

FISHING IN MOROCCO

Morocco is one of the major fishing nations in Africa. Fishing is carried out in the north Atlantic and Mediterranean Sea.

Major Fishing ports are Agadir, Rabat, Safi, Casablanca, Tefouan Etc.

Major fish species caught are Tuna, Anchovies, Mackerel, Sardines, Crustaceans and Shell fish such as Mussels, Oysters etc.

SKETCH MAP SHOWING MOROCCO FISHING GROUNDS

FACTORS FAVOURING FISHING IN MOROCCO

Morocco has along indented Coastline that favors development of landing ports such as Agadir, Tan-Tan and Tangier. The indented Coastline offers shelter against flooding's, provide fish breeding grounds.

The Canary island in the Atlantic Ocean offers opportunities for off shore fish. Landing hence dev't of fishing activities.

Morocco has Extensive fishing ground in both the Atlantic Ocean and Med Sea. This offers wider area for fishing activities.

The Canary cold currents bring a cooling effect that favors growth of planktons of which fish feeds. This attracts fish along the coast.

A rich continental shelf due to mineral salts derived from the land and deposited in the Ocean by Rivers like Oumerbria. This favors the growth of planktons which in turn favors fish multiplications.

Presence of a relatively -smooth Sea floor in the Atlantic Ocean favors use of deep-sea fishing methods like Trawlers.

Morocco is a dry country with limited agriculture potentials. This forced people to the sea for livelihood.

Existence of large number of commercial fish species such as Tuna, Pilchards, Anchovies, Mussels, Oysters, Lobsters.

The Moroccans have a tradition as sea farming people. Most settlements are along the coast of Agadir, Rabat, Casablanca. This has made fishing their major occupation.

The Mediterranean forests have provided timber for boat making as well as fish net floaters (Cork) extracted from the bark of the cork tree in North Morocco.

With a local population of 31,418,000 people there's a big local and foreign market for the Moroccan fish is Exported to Spain, Italy, Japan & U.S.A

Several fish processing plants and refrigeration centers have been established along the coast of Agadir, Casablanca. These provide ready market for fish. They process the fish into fish oil, fertilizers give hence limit fish losses.

Relative political stability has attracted fishing foreign investors from Spain, Norway and Italy to invest in the Moroccan fishing industry.

Supportive gov't policies inform of tax holidays to foreign investors and infant fish industries.

Presence of fishing organisations and cooperatives that fisher men better fishing methods, bargain for better fish sale price etc.

Developed transport network informs of roads, railways and air ways that link chief ports like Agadir, Casablanca to market centers like Spain, Saudi Arabia, France etc.

Intensive research conducted by the Moroccan fish research institute and the international Association of fish inspection. Research involves fish breeding, restocking of the Atlantic Ocean and Med sea artificial fertilizing of fish Eggs, introduction of fish farming at Rabat, Casablanca etc.

Modern technology involving construction of motor boats, under water cameras, fish attractants and Baits, fish feeders have been introduced in Morocco by international fishing equipment manufacturers. Such as Bass pro fishing, Dong Ali fishing industries co Ltd and Cabela fishing equipment. These have simplified fishing activities.

Application of modern and Efficient fishing methods such as Drifters, long lining, Trawlers in the Mediterranean Sea and Atlantic Ocean have favored development of fishing in Morocco.

Morocco has benefitted from international fishing agreements which gave her a fairly extensive fishing ground of over 320km EEZs in the Atlantic Ocean.

FISHING IN GHANA.

Fishing grounds; Atlantic coast and Inland water bodies like lake Volta.

Major fishing ports; Accra, Takoradi, Tema etc.

Major fish species Caught; Sardines, Tuna, Cod, Shapper etc.

Factors favouring Fishing in Ghana (Similar) to those in Morocco

- | | |
|-------------------------|--|
| Human ones | <ul style="list-style-type: none">-Presence of labour both skilled and semi-skilled-Presence of capital for building fishing factories-Along Sea faring tradition along Atlantic Ocean H₂O's-Use of modern fishing gears e.g., Trawlers-Improved means of transports Eg roads-Presence of high demand (Mkt) at Accra etc.-Research into fish species, breeding conditions etc.-Favourable gov't policy e.g., encouraging dev't and conservation of fish resources-Presence of fish cooperatives along ports e.g., Tema. |
| Physical factors | <ul style="list-style-type: none">-Presence of indented coastline for landing sites-Variety of fish species e.g., Tuna, Cod etc.-Abundant plankton to feed fish-Large continental shelf-Smooth Ocean floor ; presence of rivers-bring nutrients for plankton |

-Presence of forests- for boat making.

FISHING IN GABON

Fishing grounds; Atlantic Ocean waters based upon Benguela and Guinea current Systems.

Fishing ports; Ports Gentil, Settee Cana, Banda and Mayumba.

Major fish species Caught; Tuna, anchovia, Pilchards, Sardines and horse mackerel, Lobsters, Oysters and prawns.

Fresh water fish species caught are Tilapia, Cat fish etc. In rivers (Ogoove and Ivineto) and in ponds.

FACTORS FAVOURING FISHING -Similar to those of Angola and Namibia.

FISHING IN SOUTH EAST ATLANTIC FISHING GROUND.

NB: Fishing nations in this fishing regions or grounds includes;

-Namibia, Angola and South Africa.

FISHING IN ANGOLA

Angola has a 1650km long coastline for fishing industry based on Benguela and Guinea current systems.

Marine fishing is done in south Atlantic Fishing grounds with southern fishing zone.

Far most important producing Horse mackerel, sardines, Tuna and Hake. The central fishing zone stretching from Luanda-Benguela produces Horse mackerel and Sardines while the north fishing zone stretching from Luanda-Cabinda produces mackerel and Sardines as well. Other marines species are Hake, Anchovy, Pilchards in 2009 fish productions was 272263 tones.

