

O'LEVEL

3

PAKISTAN STUDIES

GEOGRAPHY

2059/2

HEAD OF DEPARTMENT

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## Fishing Industry

Describe various types of fishing:

1) **Marine Fishing:** It is done from deep and can be divided into the following:

**Subsistence Fishing:** It is done for themselves. It is done on small scale with the help of traditional methods and equipments. Wooden boats and cheap nets are used in it, so the total catch is less. The range of these boats is 3-5 km from the coast.

a) **Commercial Fishing:** It is done for profit on a large scale; advanced methods and equipment are used, for example mechanized boats and special nets. The range of these boats is 50km from the coast. The total catch is much more. Karachi and Gwadar are the main centers of marine fishing.

**Examples:** Shark, Herring, Drum, Mackerel, Croaker, Sardine, Cat fish, Pomfret, Skate, Ray and Shrimps.

b) **Inland Fishing:** It is done from fresh water resources like rivers, ponds, canals, dams and barrages. The main centers of inland fishing are Kalri Lake, Haleji Lake, Manchar Lake, Dhabeji Lake, Kenjhar Lake and Hub Dam.

**Examples:** Palla (Sindh), Rahu, Thaila, Mahaseer and <sup>brook</sup> Traut (KPK).

Describe the factors, which account for the development of fishing centers along the Sindh coast. (OR Compare the Sindh Coast with Makran Coast)

1. From 30% area of Sindh coast, marine catch is 70% and from 70% area of Makran coast, marine catch is 30%.

### NATURAL:

2. Wider continental shelf than Makran coast which provides Planktons (Sea Plants & insects).
3. Indus delta is rich in sea food due to large number of Mangroves.
4. Naturally more species in Sindh Coast than makran Coast.

### HUMAN:

1. A large number of creeks, sheltered harbors.
2. Advanced facilities for processing, preserving and export.
3. Developed province with infra-structure facilities
4. Many fish markets in Sindh than Makran.
5. More commercial fishing in Sindh than Makran.
6. Fish catching zones are linked with markets by road in Sindh.

Describe an account for the main features including recent development along Sindh and Makran coast associated with the processing and marketing of marine fish.

1. Docking of sail boats, handling and preserving of marine catch at Makran coast
2. Nets of good quality are available cheaply in the market
3. Fishermen are given loans to buy bigger and better boats.
4. Fisheries Training Institute and Technical labs have been established in Karachi
5. Construction of Pasni Fish Harbor, Korangi Fish Harbor, and an expansion of existing fish harbor at Karachi.
6. Boats and trawlers with wireless receivers are given to fishermen - better telecommunication
7. Weather stations have been established at various locations.
8. In Makran coast infrastructure facilities are being provided.

In Inland areas of Pakistan, fish farming has expanded during recent years. Explain why this expansion has taken place.

1. Demand of people due to increase in population
2. Upgrading of economic condition of fishermen
3. Short term return of investment with high profit
4. Good domestic market for fish and other sea food

Where agriculture cannot be done;  
aquaculture can be

5. Provision for loan for aquaculture
6. Provision of better fishing equipment
7. Technical training centers for fishermen
8. Due to water logging and salinity, many people are coming towards inland fish farming.

**What harms the fishing industry in Pakistan? (Sustainable fishing)**

1. Water pollution by industrial waste
2. Reckless cutting and destruction of mangroves by men
3. Over fishing during breeding seasons.
4. Lack of handling and preserving facilities
5. Insufficient knowledge of fishermen due to widespread illiteracy
6. Inadequate size of equipments for entire fishing fleet.
7. Under exploited status of inland fisheries
8. Rough weather and sea storms due to fewer weather stations.
9. Lack of infrastructure and preserving facilities at Makran coast.
10. High prices of oil which is used in mechanized boats.

**Suggest measures to protect and develop the fishing industry in Pakistan.**

1. Establishment of training institutes for fishermen
2. Provision of infrastructure facilities especially in Makran coast.
3. Provision of loans to fishermen to buy bigger and better boats.
4. Finding more fish-markets in world
5. Minimizing the life risk for the marine fishermen by establishing weather stations.
6. Establishing more docks and harbors.
7. Eliminating industrial pollution
8. Putting a ban on fishing during breeding seasons
9. Creating awareness among the people about the importance of fish food.

**What are the uses of fish & also tell the main fish markets in the world for Pakistan's fish.**

It is a source of food, Provides employment to many people, Poultry feed is prepared, liver oil & source of foreign exchange earning in case of exports to JAPAN, Malaysia, Sri Lanka, USA, & UAE.

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**Describe the process of keeping fish on the fish farms.**

**Small Scale:** In small farms in villages shallow tanks are prepared in which the sides are prepared with baked bricks or cement while the bottom remains soft. After filling the water in the tanks fish fries are taken from hatchery, then feeding & breeding is done. When the fish reach to specific sizes they are sold locally.

**Large Scale:** In large-scale govt. farms there are cemented shallow tanks in which fish are kept. When the fish are ready for breeding their eggs are taken out & reacted with male sperms. They are kept in dark rooms in trays for a specific period, when the fries come out from the eggs they are kept into tanks. According to the sizes of the fish fries they are kept in different tanks. When they reach to specific sizes they are sold in the markets.

**(a) (i) Name two fishing ports on the coast of Balochistan.**

Jiwani, Gwadar, Pasni, Ormara, Sonmiani

[2]

**(ii) Name two types of marine fish caught by fishermen.**

Shark, Herring, Drum, Mackerel, Croaker, Sardine, Cat fish, Pomfret, Skate, Ray

[2]



**(iii) Describe subsistence fishing methods.**

Small/wooden boats  
Sailing/rowing boats  
Traditional/hand made nets  
Coastal only  
Lack of machines/simple engines

Rod and line method  
Fish kept in baskets of ice

[3]

**(iv) Explain how these methods can be improved to make fishing commercial.**

Engines  
Gill netters/nylon nets/stronger nets  
Can go further offshore  
Radios  
Chilled storage on boat

Trawlers  
Loans for ---  
Education/training for-----

[4]

**(b) (i) How can fish be stored and processed onshore?**

In ice/cold storage/refridgerated  
Gutted  
Canned  
Dried  
Frozen

Salted  
Fish-fingers/other product  
Fish oil

[3]

**(ii) Why is fish processing called 'value-added'?**

Can be sold for more money/more profit

[1]

**(iii) How does the poor infrastructure of Balochistan make development of the fishing industry difficult?**

Poor roads/no railway for transport  
Lack of electricity/power for processing  
Poor telecommunications to markets  
Lack of fresh/clean water for processing  
Illiteracy/lack of training/lack of education

[4]

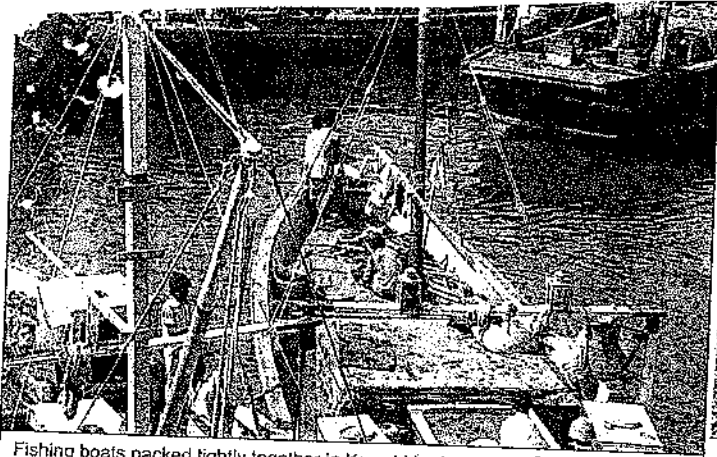
**(ii) Explain why more people are employed in inland fisheries than marine fishing.**

More people live near rivers, lakes etc.  
Maintenance of ponds  
Hatcheries  
Feeding  
Harvesting (catching)

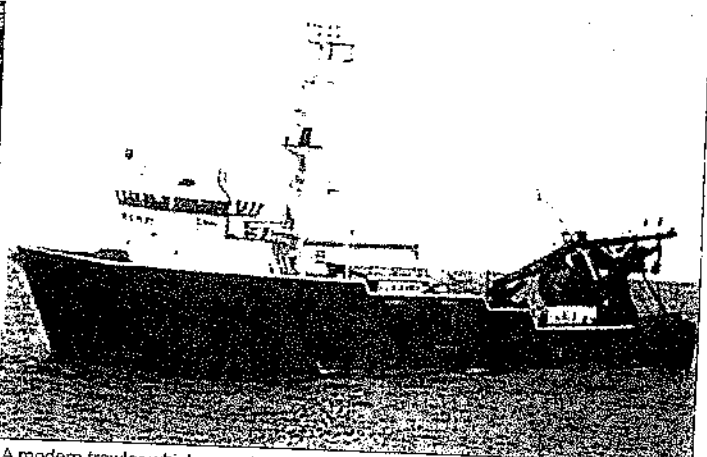
Transport  
Government encouragement/loans etc.

[3]

