

## 17. FISHING

1. a) i) P – Norway      Q- Japan  
ii) - The areas have cool waters which have abundant planktons-main food for fish  
- The areas have shallow continental shelves which allow light to penetrate for planktons to grow  
- Convergence of warm and cool current results in upwelling of ocean waters bringing mineral for fish and plankton from sea bed to the surface  
- Cool waters encourages thriving of numerous fish species  
- Most of the coasts are indented providing secure bedding grounds for fish  
- The sheltered bays provide suitable sites for building fishing ports  
- The large population in these areas provides ready market  
- The rugged landscape limits agriculture thus people turn to alternative economic activity  
- Cool climate provides natural preservation for fish
2. a) i) R – Trawling  
    S –Basket fishing  
(b) (i) Basket fishing  
    - The basket channel shaped to allow easy entry for fish  
    - At the mouth, there is a non-return valve which restricts the outward. The basket is held in the position with ropes/stones/ sticks downstream  
    - The basket is left in that attracted position for sometime then removed for landing of fish  
(ii) Trawling  
    - A bag – shaped net is attached to the ship trawler  
    - The nets mouth is kept open by other boards  
    - The upper part is kept a float by corks floats  
    - Weights are used to keep the lower parts of the net at the sea bed  
    - The trawler drags along the net  
    - After sufficient fish is caught the net is hauled to the trawler  
c) - Fishing is restricted to specific reasons to allow for breeding and maturing of fish  
    - Standardizing size of nets to ensure fingerlings are not caught  
    - Licenses are issued to prospective fishermen to control their number and to ensure there is no over-fishing  
    - Fish farming is being encouraged to ensure sufficient supply of fish.  
    - There is restriction of the disposal of untreated waste into the sea  
    - Artificial fertilization is carried out in special hatcheries to sustain the supply of fish/restocking of over fished waters
3. a) i) It is the rearing of fish in ponds  
ii) - The government through the fisheries department has set up fish ponds and hatcheries as demonstration farms  
    - Establishment of research institutions to investigate aspects of fish farming(breeding) diseases  
    - Expansion of markets through intensified campaigns aimed at encouraging more people to eat fish  
    - Extension officers have been sent to the field to advise on fish farming techniques  
    - The government has encouraged the establishment of co-operatives which give credit facilities to fish farmers  
    - Establishment of national food policy which encourages diversification of food aid as source of protein leading to setting up of fish farms  
b) - Inadequate storage and preservation facilities which cause heavy losses on the landed catch/leading to low catch  
    - Occurrence of strong sea waves causing accidental drowning/destruction of fish vessels  
    - Poor fishing equipment which confine the fishermen to a few metres of continental shelf leading to low catch

- Sparse population in the north coast and alternative economic activities in the south coast that lead to small market for fish
- High prices of fish which discourage many people from eating it regularly
- Local fishermen face stiff competition from foreign fishermen mainly from Korea and Japan who have adequate and advanced facilities for deep sea fishing
- Warm Mozambique currents and deep continental shelf which discourage the flourishing of fish
- Regular coastline /few sheltered bays hence few sites for fish landing and breeding grounds

c i) - North-West Atlantic

- North-East Atlantic
- North – East pacific
- North –West Pacific

ii) - Presence of extensive and shallow continental shelf which allow light to penetrate to the sea bed encouraging the growth of planktons used as fish food

- Upwelling of ocean waters caused by convergence of warm Kuroshio and cold Oyashio currents bring minerals for planktons from the sea bed hence attracting fish
- Japan has indented coastline/several bays which provide secure breeding grounds for fish
- Sheltered bays provide suitable site for building ports/landing sites e.g. Hakkadate
- Rugged landscape/mountains with infertile soil in some areas which does not favour agriculture hence make people resort to fishing
- Numerous islands had exposed/provided the fishermen access to marine life
- The area has cool waters which encourage thriving of fish

4. a) - A vein is a small crack containing minerals deposited in crystalline form while a code is a large crack containing minerals in crystalline form ✓

b) - Waste of agricultural land ✓

- Waste of industrial land ✓
- Ugliness where the land has lost its beauty ✓
- Health and accident hazards ✓

5. a i) ) - Trawling. - Line fishing - Use of barriers  
 - Use of herbs - skinning - Harpooning  
 - Use of baskets - Use of gills nets - Use of hand lanes

ii) – Cod - halibut - haddock  
 - flounder - hake - herring  
 - mackerel

(b) i) - Sheltered inlets and estuaries form ideal sites for fishing villages and ports.  
 - They also offer ideal site for fish breeding because of calm water and availability of the planktons.

(ii) - When warm currents meet cold currents the temperature of water is regulated.

- This condition is ideal for the survival of fish.
- Convergence of these currents improve circulation of oxygen and dispersal of nutrients for the fish

(c) (i) Provision of the necessary infrastructure such as transport routes to enable exploitation of fishing grounds located in remote areas.

- This will reduce over exploitation on a few accessible fishing grounds like L. Victoria.

(ii) Fishing Farming

- The development of fish farms complements the fish being caught from natural waters

(iii) Restocking of over fished grounds.

- Over fished waters are restocked using finger lings from hatcheries or obtaining them from the overpopulated fishing grounds.

(iv) International agreements on territorial waters.

- i. Countries have full sovereignty over territorial water extending for 19 km from the coast.

A further 19 km zone in which the coastal state can take action against those who break the law.