Inland fishing is done along rivers such as Cuanza, river Cubango, river Cuando and Cunene. Major fish species caught are Tilapia and Cat fish.

Aqua culture is also practiced at Lubango and Luanda and Cazombo

The chief fish ports in Angola includes ; Namibe, Lobito, Sumbe, Benguela, Porto Alexandre, Porto Amboim, Ambriz, Luanda etc.

Fish caught is either boiled and eaten or canned for export. Some fish is smoked and exported to DRC the inferior, fish waste, are processed into fish meal for animals or fertilizer.

FACTORS FAVOURING FISHING IN ANGOLA

-Long indented cost line that offers sheltered ground for dev't of fishing port e.g., Luanda, Lobito, Benguela etc.

-Existence of a variety of fish species e.g., Hake, Pilchards, Anchovies, Mackerel, Shell fish etc.

-Extensive continental shelf extending for over 200km provide shallow water fishing activities

-The Cozell Benguela currents along the coast creates good condition for growth of Planktons on which fish feeds

-The arid climate of Kalahari Desert has driven people to coast to carry out fishing

-The tropical forest around the coast of Angola provides timber for boat construction and fish packaging boxes.

-Existence of skilled labour due to presence of Education institutions where fishing is taught

-Large sum of capital invested by foreign investors from South Africa, Russians, Korea, Japanese etc.

- Intensive research to develop fishing industry e.g., research in fish breeding through Hatcheries, Fish farming etc.
- Developed transport network in form of roads e.g., Radiate around ports like Luanda, Benguela etc.
- Fairly large population of Angola i.e., 15,941,000 provides inlets and labour to fishing products/industry.
- Most settlement along the coast at for example Benguela and Lobito (people are Sea farming by traditions)
- Supportive gov't policy e.g., control of pirates and theft along the Atlantic Ocean; restocking fish species e.g., Anchovies.
- Relative political stability has attracted Sea Vuna fishing company Benguela Sea
- Presence of off shore islands e.g., Baia dos Tigres (very island 30km long).

FISHING IN SOUTH AFRICA

- Is the top fishing nation in Africa, with in shore and deep-Sea fishing as well as aqua culture being highly developed
- Fishing ground is South East Atlantic along Agulhas bank at the Cape (warm Mozambique mixes with cold Benguela current).
- Chief ports are ; Somerset west ;Saldanha, Port Elizabeth, East London and Cape town
- Cheap fish species are; Pilchard, Anchovies, Hake, Sardines, Sole, Mackerel etc. Whales are also caught and whale oil is extracted.
- Sea weeds of different species are also gathered for either consumption as a relish in soup or feeding animals
- Sport fishing involving Angling fly fishing, Trout fishing is highly developed in South Africa

FACTORS FAVOURING FISHING IN SOUTH AFRICA

- Long and indented coast line offers sheltered ground e.g., Cape Town.
 - Cold Benguela current attracts a lot fish in the area
 - Mediterranean forest near the Cape provides – Timber (boat making)
 - Cool temperate climate (water) favor fish preservation
 - Bays e.g., Saldanha- sheltered sites for fishing villages
 - Variety of fish species e.g., Hake, Pilchards and Anchovies etc.
 - Large sum of capital from within and foreign investors e.g., Japanese.
 - Intensive research e.g., 1897 research center introduce Rainbow Trout fish species
 - Developed transport network (Roads and Rails around Cape town etc.
 - Fairly large population 47,432,000 and foreign market
 - High technology e.g., use of mega ships
- Most settlement e.g., Cape town (Sea faring people).

FISHING IN NAMIBIA

- Namibia located in South Africa does marine fishing in south Atlantic Ocean H₂O's
- Major fishing ports ;Walvis Bay; Lüderitz and Swakopmund.
- Major fish species; Aemersal,Hake as most important. Others are;pilchards,Achovies,Horse Mackerel, Haddock,etc.

- Fresh H₂O fishing; in river cumene with Tilapia and Catfish most caught.
- Fish processing and Exporting Companies at Walvis Bay and Lüderitz are; Benguela sea products at Walvis Bay; Aqua marine fishing at Wind Hock;manica group Namibia at Walvi Bay. Marco fishing(PTY) Ltd at Lüderitz etc.

FACTORS FAVOURING FISHING IN NAMIBIA.

- Long and indented coastline offer dev't of ports e.g., Walvis Bay, Lüderitz etc.
- Existence of variety of fish species E.g., Hake,Mackerel,Anchovies etc.
- Existence of skilled labour from Educational Institution e.g., Namibian marine and fisheries institute at Walvis Bay port.
- Large sum of capital from sales of Diamond and Gold; Foreign investors from Japanese companies, Korea etc.
- Intensive research found at centers such as Swakopmund.
- Developed T/P network in Walvis Bay, Lüderitz etc.
- Relative political stability attracted Namibian fishing industries Ltd (Nam fish;)Benguela Sea products at Walvis Bay etc.
- Most settlement at Namibia along coast e.g., at Walvis Bay, Lüderitz.
- Fairly big population of 2.031.000 in Namibia offer market and labour in fishing industry
- Presence of smooth Ocean floor along fishing ground in Atlantic Ocean
- Supportive gov't policy e.g., Navigation patrols and Army to control Pirates
- Bays e.g., Walvis Bay sheltered development of ports

FACTORS LIMITING FSHING IN SOUTH EAST ATLANTA FISHING GROUND (ANGOLA, NAMIBIA AND SOUTH AFRICA)