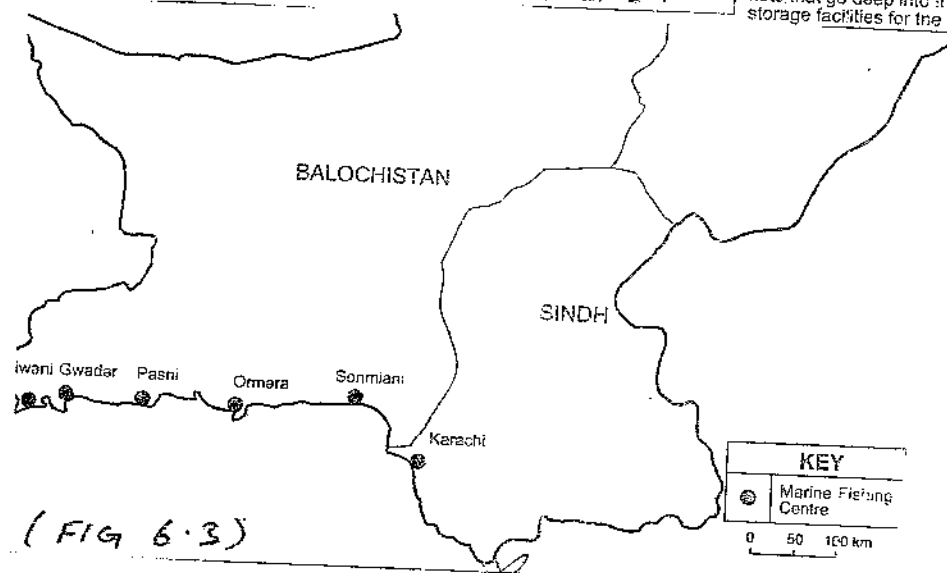
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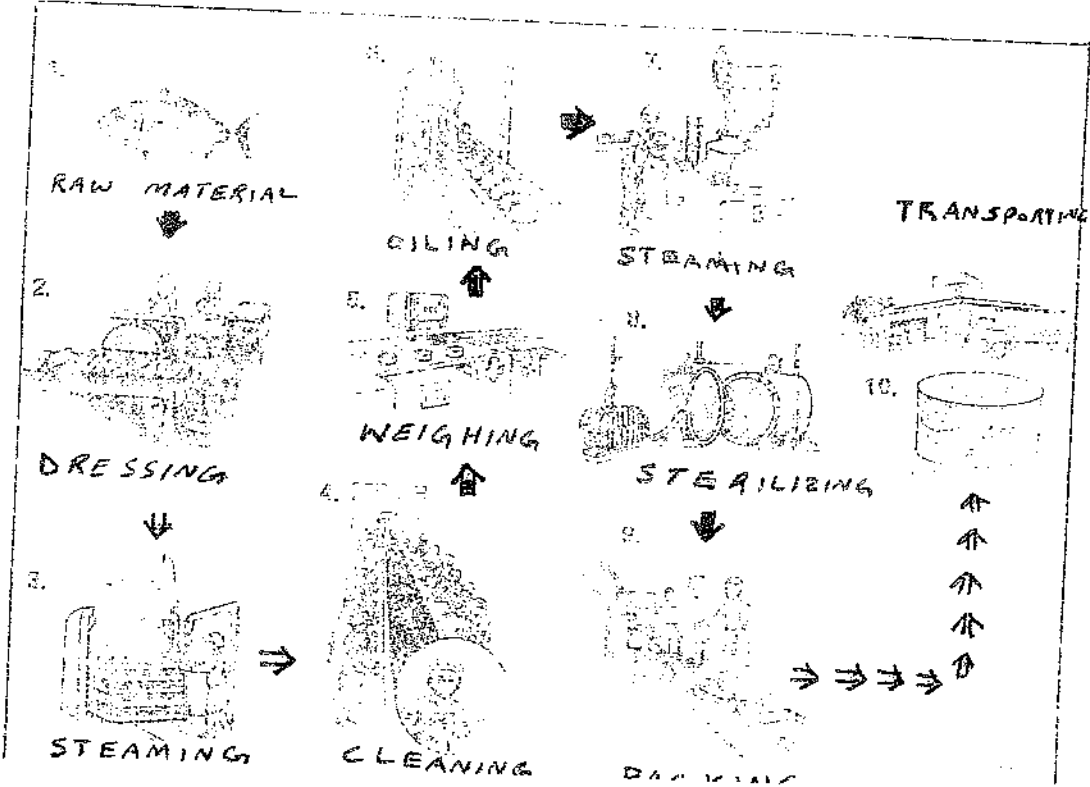
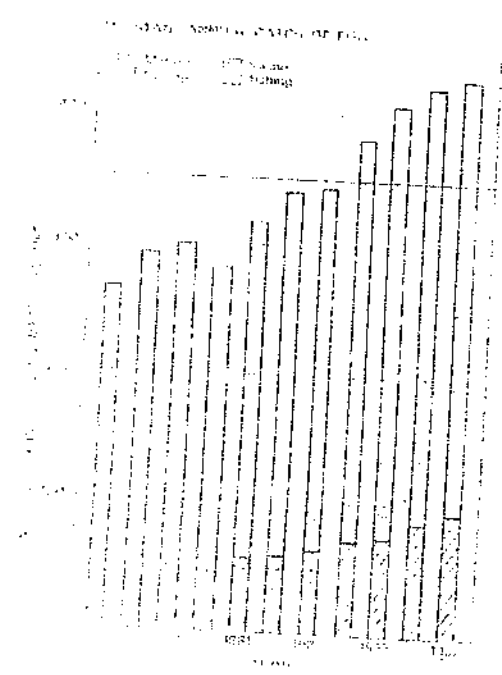
Fishing boats packed tightly together in Karachi harbour. **FIG 6.1**



A modern trawler which operates on power engines has gill-nets and trawls that go deep into the sea and catch a large amount of fish. It also contains storage facilities for the fish catch. **FIG 6.2**



(FIG 6.3)



5

# AGRICULTURE

## SYSTEM OF AGRICULTURE:

### NATURAL INPUTS:

**LAND:** (Flat area or uneven area/ Extensive),  
**CLIMATE:** (moderate or extreme),

**SOIL:** ( Alluvium or barren)  
**RAINFALL:** (Rain fed or Irrigated)

### HUMAN INPUTS

Machinery, High Yielding Varieties(HYV's), Chemical Fertilizers, Pesticides, Irrigation methods, Knowledge, Labour, Size of the Farm, Capital etc.

### PROCESSES:

Ploughing, Sowing, Irrigating, Fertilizing, Weeding, Pesticiding, Harvesting & Threshing.

OUTPUTS: Wheat, Rice, Cotton etc.

## BASIC DEFINITIONS:

**ARABLE FARMING:** Concerned with the production of crops.

**DAIRY FARMING:** Concerned with the rearing of the cattle for milk & other dairy products.

**LIVE STOCK OR (PASTORAL FARMING):** Concerned with the keeping of animals for various uses like milk, meat, skin & manure.

**MIXED FARMING:** A farm where both crops are grown & animals are kept.

**CO-OPERATIVE FARMING:** A system in which number of farmers co-operate in the purchase of seeds, fertilizers etc and later share the crop production.

**PERENNIAL CROPS:** A crop which can be grown throughout the year like sugar cane & tobacco.

**CROP ROTATION:** When on the same land different crops are grown but not the same crop again & again like after rice & sugar cane the next crop should be wheat & cotton.

**FOOD OR STAPLE CROP:** A crop which is the basic need of the people for food.

**GRAIN CROP:** Crops which contain grains like wheat, rice and millets.

**FODDER CROP:** A crop which is grown for the fodder of animals only.

**RATTOON CROP:** A crop which can be harvested more than one time from the same season like sugar cane & cotton.

**BARANI FARMING:** Farming based on rainfall.

**CONTROL PRICE:** The price at which the Govt. purchases the crop from the farmers to sale.

**SIZES OF FARMS:** Small (2-36 Hectare), Medium (12 hectare) & Large ( 120 Hectare)

Define the terms cash crop farming and subsistence farming.

**Subsistence Farming:** It is done on small scale with traditional methods and farmers grow the crops for their own family members.

**Cash Crop Farming:** It is done on large scale with modern methods and equipments and it is done only for profit.

Describe the cropping seasons with examples.

There are two cropping seasons; one is called "Rabi," which is sown before the beginning of winter (Oct. - Nov.) and harvested early summer (April - May).

**Examples:** wheat, barley, gram, oil seeds and pulses.

The other season is called "Kharif," which is sown in summer (April - May) and harvested in winter (Oct. - Nov.).

**Examples:** rice, sugar cane, millets, maize and cotton.

There are some crops, which are grown in summer and others in winter due to the requirements of those crops, because some crops need cool and some hot climate at the time of sowing and they are also harvested according to specific conditions. The crops which require more water mostly we grow in summer and those require less water we grow in winter. That is why we grow some crops as "Rabi" and some as

"Kharif."



Cash Crops		Subsistence Crops	
1	They are grown on large scale	1	They are grown on small scale
2	Modern methods and machinery are used	2	Traditional methods & equipments are used
3	Ploughing is done with tractors and sowing is done with machines	3	Ploughing and seeding are done manually
4	HYV'S (High Yielding Variety Seeds) are used which give more output	4	Ordinary or DESI seeds are used which give less output
5	Water is used from canals or tube wells	5	Water from wells is used
6	Chemical fertilizers are used to enrich the soil	6	Animal dung is used to enrich the soil
7	Harvesting and Threshing is done with machines	7	Harvesting and Threshing is done manually or with animal power
8	Pesticides are used and crop production is more	8	No pesticides are used and crop production is Less

**WHEAT:** It is an important grain crop, Rabi, & Staple food crop. The canal-irrigated areas of Punjab and Sindh meet most of the requirements of wheat.

**Cultivation of wheat:** After ploughing the fields in Oct. – Nov., seeds are sown. Wheat does not require a lot of water. The first irrigation is done after one month of sowing and the second is done one month before harvesting. It is harvested after **three months in plain areas and six months in valley floors**. After harvesting, threshing is done sometimes with "**Combine Harvesters**" in which grains are separated from Chaff. In case of subsistence farming it is done manually.

The production of wheat has increased much more due to the use of Fertilizers and HYV's (Maxi Pak, Shah Khan), but still we are not self-sufficient in its production due to ever increasing population and decrease in land area due to water-logging and salinity.

**Temperature:** 10-20°C (growing) and 25-30°C (harvesting)

**Rainfall:** Moderate rainfall. At the time of harvesting, light rain can increase the size of the grain due to swelling.

**Main Areas:** Nawabshah, Rahmyar Khan, Multan, Bhalwalphur, Bannu, Swat and Attock.

**Describe how natural inputs favor the cultivation of wheat in this region (Punjab).**

Due to presence of favorable climate, topography, doabs, bar uplands, five rivers, moderate rainfall and labor.

**How and why may the production of wheat in the Punjab sometimes be affected by natural hazards?**

Due to strong winds in May and June, windstorms in February and March, floods during Monsoon season and pests and diseases. (LOCUSTS)

**Describe some of the problems for Pakistan from having to import large quantities of wheat.**

1. Loss of foreign exchange
2. Burden on government
3. Loans to be taken
4. Inflation increases
5. Development projects to be stopped

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(b) (i) What is meant by a barani crop?

Grown without irrigation or Grown in rainy season

[1]

(ii) Name one area of Pakistan where most wheat is grown by the barani method.

[1]

Potwar Plateau, Northern Punjab, Piedmont plains

e.g. Sheikhpura, Sialkot, Gujrat, Jehlum, Rawalpindi, Attock and more



**(b) (i) Why is an increase in wheat production important?**

Increasing population

Alleviate starvation/lack of food

Decreasing imports/step towards self-sufficiency/no loss of foreign exchange

Increasing export (in good years)/increase foreign exchange

[3]

**(ii) State two natural inputs necessary for wheat production, and for each explain its importance.**

Cool/moderate temperatures 10 – 20 - for germination and good growth/sowing

Warmer; 25 – 30 for ripening

Dry period - for ripening/harvesting

Moderate rainfall/moist/wet weather - for germination/growing/swelling the grain

Alluvial/loam/clay soil/fertile – for good growth

Well drained soil – for root growth/aeration

Flat land – for machinery and/or irrigation

N.B. only credit 'for good growth' once [2 marks for each input, float of 1]

[5]

**(iii) Explain how human inputs have contributed to the increase in wheat production.**

Irrigation on Indus plains and semi-arid areas

Details of irrigation max 2

Fertiliser factories in (named town)

HYVs developed e.g. Maxi Pak, Shahkhan 95, Wadnak 95, Kohson 95

Plant protection programmes e.g. treated seeds, pesticide sprays, locust watch

Land reforms making larger fields/more economical units

Tractors and other modern machinery

Government loans

Support prices

Education/skills/colleges

Capital from investors/banks

Land reform

Named input + explanation required, max 2 each line for development

[6]

**(iii) Why is an increase in water demand expected for wheat?**

More wheat being grown/larger area cultivated/growing demand

More desert areas being reclaimed

More HYVs/Maxipak wheat needs more irrigation

Increased yield per hectare

More double cropping

More spraying and liquid fertiliser

More irrigation (in general)

[3]

**COTTON:** It is an important export orientated crop, Fibre crop & Kharif Crop, grown in various regions of Pakistan due to favorable climatic and soil conditions.