6. i) – Smoking. - Sun drying.  
 - Salting - Use of refrigerator.
- (ii) - The fishermen are required to have a licence from the government  
 This prohibits illegal fishing, over fishing and indiscriminate fishing.  
 - Inadequate capital.  
 Most of the fishermen use traditional methods of fishing which greatly reduces their catch.  
 They lack adequate funds to enable them purchase modern fishing gear and refrigeration equipment.  
 --Introduction of new species.  
 - The introduction of new fish species in the lake has affected the breeding of indigenous fish.  
 - For example Nile Perch was introduced in the lake in 1960s, it now accounts for more than 80% of the fish harvests, after having caused the disappearance of more than 200 endemic fish species and yet it's not a popular species.
- Presence of weeds.  
 - Fishing in lake Victoria is greatly hampered by the grown of water hyacinth along the shores of the lake.  
 - The weed chokes the fishing boats, hence the infested areas are avoided by fishermen, yet they contain a lot of fish.
- Accidents  
 - Accidents affecting fishermen are common on L. Victoria.  
 - Have canoes and boats capsize in the lake due to the strong winds and storms prevailing in the areas.  
 - The fishermen loose their fishing gear and equipment, as some of them drone.
- Regional Conflicts.  
 - There has been boundary conflict between Kenya and Uganda over Migingo Island on L. Victoria.  
 - This has caused the fishermen to have fear since most of them are molested or attacked by Uganda Security groups.
7. - The continental shelf is narrow  
 - Poor transport connection to the fisheries  
 - Local fishermen do not have adequate capital  
 - The coastline is fairly straight  
 - the water is too warm for fish breeding/lack of upwelling of water  
 - There is low demand for fish  
 - Fishermen lack modern equipment preservation facilities/storage facilities  
 - Inadequate skills/inadequate research technology  
 - Competition from developed countries
8. a i) - Seine nets  
 - Trawler nets  
 - Gill nets  
 - Drift nets  
 ii) - West N. America  
 - N.E Asia

- b) - Over fishing – reduced stocks
- Pollution – killing fishing
- Poor transport network – delay reaching market/ go bad
- Poor market/ fish imports – reduced earnings
- Inadequate capital – poor equipment/ preservation/ marketing
- Fish diseases – death of fish
- Weeds – difficulty to fish
- Boundary conflicts – fighting/ destruction of equipment
- c) - Source of income/ employment – reduce unemployment/ improve living standards
- Tourist attraction/ sports/ marine park – forex for developing
- Rich in nutrients – health
- Development of industry
- Health/ feed on mosquito- reduce malaria
- Feeder roads – improve transport
- Forex – country development
- d) - Sagana
  - Kabarau
  - Kibos
  - Homa bay
  - Aruba
  - Haller park/ nature trail

9. a i) -Pelagic  
 -Dermersal  
 -nadromous
- ii)- Presence of numerous foods that form inlets which provide good breeding grounds for fish
- The ruggedness of the immediate land discourage agriculture and livestock farming thus making fishing a good alternative
  - The prevailing warm Atlantic drift makes the area ice – free throughout the year thus fishing is carried out
  - The grounds have large continental shelf which are abundant in plankton
  - The dense population in western Europe provides a ready market for fish
  - The low temperature conditions in high latitudes encourages flourishing of fish
  - The highly developed technology in the region has contributed to the development of fishing
- iii) - Formulation of law against indiscriminate fishing
- Restocking the over fished areas
  - Licensing fishermen and use of standardized nets of permitted mesh sizes
  - Prohibiting disposal of effluents into fisheries
  - Introduction of new species in the existing fisheries
  - Research of fish species their habit and migratory trends
  - Personal should be trained on how to manage fisheries
- 10 a) - Drifting method.  
 - Seining method.  
 - Lining method.
- b) - It is washed by cold ocean current which influence temperature of water favouring the survival of fish.
- It has plenty of planktons than the Eastern coasts.
  - It has sheltered inlets/harbours which favour the thriving of fish and construction of fish harbours.

11. a) - Seining

- Trawling.
  - Line fishing.
- b) - Privacy/sea robbery making fishermen to lose fishing equipment and their catch.
- Water weeds such as hyacinth impede movement of vessels.
  - Storms sometimes cause accidents in the lake.
  - Territorial disputes with other countries such as Uganda.
12. a) - fishing is restricted to specific seasons to allow breeding licenses are issued to prospective fishermen to control their number
- the size of nets introduced in fishing are standardized to ensure young fish are not caught
  - fish farming is encouraged to ensure adequate supply
  - there is restriction/control on water pollution
    - b) - large market both local and foreign
  - modern fishing equipment is being used in fishing
  - it has a large continental shelves/indirected coastal land
  - low temperature which discourages agriculture hence venturing into the sea as source of income
13. a) - Seining
- Long lining
- b) - The Coastline is fairly straight/regular/has few indentation
- The Continental shelf is narrow
  - The water is too warm for the breeding of fish
  - Local fishermen do not have adequate capital/have inadequate preservation facilities
  - Local fishermen face competition from developed fishing countries e.g. Japan
  - There is low demand for fish in the local market
  - Poor transport connections to fisheries resources
14. a) Pelagic fish are the fish that mainly live near the surface or at the shallow depths or lakes and seas, while demersal fish are those which live at or close to the bottom of water bodies
- b) - Over fishing – Some fish species in the fresh water lakes have been over- harvested to the extent that natural replacement has been limited
- Pollution – Some industries release their wastes directly into rivers, lakes and oceans. The wastes are hazardous and make the water bodies inhabitable for fish
  - Inadequate capital – Most fishermen use traditional methods which reduces their catch
  - Inadequate transport – Due to the poor maintained roads the fishermen don't reach the market on time
  - Introduction of new species – This introduction has affected the breeding of the indigenous fish
  - Presence of weeds – Weeds like hyacinth traps the fishing boats hence the areas are avoided