- Limited (poor) limited development of fishing i.e., poor fishing gears; limited storage facilities and preservation; poor technology in transport
- Limited continental shelf in Angola and Namibia limit quantity of fish caught
- Over fishing practices especially in Angola and Namibia led to depletion of fish species hence limiting fishing activity.
- Competition of market for fish from other country with developed fishing activities e.g., Japan, China etc.
- Inadequate capital for modernization of fishing industry through establishment of processing factories , development of roads etc.
- Pollution from coastal industries e.g., Luanda and Tombia fishing villages in Angola.
- Political instability e.g., impact of civil wars in Angola. Many fishing industries were destroyed and investors fled the country
- Climatic changes such as Tropical storms limited fishing in Angola and Namibia. Storms limited movement and halted fishing
- Limited skilled man power to locate, extract and process and market fish limited dev't of fishing in Angola and Namibia.
- Straight nature of coast line along Angola and Namibia, there are fishing villages / ports this affects fish landing and development of fish processing industries
- Profit repatriation by foreign companies such as Benguela Sea product Erongo marine enterprises. Much of profit are reinvested but taken away.
- Territorial conflicts were there is shared boundaries on international H₂O's by Angola, Namibia and South Africa.
- Rough Sea floors hinder use of some modern fishing method eg
- Limited commercially valuable fish species Tuna, Mackerel, Pilchards etc.
- Large quantities of predators e.g., Sharks, rough tail Rats eat fish
- Limited research on fisheries resources e.g., to do restocking.
- Unreliable T/P networks e.g., Muddy and dusty roads.
- Un favorable gov't policies which put emphasis on development of mining and other sectors limit fishing activities
- Reduction in quantity of planktons due to climatic changes or reductions in birds dropping to facilitate growth of planktons.

Qn. What measures are being taken to improve fishing industry in South East Atlantic Fishing ground (Angola, Namibia and South Africa)

FISHING IN NORTH WEST ATLANTIC FISHING GROUND

This region is located along the Eastern shores of Canada and USA. It has a vast coastline of over 8000km with a fishing area of over 520000km² centered on Grand Banks. Other important banks are Georges bank, Sabie bank etc.

It constitutes the New found Land and Labrador provinces of Canada and The New England States of USA.

This was traditionally the worlds richest cod fishing region though catches declined due to over fishing .

For more than 450yrs, New Found Land have been visited by fishing fleets of France, Spain and Portugal, Britain and these have now been joined by fleets from Japan and USSR. However major countries carrying fishing activities in this region are Canada and USA.

The major fish species caught are Cod, Mackerel, Herring in surface H₂O. Halibut, Hake, Haddock etc. caught in the deep waters.

Inshore fishing is also carried out to catch shell fish and crustan ceans such as lobsters, crabs and shrimps.

The chief (major) ports are New Haven St Johns Sydney, Lewis pot, Liver pool, Halifax etc.

Fishing is done in the Atlantic Ocean H₂O, Labrador Sea, Hudson Bay and Gulf of St Lawrence

FACTORS FAVOURING FISHING IN NORTH WEST ATLANTIC FISHING GROUNDS (CANADA AND USA)

- Existence of a long-indented coast line stretching for over 8000km from New Found land to New England States
- Convergency of cold Labrador current and warm Gulf stream lead to upwelling of mineral salts favoring growth of planktons off New Found Land at about latitude 45°-55°N.
- Indented coast line, fiords and Estuaries lead to development of fish ports e.g., Halifax, St John Placentia they also favor breeding of anadromous fish species like Salmon.
- Cold condition (ice) limited resources on land especially in Canada has driven people to the Sea for livelihood.
- Existence of a smooth Sea floor around the Grand bank, Sable bank encourages both pelagic and demersal fishing such as use of Trawler method .
- Canada being a country enormous forest reserves are source of timber for boat making, packaging boxes etc. Used at New found Land, ports like Boston, port land and Gloucester still important for ship building
- Existence of a cold/ temperate climate facilitate fish multiplication especially of Cod, as well as preservation.
- Strategic location b/n developed countries of Canada, USA and nearness to Europe has attracted other countries like France, Spain etc. To carry out fishing in the region .
- The warm Gulf stream leads to melting of ice enabling fishing activities around the Grand bank, Sable bank take place through out the year
- Rivers such as St Lawrence in Canada brings out minerals nutrients to the Gulf of St Lawrence and New Found Land which facilitates growth of planktons on which fish feeds on.
- Island such as Cape Breton, Prince Edward and New Found land provide sheltered harbour fishing activities. Besides the offer opportunities for dev't of landing ports such as Sydney.
- The region is Endowed with a variety of fish species of commercial values e.g., Cod, Mackerel, Herring, Haddock etc. These are processed into fish meals, fish oil, Agricultural fertilizers particularly the menhaden species.
- With a population of over 32,268,000 and 288,213,000 people Canada and USA respectively . The region has a big local market for fish coupled with a foreign market in Europe e.g., UK and France.
- Modern technology such as fish detectors use of trawlers, motor boats etc. Have been adopted by both Canada and USA and the visiting Countries like France, Spain and UK etc.
- Large sum of capital has been injected in fishing it has been got from banks such as Chase manhattan, JP Morgan, Citi bank and accumulation of saving from forestry and mineral sector.
- Traditionally the region is the major fishing region originally for Cod and currently for other fish species. The Canadian and early settlers along the Eastern coast are Sea faring people since the constitute of French and Spanish and Portuguese explorers since the time of Christopher Columbus the great explorer .