**Cultivation of Cotton:** Seeds (Nayab-78, Sarmast Qalander) are sown at a distance of 30-45 cm in April – May. One month later the first irrigation is done and second after two months. The plant reaches a height up to 135 – 150 cm. After picking the cotton balls are sent to mills where the first process of Ginning take place in which seeds are separated from lint. Then, the process of spinning



takes place in which cotton yarn is manufactured. Then **Weaving** of cloth is done. The seeds of cotton are used as animal feed and oil is also extracted from these seeds.

**Temperature:** 25-30°C for cultivation and harvesting with bright sunshine.

**Rainfall:** Ample rainfall preferred but rain at picking spoils the balls.

**What harms the cotton?**

Leaf Curl Virus and fruit shedding are the main problems. Due to the use of chemical fertilizers, pesticides and HYV's (Nayab 78, 149-F), the production of cotton has been improved much.

**Major Regions:**

Nawabshah, Sangarh, Rahimyar Khan, Multan and Bhawalpur

In Balouchistan, "Lasbela" has become a major region due to fine production of cotton. Quetta is market orientated because of the sale and purchase takes place in this area in spite of the fact that cotton is not grown in Quetta.

**(iv) Why is a much smaller increase in water demand expected for cotton?**

- Less land suitable for cotton/too wet in North
- Fertile soil needed – fertiliser expensive
- Fluctuating export demands due to competition
- Fluctuating prices
- Land changing to wheat cultivation
- Cotton not needed for food
- Cotton cultivation expanding more slowly than wheat/other crops

[3]

**RICE:** It is an important export orientated, Grain & Kharif crop the best quality of rice is grown in various regions of Pakistan due to favorable requirements of rice.

**Cultivation of Rice:** It is grown on a large scale in the Punjab and Sindh. Rice seeds (Basmati super, Irri 6, Irri-Pak & Rechna) are grown into beds or nurseries. When the plant is about 9-inches high, it is transplanted into prepared fields with a lot of water (Paddy field), which have been flooded to a depth of 30-37 cm. The rice fields are kept full of water until the rice is ripe. The water is then drained off before harvesting. Threshing of rice is either done with the help of animals or machines. After threshing, rice is sent to rice mills for polishing and packaging. Rice husk is used for making cardboard or covering of roofs.

**Temperature:** 20-30°C (growing) and a warm-dry temperature for harvesting.

**Rainfall:** Heavy rainfall (growing). Requires much water for 4-6 months growing period.

**Major Regions:** Larkana, Sialkot, Gujranwala and Sehkhupura.

**(b) (i) Explain why the cultivation of rice is labour intensive. Refer in your answer to the work done from planting the seeds to harvest.**

Each of these needs a phrase as below

- nursery for seeds
- repairing bunds for water
- prepare fields by ploughing/weeding
- flooding/irrigation
- transplanting seedlings
- fertiliser for nutrients/good growth
- pesticide to kill pests/for better growth
- drain water
- cutting/harvesting ripe crop

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[5]

(ii) Name a type of machine that can be used for rice cultivation instead of human labour.

tractor, harvester, mechanical irrigator (not thresher for cultivation)

[1]

(c) (i) State two climatic inputs for rice cultivation.

high rainfall/over 1500mms/ more than 1270 mms

temperature 20 – 30 C

warm, dry period for harvesting

[2]

(ii) How can the yield(production) per hectare of rice be increased?

Ideas such as

Irripak/HYV varieties/ genetic modification to increase output

Modern irrigation / perennial canals to give better water supply/at correct times

Modern fertilisers/pesticides to improve growth/prevent loss

Machines to make work faster

Education to make farmers aware of better methods

Reduction of waterlogging and salinity to increase cultivable area

(Max 2 per line for example or dev.)

[6]

**SUGARCANE:** It is an important crop from which sugar, brown sugar and Gur are made.

It's a perennial crop and weight wise the biggest crop of Pakistan.

**Cultivation of Sugar Cane:** Sugarcane stalks 30cm high are planted in April-May. A distance of 30 cm is kept between each stalk. The quality and height of the sugar cane depends on the frequency of irrigation and application of fertilizers, especially potash. If the land is well irrigated then the plants rise up to the height of 6-7.3 meters and the crop can be harvested 2-3 times a year.

**HYV's Thatta 10, JN 88-1**

**Temperature:** Requires temperatures of 25-35°C. Tolerant to frost for a short period

**Rainfall:** Requires plenty of rainfall, up to 1520 mm.

1. **Soil:**

2. Can be grown in a variety of soils. Loam and clayey soils with silt are most suitable as they retain water

3. Consumes a lot of nutrients from the soil.

4. Application of manure and fertilizers containing nitrogen, phosphorus and potash is needed every year.

**DESCRIBE WHY SUGARMILLS SHOULD BE NEAR THE SUGARCANE FIELDS**

Cutting the sugarcane requires manual labor. After cutting the crop it is immediately transported to the sugar mills located near the fields. If the transportation of the crop is slightly delayed, the sugar content is reduced and starts losing weight.

At the sugar mill the crop is scrubbed with chalk to remove the smell and dirt. After the extracting of juice by crushing the cane through heavy rollers, it is further processed to produce "white sugar." In villages "Gur" and "brown sugar" are also prepared from sugar juice.

(iii) Why is there such a large production of sugar-cane from a small area?

Large/tall plant

High yield per plant

[2]

(i) Name the areas of high sugar-cane production.

Peshawar district

NW of NWFP



Faisalabad district  
Central Punjab  
Nawabshah/Nausharo Feroz/Hyderabad/Badin district  
Central Sindh/near the river in Sindh

[3]

**(ii) Why are these areas suitable for the cultivation of sugar cane?**

Temperature 25-35°C  
Irrigation to make up for shortage of rainfall (1520mm)  
Loam/clay/silt/alluvial soil (not fertile only)  
Fertiliser factories  
Good road system

[4]

**(iii) What happens to sugar cane from the time it is fully grown to when sugar juice is extracted?**

cut by hand/manual labour  
transported by bullock cart/lorry/truck  
quickly transported  
scrubbed with chalk to remove dirt and smell  
crushed to remove juice in heavy rollers

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[4]

**(iv) Explain why bagasse is an important by-product of a sugar cane factory.**

Fuel  
Can be used to generate electricity  
Animal feed  
Made into chipboard/paper

[2]

**(ii) Explain how the growth of this crop can be improved by**

**A irrigation (max. 2)**

plants need water to photosynthesis/to be healthy/sugar needs a lot of water  
makes it grow faster/bigger/higher yield  
needed in dry periods/drought/make up deficiency in rainfall  
to remove salinity (in the soil)

**B fertilisers (max. 2)**

provide minerals for growth/reduces crop failure/nutrients  
makes up for deficiencies/Pakistan soil deficient in minerals  
minerals need replacing after cultivation  
examples of minerals e.g. nitrogen, potash (potassium), phosphate  
makes it grow faster/bigger/higher yield (but not twice)

[4]

**(b) Explain how this crop is processed.**

taken to factory/mill  
quickly/without delay  
washed/scrubbed  
crushed  
juice collected

refined  
crystallised  
whitened/made into white sugar  
molasses/brown sugar  
bagasse produced (a waste product)

[6]

**WHICH ARE THE TWO MAIN BI-PRODUCTS OF SUGARCANE**

Bagasse and Molasses are two major bi-products. **Bagasse** is used to make paper, chipboard, fuel & animal feed while **Molasses** are separated during the process of making white sugar which is used for the chemical industry & Rum.



**The period of employment for the people associated with Sugarcane is very short (160 Days). How can the problem of unemployment be solved?**

We know that there are two main by-products of sugarcane. They are Molasses, which can be used for the preparation of acids and Bagasse that can be used as a raw material for the chipboard industry. So, with the help of these two sectors, employment can be provided to the people associated with sugarcane.

**TOBACCO:**

Tobacco is mainly grown in the NWFP, which accounts for about 65% of the total production. **Mardan and Peshawar** are the main tobacco growing regions. The balance is cultivated between Sialkot, Gujranwala and Multan.

It can be grown in a variety of climatic conditions but its export varieties are grown on fertile soil with irrigation facilities.

**MAIZE:** It is a Kharif crop. It is a food grain as well as a raw material for edible oil production. It is used in the manufacture of corn flour, custard powder and other processed foods. It is also used as fodder for animals and birds.

**Temperature:** Requires high temperatures up to 35°C

**Major Regions:** Swat, Mardan, Swabi, Batgram and Bunair.

**PULSES:** Pulses are rich in proteins and they are popular in the local diet. Pulses fix nitrogen in the soil, thereby helping to fertilize the crop that follows. Generally pulses are considered low value crops so the farmer pays little attention to them other than scattering seeds on the land. When the crops are harvested very little care is taken because the cash returns are low and consequently inputs are minimal. Important pulses are: Mung, Mash, Grams & Masoor.

**MILLETS:** **Jawar and Bajra** are two types of millets produced. They are fodder for animals and birds and also used as a food crop. Millets are coarser cereals when ground into flour.

**Temperature:** 30-35°C

**Rainfall:** Does not require much rain, is drought resistant

**Area of Cultivation:** Tharparkar (Sindh), Kohat (NWFP), Attock, Rawalpindi, Jhelum, Sargodha, Dera Ghazi Khan, Bahawalpur, etc...

**OIL SEEDS:** Oil seeds like sunflower, Soya bean, are sown to extract edible oil. Some other varieties of oil seeds like **rapeseed, mustard, sarson, rai, sesame, linseed and castor seeds** are also cultivated. Linseed and Castor seeds have industrial uses.

However, the production of oil seeds is insufficient to cater for the needs of a growing population. The domestic requirement has almost doubled during the last 7-8 years with the high population growth. About 32% of the demand is met through local production with remaining imported from other countries like Malaysia.

**Major Regions:** Attock, Chakwal, Sialkot, Bahawalnagar, Bahawalpur, Rahimyar Khan, Jafferabad, Khairpur, Nawabshah and Sanghar.

**What Are the Factors Affecting Farming?**

There are two types of factors, human (economic) and natural (physical) as given below:

**Natural (Physical) Factors:**

1. **Relief:** Normally, the flatter the land, the larger and more efficient is the farm. The more valuable crops, like wheat, cotton, sugarcane, are successfully cultivated on flat lands.



