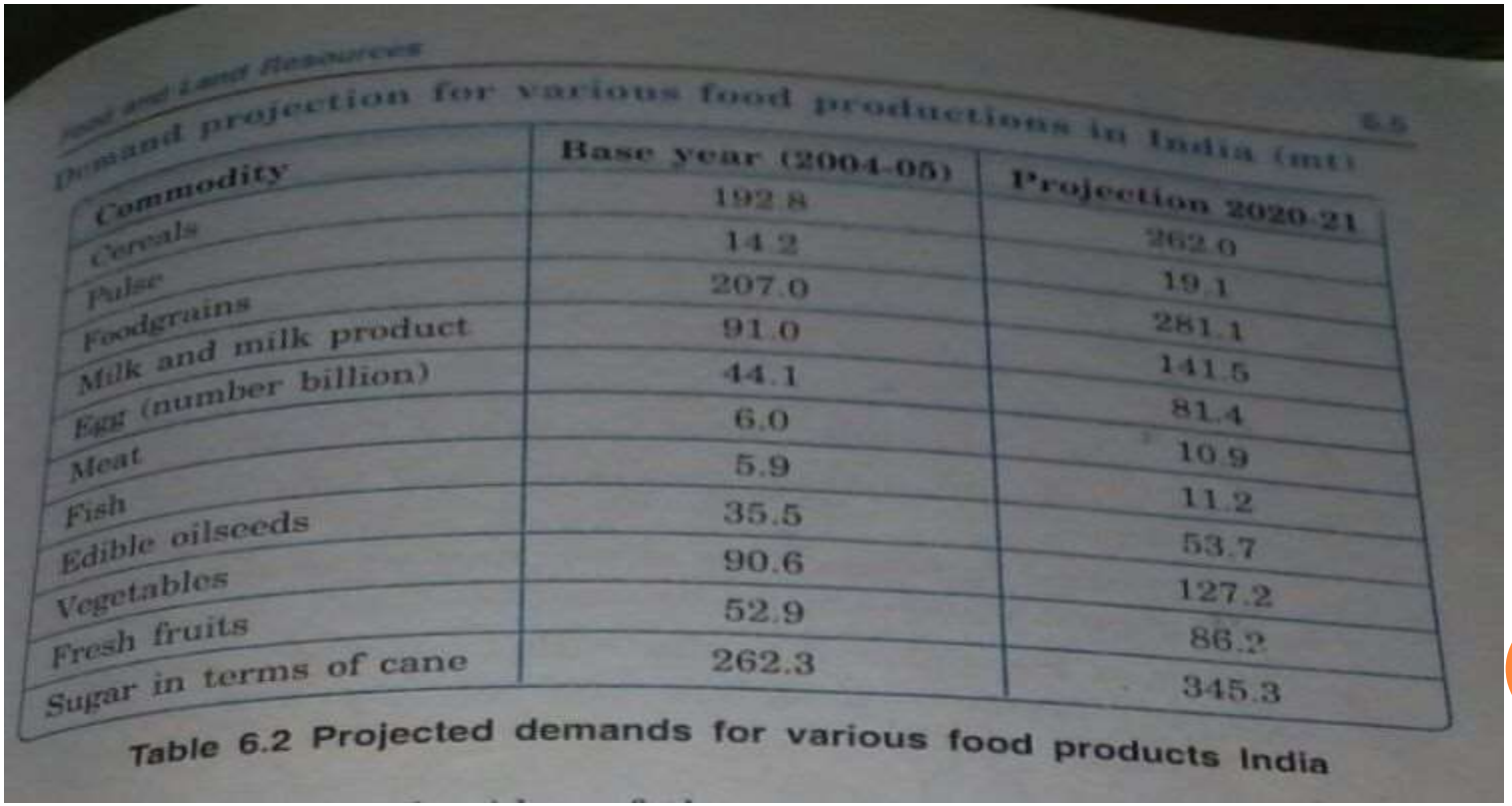


Fig. 6.1 Countries with most chronically malnourished children under five, 2008, million

Demand projection for various food production in India :

The following image shows demand in food production:



Demand projection for various food productions in India (mt)

Commodity	Base year (2004-05)	Projection 2020-21
Cereals	192.8	262.0
Pulse	14.2	19.1
Foodgrains	207.0	281.1
Milk and milk product	91.0	141.5
Egg (number billion)	44.1	81.4
Meat	6.0	10.9
Fish	5.9	11.2
Edible oilseeds	35.5	53.7
Vegetables	90.6	127.2
Fresh fruits	52.9	86.2
Sugar in terms of cane	262.3	345.3

Table 6.2 Projected demands for various food products India

Required growth to achieve domestic demand by 2020:

Required Growth to achieve domestic demand by 2020.

Commodity	Domestic production 2006-07 (mt)	Growth rate during 1998-99 to 2006-07(%)	Required growth rate over 2006-07 to meet the demand (%)
Cereal	201.9	0.62	1.9
Pulses	14.2	0.47	2.1
Foodgrain	216.1	0.61	1.9
Oilseeds	23.6	1.96	6.0
Vegetable	111.8	3.68	0.9
Fruit	57.7	3.06	2.9
Sugarcane	315.5	-0.60	0.6
Milk	111.9	3.65	2.4
Fish	6.9	2.89	3.5
Egg (billion)	50.7	6.60	3.4

Table 6.3 Growth rate needed to achieve the domestic demand by 2020

STEPS TO IMPROVE FOOD PRODUCTION &

LIMITS OF INCREASING FOOD PRODUCTION

STEPS TO IMPROVE FOOD PRODUCTION

- Available land acreage(વાવેતર વિસ્તાર) should be properly and judiciously utilized.
- Soil fertility should be increased through wise use of fertilizers(ખાતર) and organic manures.
- Mixed cropping should be practiced wherever possible.
- Soil erosion(ધોવાણ) and loss of nutrients should be prevented(અટકાવવા) by maintaining vegetation cover throughout the year.