- Both Canada and USA have modern T/P facilities linking the interior cities like Ottawa, Quebec, Detroit, Michigan to the coastal ports of Cape Cod, Halifax e.g., Canadian Pacific (Sea to Sea railway links the west coast from Vancouver and New York City in the East.
- Political stability in both Canada and USA have encouraged fishing activities
- Large quantities of both HEP and Nuclear energy have been vital in fish processing as well as preservation at Halifax, St Johns and New found land.
- Existence of both skilled and semi-skilled labour to carry out processing/ marketing and packaging / Transportation/ fish catching respectively constituting Spanish, Portuguese and French migrants
- Supportive gov't policy of both Canada and USA involving tax holidays, extension of electricity and transport routes to major fishing ports like Halifax, St John etc.
- Intensive research is carried out in both Canada and USA to develop fishing industry. It involves re-stocking, artificial fertilization of fish eggs as well as controlled fishing around Grand, Sable bank e.g., Cod fishing was suspended in 1992 to avoid over fishing
- Presence of efficient fish cooperatives in both Canada and USA based on New found Land and New England State. This teaches fish farmers, market their produce as well as bargain for a better price of fish produce
- presence of hundreds of both local and foreign fish processing factories at New found Land and New England state these do fish canning, process fish oil eg Cod; liver oil as well as fertilizer from fish species like menhaden fertilizers.

PROBLEMS FACING FISHING IN THE NORTH WEST ATLANTIC FISHING GROUND.

- Reduction of fish quantities especially Cod, Salmon due to over fishing around Grand Banks.
- Competition between local Canadian and the USA FISHING COMPANIES AND VISTING FLEETS FROM Japan, Russia, France and Spain.
- Industrial establishment along the coast particularly the Canadian Timber industry at Labrador and New found Land have led to water pollution along the gulf of St. Lawrence.
- Occurrence of fog along the ports of Halifax, Boston, Liver pool cause poor visibility often leading to accidents.
- The region is located along a busy Transit route for Imports and Exports to Europe hence facing the problems of interference by big Ships.
- Territorial conflicts between Canada and USA have affected their relationships.
- Loss of lives due to accidents involving drowning of fishermen.
- Limited labour supplies especially during winter season coupled with strict immigration laws that have led to departure of illegal migrants who often provide cheap labour.

SUMMARY ON FISHING IN CANADA

- Canada is one of major fishing nations and Exporters of fish. In 2004, it was ranked 6th with total Exports Earnings over \$ (USA)=3.5 billion.
- Major fishing grounds are North West Atlantic fishing ground as well as North East Pacific water.
NB; North-West Atlantic fishing areas includes; New found land and Labrador and fishing is caught along Grand Bank; Marine Province of Nova Scotia and Bruns Wick.
- Major fishing ports in North West Atlantic region includes; St. Johns, Halifax, Sydney, Port Hope, Simpson etc.
- Major fish species in this region (North West Atlantic Waters) includes; Cod, Salmon, Lobsters, Herrings, Haddock, Sardines, Halibut etc.
- Canada has more than 60 freezing plants and 60 salt- fish plants (factories) in New Found land to process fish into fish meal, Fish oil, Arid Unpalatable (Oily fish) species (Menhaden) processed into fertilizers.
- In North East Pacific Waters along its Western Coast, Canadas fishing is majorly within the provinces of British Columbia.
- Major fish species in North-East pacific waters includes; Hake, Herrings, Salmon, Crab etc.
- Major fish ports in North-East pacific H₂O includes; Vancouver, Prince Rupert and Skagway.
- Inland H₂O fisheries takes place in lakes such as Athabasa, L. Winnipeg, and fish species caught are Salmon, White fish.

FACTORS FAVOURING FISHING IN CANADA

- Extensive Continental shelf both in East including Labrador and New found land and in West along British Columbia.
- Long flooded Coast line with many off-shore islands well sheltered e.g., Vancouver and Queen Charlotte in West and Cape Breton, Prince Edward islands in the East.
- Religious factors (Being Catholics) a lot of fish is demanded during fasting.
- Rivers such as Skeena, Fraser etc. bring nutrients in Pacific Ocean leading to growth of planktons
- Poor agricultural resources due to rugged relief e.g., Rocky mtns in the West forced people from British Columbia into Sea for fishing (source livelihood)
- Smooth Sea floor along Eastern side enable use of Trawlers etc.
- Cool temperature climate along Labrador and New found land favour fish preservation under natural conditions.
- Cool waters also favours multiplications of planktons.
- Geographically Canada e.g., British Columbia (West) and New found land in East have abundant fish species e.g., Cod respectively and Hake.
- Canadians are naturally Sea funny people particularly in maritime provinces of Nova Scotia and New Brunswick.
- Supportive gov't policy towards diversifying forestry and mining sector with fishing activities specially in British Columbia, Leadership, Adequate security favouring fishing and Tourism e.g., along Prince Rupert.
- Canada is Hi-tech country extended into fishing industry involving manufacture of fishing equipment e.g., Fish detectors.
- Existence of efficient Fish cooperatives organization e.g., Nova Scotia fish cooperative organization in Eastern Sea Board.
- Existence of better Processing/ storage fish facilities at New Brunswick, Vancouver and New found land.
- Canada's local population of 32,26,000 million people and 298,213,000 in neighbouring USA provide labour and market potentials in fishing industry.
- Modern fishing methods e.g., Trawlers, long lining etc. used at Grand Bank, St. Pierre Banks scoops a lot of fish.
- Modern T/P and vessels e.g., ships equipped with processing facilities, electrified railway systems radiating in fish ports e.g., Vancouver, Prince Rupert, St. Johns and Lewis ports.
- International fishing agreement gave Canada large fishing in both North -West Atlantic and Exclusive Economic Zone (EEZ) of 320km (200 miles).
- Intensive research carried out at Vancouver, New found land to develop fishing ground industry. This involves restocking of fishing grounds; artificial fertilization of fish eggs.
- Presence of Capital generated from sale of timber and mineral resources have been injected in fishing industry at Vancouver, Nova Scotia and New Brunswick maritime province.
- Canadian Ship building industry Established long ago facilitated fishing grounds in Pacific to coastal ports of Vancouver.
- Canada has abundant skilled and semi-skilled labour that effectively carries out fishing activities at ports of Vancouver, Skagway, Prince Rupert etc.