Continuous large commercial farms are non-existent in the mountainous areas. Output tends to decline as the land gets steeper and higher

2. **Soils:** Rich soils produce high farming output. Alluvial and Loess (fine soil deposited by wind) are best suited for farming if water is available. River Indus and its tributaries spread alluvium on their banks making the soil rich and fertile. Soils that are rich in humus are also well suited for farming. Although Pakistan's soils lack organic matter, nitrogenous fertilizers can meet this deficiency. These are making soils suitable for cultivation of many crops.
3. **Rainfall:** The areas located to the north, including the Potwar plateau, receive adequate rainfall. For most of the year, this area tends to produce crops without irrigation and has good grazing for animals. The drier areas towards the south and east are more suited to arable farming with the help of irrigation.
4. **Temperature:** In the Northern areas, the length of the growing season is limited from April to September whereas, in the sunnier south, cereals and fruit can ripen throughout the year. If the climatic conditions will be extreme it would not help agriculture.
5. **Pests and Diseases:** Pests and diseases are likely to attack crops if preventative and curative measures are not taken. This problem is more common for small-scale subsistence farmers who cannot afford to by pesticides and insecticides. An attack reduces crop output as sometimes the whole crop may be destroyed.

### **Human (Economic) Factors:**

**Irrigation Facilities:** If rainfall is not sufficient or reliable, farming can still thrive with irrigation. Even in humid regions, irrigation is used to improve yields. With the extension of irrigation facilities, crops can be grown twice or thrice a year and the cultivable area increase. Irrigation can also cause problems such as water logging and salinity.

**Fertilizers:** The application of fertilizers (traditional manure or chemical fertilizers) has increased output. Nitrogenous fertilizers are used extensively. They are 75% of the total fertilizers used, as the soils are deficient in organic matters. Phosphate and potash constitute the remaining 26%.

**Mechanization:** The introduction of machines like tractors, tillers, combine harvesters, threshers, reapers and trans-planters for rice, has increased agricultural output but has led to a sharp decline in the agricultural work force.

**High Yielding Varieties of Seeds (HYV):** The use of HYV's also increases output by 10-20%, if fertilizers are applied and sufficient water. HYV's are used extensively on commercial farms.

**Marketing of Agricultural Products:** It is the business activity of directing agricultural products from the farms to the people who consume them. It includes the transportation, processing, storage, wholesaling and retailing. Agricultural marketing is disorganized with a lack of transportation facilities and large number of intermediaries, resulting in an increase in costs and reducing output.

**Size of Farm:** The size of a subsistence farm is small. Population pressures and laws of inheritance have led to the breakup of farms into small cultivation units. These small, fragmented farms are uneconomic. Their drawbacks are:

1. Machinery cannot be used
2. Small and fragmented holding are difficult to supervise
3. Loans cannot be obtained to develop the holdings.
4. Irrigation on small and discontinued farms is difficult
5. Experiments cannot be carried out for increasing production.
6. Output and profits are small. Solution lies in consolidation of holdings

**Plant Protection Programs:** Pests and insects inflict heavy losses on crops. Plant protection programs can be preventative and curative. Preventative measures include aerial and ground spraying with insecticides against pests and diseases. The program maintains vigilance surveys for

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control of locusts in the country, particularly in the desert areas. Public sector provides pest security advisory services and aerial spraying.

2 (a) MAIZE	PULSES	MILLET	OILSEEDS	TOBACCO	[2]
<b>(i) Name two crops on the list that are used mainly for animal feed.</b>					[1]
maize, millet, oil seeds					[1]
<b>(ii) Name one crop on the list that is not a food crop.</b>					[1]
Tobacco					[1]
<b>(iii) Name one crop that is rich in protein.</b>					[6]
Pulses					[6]
<b>(iv) Name one type of oil seed.</b>					[6]
Rape, mustard, groundnut, sesame, sunflower, safflower, soya bean					[6]
<b>(c) (i) Explain why crop yields may be low when subsistence farming methods are used.</b>					[6]
Uneducated / lack of knowledge of modern methods / use of traditional methods					[6]
Animals / draft power					[6]
Primitive irrigation system					[6]
No mechanisation / tractors					[6]
Family / unskilled labour					[6]
Poor seed / seeds from last harvest / no HYVs					[6]
No fertilisers / pesticides					[6]
Dung for manure					[6]
<b>(ii) To what extent can training and land reform be successful in increasing agricultural production?</b>					[6]
Training (res. 1)					[6]
Better management / efficiency					[6]
Better methods of cultivation,					[6]
Knowledge of disease					[6]
Better seeds / use of HYVs					[6]
Proper use of fertilisers and pesticides					[6]
Use of machinery / technology					[6]
Better money management / can get loans					[6]
<b>(d) How can education and training help a small-scale farmer to increase his output?</b>					[4]
Learn about modern methods e.g. seeds, machinery, pest control					[4]
Learn how to avoid crop failure					[4]
Improve literacy e.g. read about what other farmers are doing, where to sell to make					[4]
most profit					[4]
Take loans – must be related to education or literacy					[4]
<b>(ii) What are the advantages and disadvantages of using tractors instead of animals for work on a farm?</b>					[4]
<u>Advantages (res.2)</u>					[4]
Faster/quicker/suitable for larger fields					[4]
More efficient/modern/less hard work/do not tire					[4]
Needs fewer workers					[4]
Saves animal feed/land/cost of animals					[4]



**Disadvantages (res.2)**

Expensive to buy  
Cost of fuel } max. 2 costs  
Cost of repair/difficult to repair }  
Breakdowns  
Unemployment  
Needs skilled labour  
Compact the ground

No milk/meat/food etc.  
No dung for fertiliser  
Maintenance/repair facilities  
Cannot use in mountains/fragmented farms

(iv) Describe three other processes that may be carried out before the crop is harvested.

A short sentence about  
Sowing seeds  
Fertilising to provide extra nutrients  
Weeding to give plants space to grow  
Irrigation / watering to provide water  
Spraying pesticide to kill insects / virus / weeds etc.

[3]

(c) (i) Why does the output of a small-scale subsistence farm vary from year to year?

Variable rainfall / monsoon / water supply (flooding max. 1)  
Pests and diseases  
Uses own seed / not HYV's  
(any line can be developed to 2)

[4]

(ii) If a farmer has a good crop and can sell some in the market, how may he use the money (capital) he earns to improve his yield (production) for the next year?

Better seed – HYV, GM, disease/pest resistant  
Fertiliser – to provide nutrients  
Pesticides – to kill insects, viruses etc.  
New animals – younger, better breeding  
New tools/implements – better/faster work  
Repairs – to machinery, irrigation system, storage etc.  
Etc.  
(any line can be developed to 2)

[4]

(iii) Give two ways in which a small-scale subsistence farmer can supplement his income.

Carpenter  
Blacksmith  
Shoe-maker/cobbler  
Driver  
Etc.

[2]

**DESCRIBE THE MAIN AREAS OF FRUIT FARMING IN PAKISTAN.**

Dates are commonly grown in the areas of Baluchistan where Karez system is used like Turbat & Miri. In the areas of Sindh it is grown in Khairpur & Sukkur.

Banana is grown in some parts of Sindh like in Hyderabad & Badin.

In Sindh & Punjab there are many areas where mangoes are grown & they are famous in many parts of the world like Mirpur Khas, Sangarh & Hyderabad in Sidh while Multan & Bhawalpur. Citrus fruits like Oranges & Lemon are grown in central & eastern Punjab like Sargodha in Punjab. In the areas of low temperature in Baluchistan & NWFP almonds, apricot & apples are grown like in Quetta, Chaman (Baluchistan) & Swat, Deer & Waziristan (NWFP)

(a) (i) Name the two main fruit crops grown in area A.  
apples, apricots, almonds

[2]

(ii) Why are fruit crops grown in mountain valleys?  
warmth

shelter  
sunshine  
rain/less snow  
soil  
flat land

**(iii) Name one of the main fruit crops grown in area B.**

Bananas/mangoes/citrus fruit

**(iv) Why are fruit crops grown in this area?**

Monsoon/summer rainfall  
Mild winter temperatures/above 15 C  
Irrigation (from the River Indus)

**(v) Why are fruit crops grown mainly for local use?**

Perishable  
Heavy to transport  
Small amounts/not of export quality

**(ii) Explain how karez irrigation helps date palms to grow in the oases of area C.**

Provides water for growth (max 1)  
Underground canal/subterranean  
From mountains/foothills  
From aquifer/groundwater/soaks into ground  
More rain on mountains/higher slopes  
Reduces evaporation

**(iii) Name one other type of crop grown in oases.**

Vegetables- allow any name/tobacco  
Named cereals – millet (bajra), sorghum (jowar), barley/maize, pulses

**(iv) How is crop growth improved by the date palms nearby?**

Shade from/sun/extreme heat/reduce evapotranspiration  
Shelter from winds/windbreak

**Why were land reforms introduced in Pakistan?**

1. Breaking hold of large landlords
2. Equitable distribution of land
3. Protection of the rights of tenants
4. Consolidation of holdings

**(c) (i) What did the land reform laws aim to do?**

Redistribute land more equally/more fairly/ceiling on land holdings  
Take land away from large landowners/landlords and give it to the tenants/poor farmers/protect tenants from eviction

**(ii) What are the advantages of land consolidation?**

Economic units  
Use of machinery/modern methods  
Easier to supervise  
Better irrigation  
Better opportunity for investment/easier to get loans

Opportunities for research  
Bring more land into cultivation

[3]

[1]

[2]

[1]

[3]

[1]

[2]

[1]

[4]

**Explain why the use of machinery is limited on some farms in Pakistan. Describe the advantages and disadvantages for farmers and Pakistan of the use of machinery on farms.**

**Disadvantages**

1. Unemployment in agricultural sector
2. Loss of foreign exchange
3. Increase in oil consumption
4. Burden on economy
5. Loans to be taken

**Advantages**

1. More jobs in machine production
2. Machine industries increase
3. Better and more crops
4. Replacement of labor force
5. In case of export of crops and foreign exchange

**Describe methods, introduced by government to increase HYV's availability and to encourage farmers to use them**

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>* Research labs have been set up</li> <li>1. More shops have been set-up in villages</li> </ul> | <ul style="list-style-type: none"> <li>2. Advertisements through TV and radios</li> <li>3. Loans are being given to farmers.</li> </ul> |
|--|---|

**Describe problems, which have resulted from the use of HYV's & methods to overcome them.**

The soil loses its fertility and their solutions are:

1. Give rest to soil \* Stop use of HYV's \* Use of natural manure
2. Grow pulses, which fix the nitrogen from the air.

**Describe methods, which have been used to protect crops from pests**

1. Use of treated seeds \* Aerial and ground sprays
2. Subsidiary provisions \* Continuous vigilance of crops

**EFFECTS OF FERTILIZERS & PESTICIDES ON THE ENVIRONMENT:**

Crops use a lot of nutrients, pesticides & nitrates enter to the water bodies and make it non suitable for animals & humans. Aerial sprays also pollute the environment.