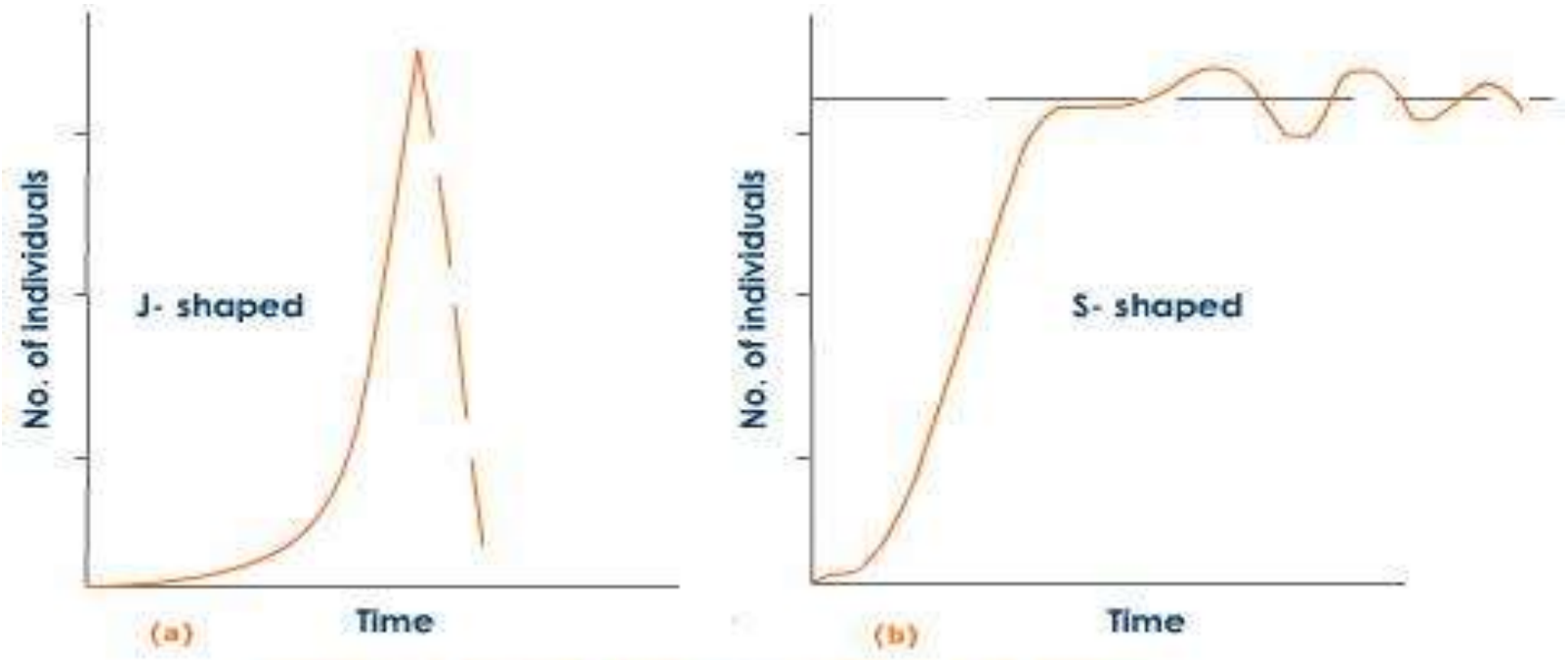
- High yield and disease resistant plant(ઊંચી ઉપજ અને રોગ પ્રતિરોધક પ્લાન્ટ) varieties should be introduce.
- Integrated and balance use of available water source (surface and ground water) should be made.
- Weeds and pest should be efficiently controlled , integrated pest control practices should be preferred over total reliance on chemical pesticides.
- Combining use of traditional methods/equipments with modern methods/equipments of agriculture.
- Crop rotation should be done.

LIMITS OF INCREASING FOOD PRODUCTION

- There are ecological limits to how much food can be produced , and there are growing signs that such limits have been or soon will be reached in some parts of the world.

- Even if agricultural technology and biotechnology enhance productivity , the environmental impacts associated with food production impose limits on the amount of food the earth can produce.

- Continuing to increase inputs of fertilizer , water and pesticides eventually produces no additional increase in the crop yields as the J-shaped curve of crop productivity slows down , reaches its limits , levels off and becomes as S-shaped curve.



Population Growth Forms: (a) J-shaped (b) S-shaped
K represents the carrying capacity

- Grain yields per hectare are still increasing in almost every country , but at a much slower rate.

- Worldwide , such yields dropped from an annual 2.3% increase between 1950 and 1984 to 1% annual increase between 1984 and 1993.

- Since 1985 yields for the major grains in the three countries with the highest yields per hectare – USA (corn) , Great Britain (wheat) , Japan (rice) , have leveled off.

- Future increases in food yields per hectare on existing cropland will result from improved strains of plants and from expansion of green revolution technology to new parts of the world.

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