FISHING IN NORTH EAST PACIFIC FISHING GROUNDS

- Canada and USA are the most Countries that carry out fishing in this zone (region).
- The region has long and highly indented Coast line of about 11200km stretching from Alaska (a state of USA) Southwards to California (USA).
- Fishing is done in Pacific Ocean waters and near by rivers like Skeena and Fraser.
- Salmon is most fish species caught from Alaska and is shipped to ports Vancouver and Seattle for Exports. Other fish species caught are Hake, Halibut, Herrings and Cod, flounder and Alaska Pollack.
- In relatively warm water of the South off waters of California, Sardines and Tuna are caught Crabs, Oysters are also caught and sold in North America.
- Whales are also located by spotter air crafts or by Echo- Sounding Equipment and fast catcher-boat with Explosives and have pens.
- Whales oil is extracted, the liver is source of Vitamins, its bones and flesh are ground to make fertilizers. Whales oil is used to make Margarine, Soap, Lubricants etc.

FISHING IN U.S.A

- By 2004, USA was the 4th largest fish exporter Earning US\$ 3.9billion.
- Fishing is done in both Atlantic Ocean waters(North-West Atlantic fishing ground) and Pacific Ocean waters (North East Pacific fishing grounds).
- North East pacific fishing grounds extends from Alaska to California while the North West Atlantic fishing ground Extends from Marine in New England state to north Florida in the South.
- Major fish state of USA are Alaska, California, Delaware, Massachusetts and New Jersey.
- Major fish ports are New Bed ford, Baltimore, New Haven, Jacksonville on Eastern side of USA (North-West)Atlantic sea board including Beaufotat port .
- Shallow water of north West Atlantic Ocean are rich in Cod, Ocean perch, Menhaden, Mackerel, Herrings and flounder fish species.
- Menhaden are caught in the Gulf of Mexico and IS Extracted as a substitute to vegetable oil. Bones and fish waste are made into fish meal or fertilizers.
- Along North-East pacific sea board, Salmon, Alaska pollack are major fish species caught . Other fish species caught in this region are Tuna, Sardines, Pilchards in relatively warm waters off the coast of California.
- Major landing ports on the pacific Sea board are Seattle, Portland, San Diego, San Jose, San Francisco as well as Anchorage in Alaska.
- Fishing is done in Pacific Ocean waters, Bering Sea, Gulf of Alaska, Beaufort Sea, New Alaska etc.

FACTORS FAVOURING FISHING IN USA

- Extensive Continental shelf Extending from Alaska to California on pacific side and from Marine to North Florida along Atlantic Ocean waters.
- Long flooded Coastline with many off shore islands, well sheltered such as Aleutian, Kodiak Island, St. Lawrence islands etc. near Alaska.
- Rivers such Colorado, Sacramento, Alabama, Mississippi etc. bring mineral salts into Ocean leading to growth of planktons (fish food).
- North pacific current bring warm conditions along N-E pacific waters enabling fishing through the year due to ice free condition.
- While gulf stream N-W Atlantic results into ice free condition along coastal ports such as Boston.
- Cool waters in Alaska favours multiplications of fish planktons.
- Smooth sea floor along the Eastern pacific and Western Atlantic Ocean waters respectively enables use of Trawlers etc.
- Presence of variety of fish species e.g., Cod and Mackerel on Eastern sea board (N-W Atlantic) and Salmon and Alaska pollack on Western sea board (N-E Pacific waters).
- Political stability is USA encouraged fishing activities.
- Intensive research carried out to develop fishing industry e.g., re-stocking, artificial fertilization of Egg fish (fish Eggs).
- Presence of processing factories at Boston along N-W Atlantic waters and Seattle, San Diego etc. along N-E pacific waters.
- Developed T/P routs radiating with fish ports such as Boston, Port land, San Diego etc. facilitate fish marketing etc.
- Supportive gov't policies involving tax holidays, extension of Electricity and T/P routs to major fishing ports e.g., Boston, San Diego, Port land etc.
- Large sum of capital injected into fishing industry.
- Presence of efficient organization teach fish farmers, market their products etc.
- USA is a Hi-tech country with modern technology such as fish detector, motor boats, use of Trawlers etc.
- Existence of both skilled and semi-skilled labour to carry out fish processing, marketing and packaging, Transporting respectively.
- The local population of 288,213,000 (2004 figures)offer ready and big market for fish. Fish is also exported to China etc.

CONTRIBUTIONS OF FISHING TO USA **POSITIVE CONTRIBUTIONS.**

- Source of gov't revenue through taxing companies that carry out fishing. Such as revenue is spent to develop infrastructural facilities (Health, Education, Roads etc.)
- Source of foreign exchange through fish exports to China, UK, France, Germany etc. This is spent on Health care, Agriculture Modernisation etc.
- Promotes infrastructural dev't e.g., roads, railways and modern ports handling facilities at Glove coster, Baltimore etc.
- Have led to growth towns and ports which serve other purposes like accommodation and administration e.g., Seattle, Los Angeles in West and Boston in East of USA.
- promoted resource utilization particularly forestry resources along the Eastern Sea board in New England Forest provides timber for boat and Ship making etc.
- Promoted international cooperation and Trade between USA and her trade partners like Saudi-Arabia, Germany France, Belgium etc. This is important for Economic; political and Social dev't.
- Fishing sector has diversified US Economy against mining , forestry and Tertiary sector. This has promoted steadily flow of income to people in New England and other fishing states.
- Menhaden fish species and other fish wastes such as bones are processed into fertilizer used in agriculture farms at California and New England states such as Maine.
- Fishing has promoted tourism in major fish ports e.g., Baltimore, Glov coster etc. From this, a lot of foreign exchange is Earned.
- Fishing industry is the source of Medicine e.g., Insulin and Cod liver oil extracted from Cod fish in major fish states of New Jersey, Massachusetts. Minerals lie Iron, Calcium, Iodine, phosphorous, Copper are also got from fish foods.
- Has promoted research and Education. Students from all over the world tend to carry out research on fisheries at the North-West Atlantic grounds and in states of Alaska.
- There has been acquisition of skills of people engaged in fishing industry at Baltimore, Glov coster. This includes aqua- culture, deep sea diving, fertilization of fish Eggs particularly the Salmon.
- The fishing industry has led to dev't of marine technology equipment, fish doctor etc. In New Jersey and Maine.
- Fish species such as Tuna, Salmon etc. are very nounshing and hence provided an elite to people in New England as well as California.