**(d) (i) What is alluvial soil?**

silt/loam/sediment  
deposited by rivers/from flooding  
when they flood  
contains nutrients/minerals

[2]

**(ii) Explain why alluvial soil is good for crop growth.**

Fertile/contains nutrients (e.g. nitrate/potash/phosphate)  
deep  
fine texture for drainage/not prone to waterlogging  
retains moisture/moisture retentive  
replaced each year

[3]

**(e) Explain why there is a shortage of water for irrigation in the Indus Plains.**

Canals blocked by silt/siltation  
Low/lack of rainfall/variable rainfall/tail end of monsoon or western depressions/  
Evaporation  
Wastage/leakage/seepage

Demand of domestic, farming, industry users (max 2)



Conflicting users/too many users

Water pollution

Siltation in reservoirs/lower capacity

Less in Sindh because too much used in Punjab

Examples of use to illustrate answer (e.g. water for washing cotton threads) (max 2) [6]

## **Live stock resources in Pakistan**

**Cattle (Bullock & Cow):** Cattle are the most common farm animals. They are assisted by camels and mules to plough, carry fodder and work from one place to another. They also supply milk and meat. Traditionally, cattle rearing are a matter of pride and prestige for farmers. They are an important part of farms and are well distributed in most areas. Only in few parts of Baluchistan and Thar there are few of them e.g. **Red Sindhi, Thari and Sibbi.**

**Buffaloes:** Buffaloes are the main source for milk and meat. They are not important as work animals. Some breeds of buffaloes are famous for their good supply of milk. Types of Buffaloes include **Nili Bar, Kundi & Ravi.** They produce 70% of the total milk supply. They also produce meat and are slaughtered when they stop producing mil or are old. They like to remain in water most of the time and the canal-irrigated areas are best suited for them.

**Sheep and Goats:** Sheep and Goats are kept primarily for their wool or meat. Mutton is preferred in urban areas and has great demand. They are sure-footed and can survive in a variety of environments and relief. They do not need large grazing fields and can nibble thin grass. Nomadic people of Baluchistan move them but the government discourages sheep and goats because they overgraze and cause soil erosion. **Stall fed goats should be kept to avoid overgrazing.**

**Poultry:** Poultry products include chicken and eggs. Demand for poultry production has greatly increased along with the population. People also prefer to eat white meat (chicken), as it is healthier. Recently many large farms have been built to satisfy growing demand.

In a poultry farm eggs are kept in the incubators when the chicks come out from the eggs their feeding is done. Vaccination is also done due to which the chickens become young within **6 weeks** then they are sold in the market. They are called **BRAILER** chickens which are used for meat while the Hens for eggs are different & they are called **LAYER.**

## **LIVE STOCK FARMING IN PAKISTAN:**

**Nomadic:** It is done in the areas of Baluchistan & the deserts of Sindh & Baluchistan. They have sheep, goats & camel and move from one place to another in search of food and water. They are concerned with subsistence live stock farming in which they cannot provide proper shelter to the animals, natural grazing grounds are used for fodder, water is used from ponds & lakes, their family members take care of the animals. **They do the natural breeding, manual milking, slaughtering & shearing so the overall output is cheap & low standard.**

Transhumance is also practiced in many areas of Pakistan in which the people keep the animals on pastures in the high mountainous areas they come down in winter to plain areas while go back in the summer. It is done in Northern Mountains & they also keep **Yak & Dzu** to get milk, meat & wool.

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**Settled people** of Punjab & Sindh also do the livestock farming like cows & hens. Their inputs are also manual & natural which give low quality animals. They also sell their products like milk, meat & wool in the markets.

**Commercial live stock farming** is also done in many areas of Pakistan. In those farms proper sheds, ponds & fodder rooms are present. **High quality processed fodder; clean water, specialized labour & Storage facilities are available.** The processes like feeding, breeding milking, shearing & preserving are done with the help of **machines.** The production from these farms is more & high quality.

**IMPORTANCE OF LIVE STOCK FARMING:** It is a source of milk, butter, ghee & eggs. It provides draft power in the farms, used for transportation, raw material for domestic industries like food processing & leather, employment to people. It is also a source of foreign exchange earning & contributes 10% of GDP.

**PROBLEMS OF LIVE STOCK FARMING:** Lack of grazing grounds, veterinary hospitals, hygienic conditions, high quality fodder, clean water and main markets. High prices of the fodder, gap between the farmer & the whole seller, insufficient & unhygienic breeding.

**STEPS TAKEN BY THE GOVT. TO SOLVE THE PROBLEMS OF LIVE STOCK FARMING:**

Establishment of grazing grounds especially in the Northern areas, provision of clean water for the animals & quality fodder, import of high quality animals for cross breeding, setting of live stock research farms, provision of training to the live stock farmers, programs to fatten the cows to get more milk, setting of veterinary hospitals & mobile teams.

(c) (i) Name two animals that are reared by nomads in area C.

goats  
sheep  
cattle  
camels

(ii) Explain the importance of their livestock to the nomads.

Food – milk, meat, butter etc.  
Clothing – wool, hides etc.  
Income/for selling/bartering – Young animals/named product  
Transport

[2]

Tents/shelter  
Wealth

[2]

(iii) Describe the nomadic method of farming.

Moving/settle for a few weeks  
In search of water  
In search of pasture/food  
Subsistence farming

(c) (i) What work is done on the farm by these animals, other than that shown on the photograph?

Hoeing – to remove weeds, thin seedlings  
Harvesting – cutting the crop  
Milling/grinding/threshing – to remove husks, for flour, by animal walking round  
Transport – of seeds, fertiliser, crop, to field, to market,  
Drawing water – from wells, by shaduf, charsa, by walking round  
Threshing – separating the husk from the seed

[3]

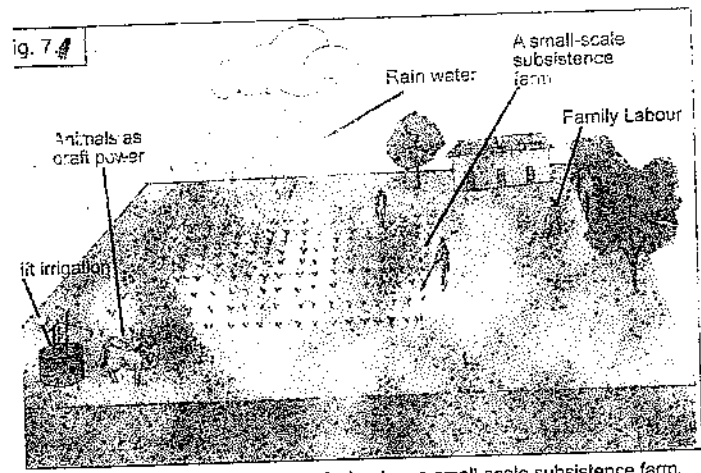
(ii) What do these animals and other livestock on the farm produce that the farmer can use or sell?

Dairy products/milk/butter/ghee etc.  
Meat  
Hides/skin  
Young stock  
Eggs  
Dung  
Hooves  
Horns  
Bones

[3]

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The illustration shows the cultivation of wheat on a small-scale subsistence farm.



The cotton plant. Cotton is Pakistan's leading export. FIG 7-3



praying of fruit trees is an important task carried out by the specialists

(FIG 7-7)

Food grains	Pulses	Oil-seeds	Cash crops
wheat	gram	mustard	cotton
rice	masoor	rape-seed	sugar cane
maize	mash	groundnut	tobacco
jowar			
bajra			

(FIG 7-7)

Fig. 7.8	Crops	Areas (000 hectares)	Production (000 Tonnes)
	Wheat	7,983	18,475
	Cotton	3,116	10,613
	Rice	2,114	3,382
	Sugar-cane	1,000	48,042

(Economic Survey of Pakistan 2000-2001).



CROP	HYVs
Wheat	Maxipak Shahkhan 95 Wadnak 95 Kohson 95 etc.
Rice	Basmati super Irri 6 Rechna Pajhal
Sugar-cane	JN - 88 - 1 to 3 Thatta - 10
Cotton	Nayyab 78 B - 557 149 - F Sarmast Qalandri CIM - 70

FIG 7-8

Crops		Percentage share by value
1)	Wheat	29.65
2)	Cotton	25.35
3)	Sugar-cane	17.64
4)	Rice	16.68
5)	Maize	4.02
6)	Oilseeds	1.27
7)	Tobacco	1.23
8)	Others	4.16
TOTAL		100.00

Percentage share of Major Agricultural Crops (1998 - 99)

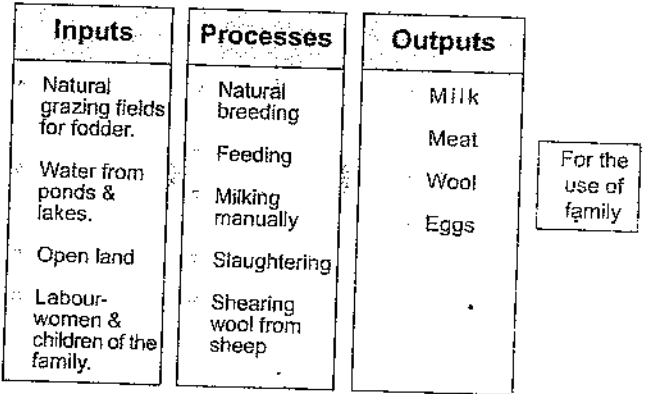
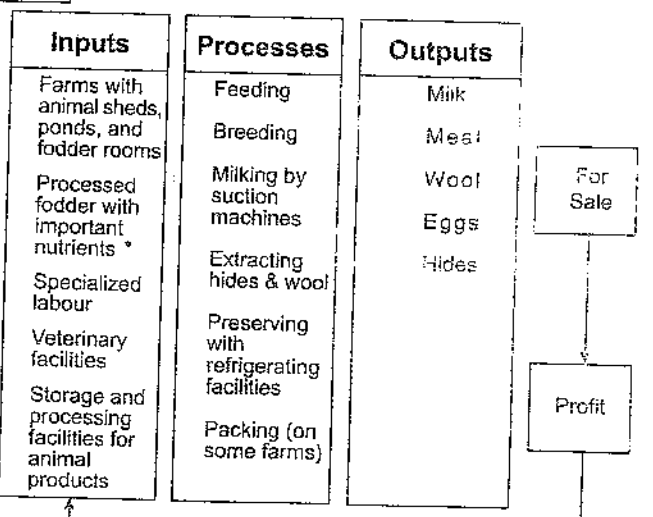


FIG 7-13

subsistence livestock farming as a system.

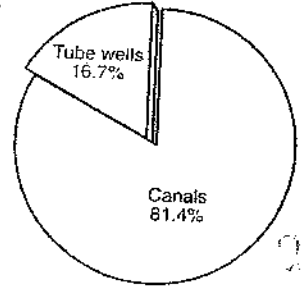


Government dairy farm in Quetta

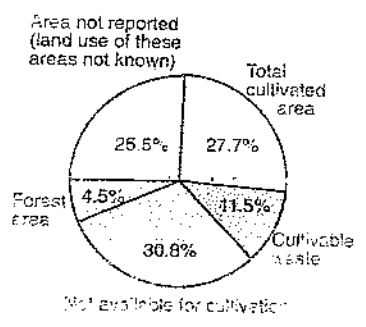
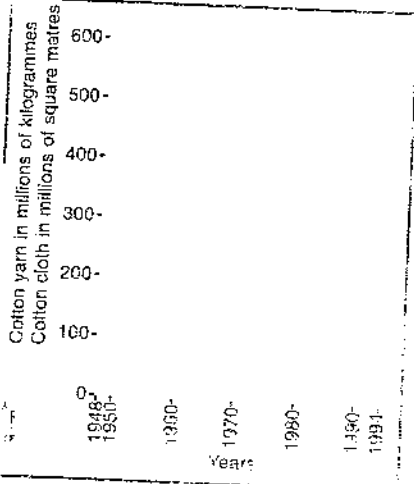
FIG 7-15

Commercial livestock farming as a system with improved inputs, processes and outputs.

FIG 7-14



Area irrigated by different methods



Land use - land use, 1998.

# INDUSTRIAL RESOURCES

## DESCRIBE VARIOUS INPUTS FOR AN INDUSTRY.

**Land:** It is the actual location of the factory and should be well drained, plain and well linked with other parts.

**Labour:** Manpower should be there, both skilled and unskilled people.

**Capital:** Finance should be there to establish an industry.

**Enterprise:** Management should be there to assign duties to labor of the industry.

**Raw material:** Basic commodity should be easily and cheaply available.

**Power:** Electricity or any other alternative of power should be there.

## Q. DESCRIBE VARIOUS PROCESSES IN DIFFERENT INDUSTRIES.

**Cotton Textile:** Spinning, weaving, dyeing, bleaching

**Iron and steel industry:** Smelting, moulding & welding.

**Leather industry:** Tanning

## Q. DESCRIBE VARIOUS OUTPUTS OF DIFFERENT INDUSTRIES.

**Consumer goods:** - The goods, which are ready to use e.g. food, stuff, drugs etc

**Semi manufactured goods:** - The goods, which have undergone some, processes but still not ready to use e.g. cotton etc.

**Manufactured goods:** - It contains both consumer and products goods e.g. cotton cloth.

**Capital Goods:** The goods which are used to produce other goods e.g. machinery.

## FACTORS INFLUENCING LOCATION OF AN INDUSTRY

### PHYSICAL / NATURAL

**Site requirements:** - The land for an industry should be plain, well drained and extendable.

**Natural routes:** - The land of any industry should have links with other areas e.g. road links.

### Human:

**Capital:** - Finance to establish an industry or loan from a bank should be there.

**Labor:** - Both skilled and unskilled labor should be easily available there.

**Power:** - Electricity should be easily available at cheap rates.

**Government policies:** - There are some areas where government provides subsidy, tax exemptions less import duty on machines which are more beneficial than other areas.

**Access to the market:** - Industry should be near the market for purchasing raw material and selling manufactured goods.

**Raw material:** - It should be easily and cheaply available for the specific industries.

### RAW MATERIAL

Raw material is the basic commodity. It may be natural or partly processed i.e. the product of another activity, which was to be further transformed into some further product before being used or sold.

## CLASSIFICATION OF INDUSTRIES:

**PRIMARY INDUSTRY:** it is concerned with the collecting or making available of material provided by nature e.g. agriculture, fishing, mining, quarrying.

**SECONDARY INDUSTRY:** it is concerned with transforming material provided by the primary industries into products more directly useful to people.



1. **Small scale/ Cottage or craft:** - the traditional or craft industry normally does not use modern technology and is often organized on a family basis e.g. handicrafts.
2. **Small & Medium Scale factory :** - it uses modern technology and is organized into firms or companies, which operate plants, factories or workshops, e.g. cotton textile.

**LARGE-SCALE MANUFACTURING:** -it converts raw materials into manufactured goods.e.g. Conversion of cotton into shirts. It ranges from small scale to large scale manufacturing e.g. TOYOTA.

**TERTIARY INDUSTRY/ Services Industry:** They provide services such as banking, insurance, transport and hotels.

### PRINCIPLE FACTORY INDUSTRIES OF PAKISTAN

#### DESCRIBE THE IMPORTANCE, PROBLEM AND MAJOR LOCATIONS OF COTTON TEXTILE INDUSTRY IN PAKISTAN.

Cotton textile industry is one of the most important industries in Pakistan because our 60% of export is based on cotton goods. It contributes to 7% of our G.D.P; it provides employment to a large number of people.

Pakistan's cotton is well known in the world but in the last few years we have strong competition with India, Far Eastern Countries and China. Leaf Curl virus and fruit shedding are two main diseases of cotton, which have reduced cotton production, recession and ban on Pakistan's cloth due to various reasons e.g. child labor also reduced the valuable foreign exchange of Pakistan.

For the establishment of cotton textile industry Karachi, Hyderabad, Quetta, Lasbela, Faisalabad, Multan and Lahore are the important region due to favorable location factors.

**(b) (i) Explain how climatic hazards may destroy or reduce the yield of cotton on farms.**

[4]

Cold temperatures/Frost + can kill plants  
 Rain + damages cotton boll before picking  
 Floods + can wash crops away/soil erosion  
 Thunderstorms/Cyclones + damages to crops/soil erosion  
 Drought + can reduce growth, kill young plants  
 (1 mark for named hazard + 1 for explanation)

**(ii) Explain two other factors that may reduce the production of cotton in Pakistan.**

[4]

Virus/Pests/disease + e.g. Leaf-curl virus or other named disease  
 Lack of irrigation water + reduces yield  
 'Waterlogging and salinity' or other soil damage + reduce yield  
 Economic/drop in demand/other crops make more money  
 Pollution + effect  
 Loss of fertility – not replenished by floods/depleted by crop  
 (1 mark for named factor + 1 for explanation)

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**(c) cloth raw cotton ready-made**

cotton yarn clothes

(i) List the following in order of production.

raw cotton cotton yarn cloth ready made clothes

[3]

(ii) From your answer to (c)(i) state one product of:

[2]

**A a processing industry**

Yarn/thread or cloth



**B a manufacturing industry.**

cloth or ready-made garment

(iii) Explain why Lahore is an important centre of the textile industry. You should use your answers to (c)(i) and (c)(ii) and your own knowledge. [7]

Cotton grown locally + ex

Water for washing

Machinery from HMC/Taxila

Labour supply – large skilled and unskilled population

Power – national electricity grid, gas pipelines, oil pipeline, power stations + ex

Transport – good roads, railways transport north, south and west + ex

Tele-communications, access to internet.

Education – skilled workforce, IT skills, foreign experts

Dry port – to promote exports

EPZ – to improve quality, better infrastructure

Industrial estates – for accommodation, infrastructure + ex

Market – large population + ex

Investors/entrepreneurs – for capital + ex

Factories for all stages of production

**WHY ARE SUGAR MILLS SUPPOSED TO BE NEAR THE SUGAR CANE FIELDS?**

Sugar cane is bulky so its transportation is difficult and expensive. One more reason is that as soon it is harvested it starts losing its weight so the sugar mills should be near the sugar cane fields.

**Q. WHAT ARE THE BY- PRODUCTS AND PRODUCTS OF SUGAR CANE?**

Sugar, Gur and brown sugar are the main products while “BEGASSEE” is a bi product which can be used as fuel, animal fodder and raw materials for chip board industry other bi product is “MOLASSES” which can be used for acid industry after fermentation.

**THE PERIOD OF EMPLOYMENT FOR THE PEOPLE IN SUGAR INDUSTRY IS VERY SHORT 160 DAYS. DESCRIBE THE PROBLEMS AND THEIR SOLUTIONS.**

The machines would be jam in sugar mill so crushing of any other thing could be done there. The people can be unemployed so a chipboard industry or an acid industry can be set up near by to use begassee and molasses

**FERTILIZER INDUSTRY**

Pakistan is an agricultural country and most of the areas are deficient in fertility of soil so we need to enrich the soil with the help of chemical fertilizers we use nitrogenous fertilizers for the deficiency of carbon. In almost every province we have fertilize industries.

In Multan Pak Arab fertilizer industry was established because it is surrounded with agricultures regions and it is centrally located and can fulfill the requirements of upper & lower areas of Pakistan. The main gas pipeline is passing through this area, which is the basic raw material of fertilizer industry. After the Green Revolution of Ayub Khan's govt. the requirement of chemical fertilizer has increased much and we established many fertilizer industries e.g. in Faisalabad, Daud Khel and Dharky.

(c) (i) Name two raw materials, apart from natural gas, which are used to make fertiliser.

Nitrogen

Ammonia

Sulphur

Fish/animal remains/bones

Gypsum

Potassium/Potash

Phosphate

[2]



**(ii) Explain why most fertiliser factories are in the Punjab and northern areas of Sindh.**

Main farming area }

Deep soil/fertile soil } max 2 for natural farming inputs

Good irrigation }

Less flooding now to replace nutrients

Large population to feed

Good roads for transport/low transport costs

Named raw material near, e.g. Rock salt and Gypsum at Khewra/Salt Range

Gas at Sui

Other minerals (see Atlas of Pakistan page 23)

[4]

**(iii) Why is it important that Pakistan manufactures its own fertilisers?**

Expensive (to buy)

Reduce imports/cannot afford to import fertilisers

Improves balance of payments/fertilisers burden the economy/greater crop production

improves the economy

Heavy to carry very far

Produce more food for large population reduces malnutrition

Produce more crops for export

Increases employment/reduces poverty

[3]

**(d) What environmental damage can occur when a new fertiliser factory is built in a rural area?**

Loss of farmland/land lost for factory and roads

Damage to roads

Water pollution/pollution of river/canal/irrigation water/water supply

Noise pollution

New quarries/pits

Dumping of waste (only credit if not given as a form of pollution)

Land clearance/loss of habitat/soil erosion

Traffic congestion

(example of damage linked to a location max. 1 )

[4]

## **CEMENT INDUSTRY**

The basic raw materials of cement are limestone and gypsum, which are easily and cheaply available in many areas of Pakistan and due to this reason many cement industries have been established in various areas e.g. In Karachi due to the Mangopir line store, in Hyderabad due to the Garju takar cuesta. There was a time when we used to export cement but now we are importing it due to increase in population, demand of construction companies despite of the fact we get machines and spare parts from Pakistan steel mill, power from various provinces, cheap labor and big market in various areas.

(a) (i) Name the two main raw materials quarried in Pakistan that are used to make cement.

[2]

Limestone and gypsum

(ii) Name three other inputs used by a cement factory.

[3]

Labour,

Land / area

Buildings

Machinery

Money / capital / investment

Power / electricity / gas / coal / oil

Water

Limestone } if not in (i)

Gypsum }

**JUNAID AKHTAR**

**(b) QUARRYING CRUSHING PACKING DRIVER SALESMAN OFFICE WORKER**

(i) From the list above, state one example of:

**A Primary employment**

Quarrying / crushing

**B Secondary employment**

Packing, crushing

**C Tertiary employment**

Driver, salesman, office worker

[3]

(ii) Explain why a salesman should have a good education.