NEGATIVE CONTROBUTIONS.

- Over fishing resulting in to depletion/ reduction of fish species like salmon, cod around the Eastern sea board and Western Sea board.
- Competition with other fishing nations like Japan, Korea, Norway etc. on world market has led to price fluctuation leading to losses.
- Fishing vessels and fish processing plants at Baltimore, Glov cester, Seattle have led to water pollution. Wastes are often dumped into the sea.
- Deep sea fishing has led to increasing cost of fishing making it expensive with limited Economic importance.
- Fishing has led to encroachment of territorial waters from countries like Japan, Canada often resulting into conflicts.
- Have led to emergency of urban related problems like congestion, theft in fishing ports like Glov cester, Beaufort, Seattle etc.
- Ship building and boat construction especially in New England have led deforestation. This siltation of rivers like Tennessee.
- unemployment levels have began rising due to use of modern fishing techniques like Trawlers, Drifters, Seine nets etc. along the coast of New England.
- Death resulting from drowning/Capsization or collision of fishing vessels due to fog around the gulf of St. Lawrence is a set back to the fishing sector.

Qn. Assess the contribution of the fishing industry to the dev't of either Morocco or USA.

Qn. Account for the development of the fishing industry in either Scandinavian region or Canada.

FISHING IN NORTH WEST PACIFIC FISHING GROUND

- This is the greatest fishing region. It's a vast region within the Pacific Ocean made up of several seas e.g., Bering seas, East China Sea of Japan, Yellow sea, Philippine, Sea of Okhotsk etc.
- Countries that carry out fishing in the area are Japan, China, North and South Korea, Vietnam, Indonesia, Philippines, Taiwan and Thailand.
- Salmon fish constitutes the largest proportion of fish caught from Sakhalin, Kamchatka and Kuriles. Other fish species caught are Bonito, Tuna, Alaska pollack, Sardines, Sharks, Mackerel and Whales.
- Fresh water fishing and fish farming is also practiced in Japan, Vietnam, China and Korea and fish species caught includes; Eels, Carp, Trout and Salmon since these live in both salty and fresh waters.

FISHING IN CHINA

Since 2004, China has been the world's top fishing nation. In 2004, it's fish Exports accounted for 9.2% of the world total Earning the country US \$ 6.6billion.

Major fishing provinces are; Kwangtung, Jiangsu (Kiangsu), Fujian (Fukien) and Zhejiang (Chekiang). Citizens in these provinces have had a tradition of sea faring for many centuries.

Fishing is concentrated in the yellow sea, East China sea, South China sea and as far as the Philippines sea.

The major fishing ports are Tianjin, Shanghai, Hong Kong, Qingdao, Changjin, Inch, Busan etc.

Methods used to catch fish includes; Drifters, seines net, Trawlers as well as basket traps, gill nets in inland rivers like River Yangtze, Yellow river, lake Tihu, L. Boyanghu and fish ponds in the Guang province.

Major Marine fish species caught includes; Sardines, Mackerel, Cod, Salmon, Tuna etc.

While fresh water fish species caught from lakes and rivers and fish ponds includes Eels, Silver carp, Rainbow, Trout, Bream, Mullet etc.

FACTORS FAVOURING FISHING IN CHINA

-Existence of long indented Coastline extending over 14500km from the Bo Hai gulf in the north to Gulf of Tonkin in the south.