Good communicator

Polite manners / etiquette

Knowledge of what he is selling

Knowledge of other cultures / can deal with foreign customers

Use of computers / modern technology

Can write letters etc. / read instructions

Speaking English / other languages

Use of figures / mathematics / calculations

Open to new ideas

[4]

(c) Study Photograph B (Insert), of Karachi.

(i) State three uses of concrete shown on the photograph.

Roads / pavement

Bridges

Multi-storey buildings

Housing / flats

Factories

Offices

Shops

Street furniture e.g. lamp or electricity poles, bollards

(ii) Using your answer to (c)(i), explain the importance of concrete to the development of Karachi.

Developing / increasing population, industrialisation, offices, housing, ports, roads, example of infrastructure etc. (allow any 2)

Better roads for transport

Better bridges for access

Stronger building materials

Long-lasting / more durable / less chance of damage

More modern appearance

Improving slums / squatters / Kacha Abadi

[3]

[4]

(iii) What are the advantages and disadvantages of building large industrial developments such as cement works, close to major cities?

Allow advantages and disadvantages to industries and / or city / citizens but do not double mark.

**Advantages (res. 2)**

To city and citizens

Cheaper transport costs to work

Readily available / quicker supply

Employment

To cement company

[6]



Supply of labour

Good infrastructure e.g. port, roads, electricity, water (up to 2)

Market / near demand

Cheaper delivery costs

**Disadvantages (res. 2)**

Air pollution / dust / smoke }

Noise }

Visual pollution / quarries } pollution (max 2)

Water pollution }

Dumping of waste }

Traffic congestion

Loss of farmland

Loss of other land uses e.g. housing, roads, industry (max. 1)

Population growth / rural-urban migration

Squatters / Kacha Abadi / slums

May be distance from raw materials

NB. Answers may refer to industrial estates (EPZ) or other industries.

**IRON AND STEEL INDUSTRY**

To fulfill the requirements in 1973 Pakistan steel mill was established by the financial assistance of USSR. It is located 40km east of Karachi at Gharo Creek Pipri near Port Qasim. Here spare parts; rolled billets, iron steels etc are prepared.

Later **HEAVY MECHANICAL COMPLEX(HMC) AT TXILA(1979)** with Chinese help. **Heavy Forge Factory (HFF)** is also important here where HEP equipments, oil, gas plants, boilers, crains and construction machinery is prepared.

**EXPLAIN WHY A STEEL PLANT IS AN EXAMPLE OF HEAVY INDUSTRY.**

It is concerned with metal work and has a large number of employees huge machines and much consumption of electricity that's why it's an example of heavy industry.

**NAME ANOTHER IRON & STEEL MILL LOCATED IN NORTHERN PAKISTAN.**

Ans) Heavy mechanical complex Taxila

**NAME THE PRODUCTS MANUFACTURED THERE.**

Ans.) Rail tracks, transformers, and weapons

**(b) Describe how two human inputs contribute to production at Pakistan Steel.**

Capital – for wages, new machines, transport etc.

Electricity / power- for faster work etc.

Labour- for work, trained for better work, details of jobs max 2

Transport – for inputs, outputs, from or too

government policies- tax concessions, training

new technology- for better productivity, communication etc.

(for each input res.1+1 for name, float of 4)

[6]

**(c) Why is over 50% of the output of Pakistan Steel sent north from Karachi to the Punjab?**

To Taxila

Heavy engineering

Machinery for industry and power generation/ construction / railways boilers etc.

Construction of buildings/ bridges / pylons

Etc.

[3]



**4 (a) Study Photographs C, D and E (Insert) showing the stockyard at Pakistan Steel Mills, Pipri.**

**(i) Name three raw materials used in the Pakistan Steel Mills.**

Any three of:

Iron ore, coal/coke/coking coal, limestone, manganese, chromite

[3]

**(ii) Why are most of the raw materials imported?**

Lack of development of resources/small output

Iron ore not mined in Pakistan

Coal poor quality

[2]

**(iii) Name the two outputs from the steel mills shown on Photographs D and E.**

Any two of:

sheets, plates, rolls, coils, slabs

[2]

**(b) (i) Name two human inputs to the steel mills.**

Any two of:

Labour, capital, machinery, skills, technology, transport, power, water, etc.

[2]

**(ii) Explain how human inputs such as those named in (b)(i) can improve production.**

Labour – work machines, carry materials, office work

Capital – wages, machines, technology, investment

Machinery – faster, better quality, new products

Skills – computers, office work, machines

Technology – quality, speed, modernisation

Transport – faster, larger supply, bigger markets

Power – efficiency, speed, quality

Water – for cleaning

(any line max 2)

[4]

**INDUSTRIAL ESTATES:**

Ans) Industrial estates are specific areas reserved for industries. The first industrial estate was established called Sindh Industrial & Trading Estate (S.I.T.E) in 1947. In various provinces we have many industrial states but maximum are located in Sindh due to groom the industrial development to provide facilities to investors and to create more job opportunities. Government also provides infrastructure facilities, tax holidays, subsidy, tax exemptions on imported machinery, cheap rates of electricity etc. The most Important factor is infrastructure facilities, which are considered, then it should be near thickly populated areas for example SITE in Karachi.

Special industrial zones are also setup due to importance of various areas but some times the facilities are to be arranged by the investors.

**WHY DOES THE GOVT. ESTABLISH INDUSTRIAL ESTATES?**

- ① To attract the local & foreign investors, increase GDP, provide jobs to the people, increase
- ② industrialization in the country, stop migration & improve the economy.

**SPECIAL INDUSTRIAL ZONES:**

It can be developed in those areas where infrastructure facilities are not available. The interested companies develop these facilities and provide utilities to zones and some assistance is also provided by the govt. Government also provides infrastructure facilities, tax holidays, subsidy, tax exemptions on imported machinery, cheap rates of electricity etc. e.g. gaddon-Amazai (KPK) for foam industry.

## EXPORT PROCESSING ZONES.

They are the zones established by the govt. in many areas of Pakistan for the productions of export oriented value added goods. Govt. provides many facilities to the investors e.g. Infrastructure facilities, tax exemptions, less import duty on machinery, security and subsidy. These zones are very important because they are a source of valuable foreign exchange and employment for many people in those industries e.g. Korangi Export Processing Zone.

(c) (i) What is an Export Processing Zone (EPZ)?

An industrial estate  
Producing products for export  
High quality/export quality goods/quality checked

[2]

(ii) Explain how the building of industrial estates could help to increase industrial production in Pakistan.

Increase quality of goods  
Reliable power/telecomm supply  
Water supply/sanitation/cleanliness  
Roads, railways to and from the estate/transport network  
Attractive to investors/government incentives  
Opportunities for more technology/modernisation/specialisation  
Development in rural areas  
Potential industrial linkages  
Example of an industrial estate (max 1)  
(any line max 2 for good development)

[5]

(d) Explain how government organisations help and promote the development of small-scale industries.

organisations e.g. PSIC (Pakistan Small Industry Corporation), PSIC (Punjab SIC), SMEDA (small and medium enterprise development agency) etc.  
marketing facilities/trade fairs/shops  
technical service centres/expert advice  
education and training  
cheap loans/loans on easy instalments  
tax breaks/cheaper raw materials  
small industrial estates  
dry ports/better road transport  
power supply/electrification/gas/water  
telecommunications  
more value – added goods  
aid mechanisation  
no reserves for help or promotion

[5]

## DESCRIBE VARIOUS INDUSTRIAL POLICIES AND THEIR EFFECTS.

Since independence govts. have introduced various industrial policies. In 1947 many people brought a large amount of money from India so Jinnah's Industrial Policy attracted them because they were keen to invest in the country. Pakistan Industrial Development Corporation (PIDC) was established for this purpose, which created investment opportunities in the country. PIDC provided many facilities to the investors such as loans, trainings bonus schemes, less taxes etc. during 1960's the industrial development was on its peak due to reform of Ayub Khan which brought a "Green Revolution" in the country and agro based industries flourished.



The environment for investment was favorable. In 1972 Bhutto introduced "Nationalization Policies" in which many major and minor industries were taken away by the govt which was a great set back for the industrial development and investment in the country. In 1977 Zia introduced "Denationalizing policy" and gave the industries back to their previous owners. The govt could not gain the confidence of the investors for a long time. The Privatization of state own enterprise (SOE) has been promoted since 1991. The policies of privatization and deregulation are followed over the world.

### OBJECTIVES OF PRIVATIZATION

1. To create better opportunities for private sector for expansion and modernization
2. To improve productivities and profitability.
3. To reduce burden on the govt. economic resources.
4. To facilitate economic activities for the private sector.
5. To achieve rapid industrialization.

#### FORMAL SECTOR

1. Employed by institution
2. Capital intensive with few workers; generally mechanized
3. Regular working hours and certain wages
4. Relatively guaranteed standard in quality of goods
5. Work is located in offices or factories
6. Legal and registered. With normally males (?)

#### INFORMAL SECTOR

1. Self employed
2. Labor intensive with use of very few tools
3. Irregular working hours and uncertain wages
4. Often low standard in quality of goods.
5. Work done at home or on the streets

### Describe the effects of industrialization on the marine life.

Polluted ground water seeps into Arabian Sea, Toxic industrial waste enter into the water & food chain, effects the growth of mangroves, reduction in the sea food, water vapours absorb the toxic gases causing acid rain.

### How does the industrial pollution affect the people?

Threat to marine life & Mangroves. Seaport pollution due to near by industries, noise pollution due to the turning of machines, dumping of industrial waste cause land pollution, industrial wastewater is harmful for the crops & irrigation, serious health hazards & chronic diseases.

### Solutions of the industrial pollution.

Efficient disposal mechanisms should be used to control the smoke & other toxic wastes. Facilities should be provided by the govt. to import such machinery, more trees to be grown in the country, industries should be set up in the areas away from residential areas, special laws to be implemented to check the pollution, people should be given awareness related to the environmental hazards.

### TOURISM:

The provision of accommodation & recreational activities to the people who are visiting various places for enjoyment. It is one of the most important tertiary industries of the world. There are two main kinds of tourism one is domestic in which the people within the country travel from one place to another for enjoyment and other is called international in which the people move towards the famous tourist attractions of the world.

## **FACTORS AFFECTING THE TOURIST INDUSTRY IN PAKISTAN:**

**Presence of tourist attractions:** There are many beautiful places located in Pakistan for tourism but they are far away & some of them do not have any access to reach there. Due to the inaccessibility there are many locations, which have not been explored yet.

**Security:** In many areas of Pakistan, which are important for this industry there is no proper arrangements of security. There was a time when about 4 Lac tourists used to visit various areas but during last few years the arrival of the foreigner tourists has declined sharply. After September 2001 incidence the govts of various countries have restricted their people to visit Pakistan.

**Finance for the development:** There are many tourist attractions, which need to be developed through proper funds, but the grants provided by the govt. are not enough to fulfill their requirements. There are many places in Swat but the tourists do not want to go there due to lack of roads & other facilities.

**Infrastructure facilities:** In many areas of Northern Pakistan there is a lack of infrastructure facilities like roads, electricity, food & sewage system. Due to lack of these facilities people avoid visiting those areas like in Gilgit & Chitral.