- Existence of sheltered inlets and bays which provide good sites for fish breeding and dev't of landing ports and villages such as Shanghai, Tianjin and Hongkong.
- The meeting of the warm Kuro Sio and cold Oyashio currents create ideal conditions for growth of planktons on which fish feeds.
- The yellow river , Yangtze river brings mineral salts to yellow and East China sea. This favours growth of planktons on which fish feeds. In turn this attracts a lot of fish.
- The relatively smooth floor within the yellow sea, East China sea and South China sea enables use of pelagic and demersal fishing methods like Trawlers, Drifters etc.
- Existence of Nourishing fish species in the yellow sea, China sea such as Mackerel, sardines, flounder, cod, Anchovies, Pilchards, Herrings etc. have encouraged fishing because they have ready demand on world market.
- The Kuro Sio current washing the Chinese coastline results into ice free conditions favouring fishing throughout the year.
- The cool temperate climate along the China sea, Yellow sea facilitates natural preservation of the fish caught.
- Abundant Mon soon forests of China are source of timber and poles used to construct fishing boats, junks, tong kangs and fish packaging boxes.
- Numerous fresh water bodies such as yellow river, river Yangtze, Zhejiang lake, L.Luobubo and L. Dongtinghu etc. provides opportunities for fresh silver carp, mullet, bream etc. are caught.
- With local population of over 1,315,844 millions by 2004 figures, and big population in neighbouring countries like Japan, Vietnam, India, there's a big demand for Chinese fish.
- Supportive gov't policies involving giving tax holidays, attraction of foreign investors from USA, Japan favoured fishing activities in Guangdong province.
- China is increasingly becoming a Hi- tech country and therefore applied modern technology such as motor boats, Fish detectors, automatic fishing robots in aqua culture to develop the fishing industry. Modern fishing equipment is locally manufactured by B2B manufacturers Com. Company , Dong Ai fishing industries Co. Limited.
- Large sum of capital have been injected in the Chinese fishing sector, especially the Jiangsu and Zhejiang province. Capital inform of loans is obtained from the agricultural Bank of China which was especially formed in 1948 to help farmers and cooperatives.
- The Chinese in the overcrowded region of Guang dong, Fujian, Zhejiang and Jiangsu have had along tradition of sea faring for many centuries. This has made them sailors and fishermen.
- With a local population of over 1,313,844,000 billion people (2004 figures), China has all forms of labour needed to develop the fishing industry as fishermen, research assistants, marketing agents etc.
- Political stability especially since 1976 has made China the world fastest growing economy. Local and Foreign investors from USA, Japan have invested in the fishing industry because of political stability.
- The successful ship building industry in China have favoured Construction of fishing boats, ship building industries are found in the Tianjin-Beijing, Wuhan area and Xijiang Delta industrial regions.
- Efficient fishing cooperatives and communes have favoured fishing activities. Different people have formed fishing cooperatives e.g., Tianjin fishing cooperatives. These are grouped into fish guilds, fishing associations, Trade Unions, Maritime association.
- Intensive research to develop the fishing industry is carried out at Tianjin, Shanghai and Hongkong . It involves fish farming, artificial fertilization of fish eggs, Restocking of the yellow sea and East China sea.
- China has benefited from international fishing agreements which gave her fairly extensive fishing ground. The 320km EEZs, in the yellow sea highly favors fishing activities.
- Modern and efficient water, road, railway and air transport link the fishing centers like Tianjin, Shanghai and Hongkong to both foreign fish markets like Beijing and neighbouring towns of Taipei in Taiwan, Seoul in Korea etc.
- Presence of modern fish processing and storage facilities have led to dev't of the fishing industry in China. In Tianjin alone, there are more than 500 fish processing factories. Other factories distributed throughout the country.
- Access to new fishing grounds. The China National fishing corporation (CNFC) have made agreements with other distant countries allowing them access to their fishing grounds. Today, Chinese fleets do fishing in as far as the West African countries and North-West Atlantic fishing grounds.
- Application of modern and efficient fishing methods such as Trawlers, Drifters, Long lining etc. in the yellow sea, East and South China sea has favoured development of fishing in china.

FISHING IN JAPAN-(NORTH WEST PACIFIC FISHING GROUNDS).

Japan is one of the leading fishing nations in the world Contributing about 15% of the world total Caught, at the same time it's the leading fish importer.

In 2004, Japan was top fish importer spending over US \$ 14.6billion on fish importers.

Fishing is done in the Sea of Japan, East China sea and as far as the Philippine sea in the South.

Japan also participates in deep sea fishing whereby it's fleets operate in all oceans under agreements with the surrounding countries.

Hundreds of fishing ports and villages are all over the long-rugged Coastline from Hokkaido in the north to Kyushu in the South. The chief (major) ports are; Nagoya, Fukuoka, Hokodate, Osaka etc.

Fish species Caught includes; Sardines, Herrings, Mackerel, Salmon, Yellow tail, Shell fish and crustaceans of which crabs and Lobsters are the most important

From deep sea fishing, species caught includes; Alaska pollack, Tuna, Cod, Bonito, Herrings and Mackerel.

Japan is the 2nd largest whaling nation after Russia. Whales are caught in the north pacific and in the Antarctica for their valuable oil. What oil is used to manufacture Margarine, Lubricant, burning oil, soaps etc.

In Japan, Fishermen also practice collection of sea weeds as well as sea weed farming.

The Edible sea weeds are consumed as food while the industrial sea weeds are converted into iodine and fertilizers.

The fish wastes such as offal's, bones and the inferior fish species e.g., Capelin and Menhaden are converted into fish meal for animal feeder or fish manure and fish oil.

Japan being a Hi- tech country has modern and large fishing vessels that have in built refrigeration, floating canneries as well as processing facilities on board. Fish species such as Tuna, Cod, Salmon etc. are processed on spot and exported immediately. Such big vessels (ships) may stay deep in waters (sea) for a whole year. Fish caught is processed and transported by other ships for exports.

FACTORS FAVOURING DEV'T OF JAPANESE FISHING INDUSTRY.

PHYSICAL FACTORS.

- Japan is made up of over 3000 Islands including Kyushu, Shikoku, Hokkaido, Kurie Island and this has made the Japanese a traditionally Sea faring people.
- Broad Continental shelf of the North West pacific constituting the Sea of Japan, Sea of Philippine etc. with plenty of planktons that favors fish multiplication.
- Japan has along and indented Coastline with Numerous Bays and sheltered inlets extending for over 29750km that favour good site for dev't of fishing villages and ports such as Ise bay, Osaka bay etc.
- Shallows and the meeting of the warm Kuro Shio and cold Oyashio currents helps to produce ideal conditions for planktons growth hence, presences of abundant fish species.
- The warm Kuroshio currents that washes the Japanese coastline creates ice free conditions hence, facilitating fishing activities through out the year around Osaka, Ise bay etc.
- Japan is mountainous country with limited agricultural land. This has made fishing the possible source of protein food supplying 60% of animal protein in Japanese diet eg along Hokkaido, Shikoku Island etc.
- Japan has a successful forestry industry e.g., within the Honshu region. This has supplied a lot of timber for construction of fishing boats and fish packaging boxes.
- The relatively smooth sea floor along the Sea of Japan has facilitated use of both pelagic and demersal fishing method such as Trawlers, Drifters etc.
- Existence of a variety of fish species in the Sea of Japan such as Herring, Sardines, Cuttle fish, Shell fish, Salmon, Mackerel and Crustaceans including Lobsters and Crabs.
- The cool temperate climate of Japan not only favours existence of abundant fish species such as Cod, but also helps to preserve fish under natural conditions.