**Marketing:** Now every thing is dependant on marketing but unfortunately our tourist industry could not get benefit of this opportunity. In the recent years some tour operating companies in Pakistan are working in this sector. The role of PTDC (Pakistan Tourism Development Corporation) is remarkable they have given advertisements, published pamphlets & have their own web sites.

**Transport & communication:** In many tourist attractions of Pakistan there is a lack of metalled roads and the existing roads of these areas have not been maintained for a long time. In Swat the roads are miserable while the areas of Kaghan & Naran have the best system of roads due to the role of FWO. Transport facilities are also limited in those areas, which are also expensive, and not according to the standard level. People use their own transport or prefer to use the transport of PTDC. In many areas like Gilgit, Saidu Sharif & Skardu airports have been set up but have limited flights, which are expensive. Air transport should be encouraged for such areas including low fared helicopter service.

**Government Policies:** Pakistan is a developing country and can not spend on the development of a lot of tourist attractions but some areas can be selected to develop. Private sector can also be encouraged in various sectors of tourism. PTDC was established in 1970 & it has been playing a remarkable role in the development of tourism in Pakistan it has many motels, transport services & guiding facilities for the tourists who wish to visit historical places & other tourist attractions in Pakistan.

## **WHY DO THE FOREIGNERS VISIT PAKISTAN?**

Many people from Europe, USA & UK visit Pakistan because of various business meetings, many foreign educational institutes are working in Pakistan & they have their foreign staff, many international food chains, oil companies & banks are operating their business in Pakistan. There are many world organizations like UNO, are working on various projects so their higher officials visit Pakistan occasionally. Diplomatic delegates also come Pakistan to attend various meetings. Pakistan provides all sort of international facilities like five star hotels, transport, security & so on.

There are many Pakistani people who have shifted in the other countries of the world like UAE, UK, & USA. They come to see their relatives time to time they want to see the tourist attractions of Pakistan. After 1990's many people have shifted in these countries because of better future prospects.

The foreign tourist are very few now & the number of these tourists decreasing gradually due to various reasons like lack of infrastructure facilities, security reasons & communication problems. Mostly they stay in the motels of PTDC and like to visit the areas like Gilgit, Chitral, Swat, Kaghan, Naran, Taxila & Moen-jo-Daro.

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### ADVANTAGES OF TOURISM:

1. Source of income, which can be used to correct the balance of trade.
2. Local people get employment, which stops rural urban migration.
3. Tourists buy souvenirs, which give rise to local cottage & craft industries.
4. Due to arrival of many people the production of food increases.
5. Local projects can be developed with the help of profit earned.
6. People get cultural interaction with the people living in far away areas.
7. Tourism is a sustainable industry can be used for a long time.

### DISADVANTAGES OF TOURISM:

People living in other areas get the awareness about the local conditions, which might affect it. It is a source of seasonal employment due to which the people in Northern areas remain unemployed the rest of the period.

Money, which is used on the development of this industry, can be utilized in mineral exploration etc.

Most of the tourist attractions are rugged so they attract only young people causing fewer earnings.

The local people become dependant on the tourist coming from other parts of the country.

The construction of hotel destroys the natural scenic beauty.

During peak tourist season the prices become so high causing problems for the local people.

Tourists destroy the local culture & traditions.

Social problem like crimes, gambling, terrorism & drunkenness may emerge.

### WRITE THE NAMES OF VARIOUS TOURIST ATTRACTIONS IN PAKISTAN.

Kaghan Valley, Naran Valley, Swat Valley, Skardu, Hunza Valley, Chitral, (Northern Areas)

Historical attractions: Forts (Baltit), Khyber Pass, Mosque Mahabat Khan (Peshawar), Badshahi Mosque Lahore.

Archaeological sites like Moen-jo-Daro, Harrapa & Taxila.

Modern buildings like Faisal Mosque, Mausoleum of Quaid-I-Azam, Minar-e-Pakistan, Dams & Barrages. Salt mines at Khewra, Lakes like Kallar Kahar, Kalri, Haleji etc.

### WHAT IS THE DIFFERENCE BETWEEN COTTAGE OR CRAFT AND SMALL-SCALE INDUSTRY?

Small-scale industry is that which employs fewer than 10 people and its fixed assets do not exceed 10 million rupees. In cottage industries, manufacturing is wholly or partially carried on in the home of the worker with the help of family members and no hired labor is employed.

### Describe the advantages of establishing cottage and small-scale industries.

- |  |   |
|--|---|
| 1. Employment potential                  | 7. Reduces regional disparity                                 |
| 2. Meets the demands of the local market | 8. No burden on imports                                       |
| 3. Source of foreign exchange earnings   | 9. Less capital and less sophisticated technology is involved |
| 4. Gainful employment of women           | 10. Good use of the local raw material                        |
| 5. Reduces rural-urban migration         |   |
| 6. Makes use of industrial waste         |   |

### DESCRIBE VARIOUS TYPES OF COTTAGE AND SMALL SCALE INDUSTRIES OF PAKISTAN.

#### CARPETS

Carpets are by far the most important in economic terms and they make a significant contribution to export earnings. They are generally hand woven and hand knotted and made of wool, silk or a mixture of the two.



## TEXTILE

Textiles are found throughout the country with a variety of designs and techniques. The most famous among them are khaddar, susi, khes, chunri, and ajrak. The designs are variably brightly colored with a traditional emphasis on blues and reds.

## EMBROIDERY

Embroidery has developed to a fine art with distinctive regional designs and patterns.

## JEWELLERY

Gold and silver smiths are one of the largest communities of craftsmen. Much of the Jewellery made and sold in cities is intricately fashioned and very delicate.

## CERAMICS

Clay and terracotta pottery and utensils continue to be of great practical importance. Many of the designs of the urns, pitches, bowls and pots seems today are almost identical to those uncovered at archeological sites around the country. Distinctive glazed blues tiles are used to decorate many of the great mosques in Pakistan.

## WOODWORK

The swat valley is perhaps the most famous for its intricately carved architectural woodwork and furniture, although woodcarving is common throughout the mountainous north.

## METAL WORKS

Peshawar is famous for its hammered brass and copper metal work; with a range of items including plants, trays, boxes, and vessels.

Sialkot is famous for sports, goods Waziristan for cutlery, Gujranwala for electric and engineering items and Lahore is also famous for sports and engineering works.

However recently exports of the non-cotton products have faced increasing trade barriers as public opinion in industrialized countries has expressed growing concern about child labor environmental and health standards

## BRICK KILN INDUSTRY:

It is done in those areas where much agriculture is not practised. Its one of the most ancient industry in which manual work is done to prepare construction material. First mud is mixed with water then baking is done in Kiln(BHATTI) in this most of the child labour is used. It is a major source of air pollution because of smoke. It should be shifted to natural gas rather than using coal. new methods should be used to dry them. Clean coal technology should be used to avoid combustion of coal in the air.

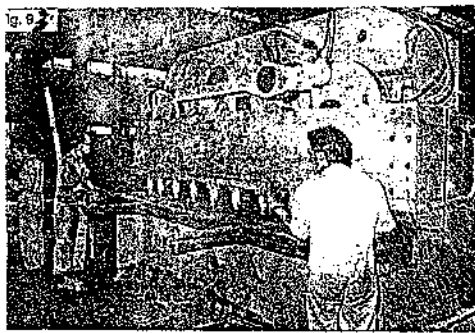
## DESCRIBE THE PROBLEMS OF COTTAGE AND SMALL-SCALE INDUSTRIES.

Like in various areas there is no electricity so it is difficult for them to establish such industries. Poor villagers of the problems of exploitation from of the whole sellers who purchase various goods from the villagers of cheap rates and sell it in the market very expensively. Most of the villagers follow the old methods and machines of their ancestors and they are unaware of new methods, which are why their products cannot meet the requirements of world standard. Profit margin for these craftsmen is very less that's why their standard of living is very low. Whatever they earn they spend it on themselves and their family members that's why they cannot develop their crafts and goods.

## STEPS TAKEN BY GOVT TO SOLVE THE PROBLEMS OF COTTAGE AND SMALL-SCALE INDUSTRIES.

The measures taken place are

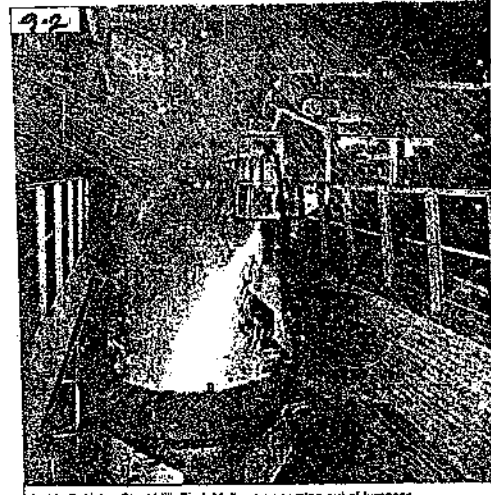
1. Establishment of industrial estates
2. Providing marketing facilities
3. Setting up of technical service centers
4. Establishing handicraft development centers and carpet centers
5. Providing reinvestment counseling and guidance to new comers
6. Providing local and foreign loans to small industry owners on easy installments.
7. Pakistan Small Scale Industries Cooperation(PSIC), Sindh Small Scale Industries Corporation(SSIC) etc.



An inside view of HMC Taxi.



Many of the local manufacturing firms in Karachi depend on the products of Pakistan Steel. This picture shows a workshop in a machinery factory in Karachi.



Inside Pakistan Steel Mill, Fig. 9.18, Molten iron coming out of furnaces.

FIG. 9.5

Factors considered for location of Pakistan Steel Mill at Pipri near Karachi.	Description
Physical	
A. Site	Flat, cheap, unused land was available next to Ghara Creek at Pipri.
B. Natural Routes	Port Qasim Fig 9.18 has a natural harbour that facilitates import and exports.
Human	
C. Capital	The former USSR provided economic assistance in the form of technology and capital.
D. Raw materials	Iron ore, manganese and most of the coking coal is imported through nearby Port Qasim. Limestone, needed as a flux, is brought by road from the Maki Hills near Thatta. Large quantities of water are required in the process of making steel, it is brought from Lake Havelji, 50 kms to the east (Salt water from the nearby creek is not suitable).
E. Energy	Port Qasim and Karachi have the highest electricity generating capacity in the country. Pipri thermal power station produces 21% and Korangi thermal power station produces 15% of the total thermal energy produced. In addition, Karachi has a Nuclear Power Station.
F. Labour	Skilled and unskilled labour is available locally from Karachi.
G. Markets	Many industries that use steel products are located in Karachi. It also supplies cold rolled sheets, galvanized sheets, pig iron and coiler to other parts of the country. Over half of the steel produced at Pipri is used in Punjab.
H. Transport	Pipri is connected to the main Karachi-Koti railway. Metalled roads also connect this area to the main road system (Fig 9.18).

Why Pakistan Steel Mill is located at Pipri near Karachi.