HUMAN FACTORS (SOCIO-ECONOMIC FACTORS)

- Large sum of capital in form of aid from USA the second world war was invested in fishing and other industries of Japan.
- Japan has a successful ship building industry at Honshu industrial region. The Japanese deep sea fishing vessels (fleets) are Equipped with- on board processing canneries. Fish caught e.g., Salmon, Tuna etc. are processed on spot.
- With a local population of over 128,085,000 populations (2004 figures), Japan has a big market for fish. The Japanese also love dieting on fish making the country one of leading fish importers in the world. Much is also exported to Korea, China, Philippine, Singapore.
- With a local population of 128,085,000 people; Most of which are educated. Japan has all forms of labour including fish farmers at Ise bay, fish breeders, fishermen, marketing agents etc.

- Intensive fish research is carried out in Tokyo, Nagoya, Osaka etc. involving fish breeding, restocking of the Sea of Japan, artificial fertilization of fish eggs, Introduction of non- indigenous fish species e.g., Carp, perch, trout, artificial pearl culture at Ise bay etc.
- Under the Nippon, Japan fishing cooperation and fishermen are exposed to foreign fishing groups in all the ocean. Japanese fleets carry out fishing as far as North-East Atlantic and pacific waters near Canada and USA, as well as the Atlantic waters of European countries in the North.
- Political stability and neutrality especially after the 2nd world war has tremendously favoured fishing activities around the Ise bay, Osaka bay and other inlets.
- Supportive gov't involving controlling fishing to allow fish restocking during certain periods specifically to allow fish multiplication, entering into agreements with other countries like USA, Norway, Morocco etc. to allow Japanese fleets fish in their territorial waters.
- Existence of efficient and modern transport network involving Electric railway network in fishing towns around Ise bay, Osaka bay. Modern roads facilitate transportation and distribution of fish products.
- Use of highly modern and efficient fishing methods such as trawlers, seine nets, Drifters in Japan, Bering and Philippine sea.
- Existence of hundreds of fish processing and refrigeration plants all over Japan e.g., at Osaka, Nagoya, Hokkaido etc. has facilitated dev't of fishing industry.

IMPORTANCE OF FISHING TO JAPANESE ECONOMY.

- Source of gov't revenue through taxation of fishing Corporations.
 - Source of foreign exchange through fish Export to USA, Korea, Germany etc.
 - Provides Employment to people in different categories e.g., those Engaged in pearl culture at Ise bay, Whaling, Fish processing at Osaka, Hokkaido etc.
 - Stimulated industrial growth involving fish processing, manufacturer of fish manure, Ship building at Honshu, Hokkaido, Osaka etc.
 - Have led to Urbanisation. Ports with modern handling facilities have grown up e.g., Osaka, Yokahama, Nagoya etc. These offers accommodation, trade and Health services .
 - Have led to resource Utilization e.g., Extraction of the forestry resource at Hokkaido and Kyushu Islands.
 - Have promoted international Cooperation b/n Japan and other Countries e.g., USA, Britain, Germany etc. which imports the Japanese fish.
 - Have led to Economic diversification against reliency on forestry, Tourism and the manufacturing sector at Hokkaido, Kyushu, Nagoya and Osaka.
- This leads to economic stability.
- Source of agricultural fertilizers. The inferior fish Species e.g., Menhaden and fish wastes are converted into fertilizers used at Ise bay and Osaka bay Horticultural farms.
 - Source of medicine e.g., Insulin and Cod liver oil used in the Manufacture of Margarine, Soaps etc.
 - Fish is the source of animal protein to over 60% of the Japanese population. This has improved people's health and diet.

- Have promoted tourism especially at Ise bay and Osaka bay. This has contributed to the foreign Exchange in-flow as well as international Co-operation with the source of tourists such as Netherland, USA etc.
- Have promoted dev't of Marine technology involving ship building , aqua water technology such as feeding Robots, Automatic feeders etc.
- Acquisition of skills involving deep sea diving, marine research and activities.
- Have promoted research and Education. It involves Introduction of new fish species .

NEGATIVE CONTRIBUTIONS/ IMPORTANCES.

- Competition within and with other countries like Norway, China etc. have led to price fluctuations.
- There has been pollution of the Sea of Japan, Arufura sea etc. due to oil spills from fishing fleets, fish processing factories at Osaka, Ise bay etc.
- Increases in the fishing costs have made fishing very expensive. This is because Japan operates fishing in all the ocean; Atlantic, Indian and pacific.
- Japan fleets have under taken over fishing, leading to depletion of certain fish species such as Cod, Salmon in the Sea of Japan; New found land etc.
- Encroachment of territorial waters of other countries has led to conflicts btn Japan , Russia, China, Korea and USA, creating political tension.
- Emergency of urban related problems like congestion, prostitution on fishing villages like Osaka, Nagoya etc.
- An increase in deforestation due to cutting of forests on Hokkaido Island to construct boats, packaging boxes etc. leading to climatic changes and atmospheric pollution.
- Increase in level of unemployment due to use of efficient fishing techniques such as trawlers, seine nets have begun to affect the people at Kyushu and Hokkaido Islands.
- Loss of live due to eating poorly prepared fish species e.g., about 50 people die per year in Japan after eating in correctly prepared puffer fish also known as maki-maki or deadly puffer fish that contains powerful nerve poison that can kill if consumed.
- Fishing is hazardous and have led to loss of many fishermen, drowning, bull shark and sea wasps (box felly fish), stone fish have killed fishermen.
- Piracy along the Japanese fishing grounds such as the Sea of Japan and Deepsea fishing grounds in foreign lands have led to thefts of fishing Equipment, revenues and threatens the life fishermen.

PROBLEMS FACING JAPANESE FISHING INDUSTRY.

- Restriction on Japanese fleets for example to the North, Vessels are not permitted to fish in the sea of Okhostsk, in the west, Rhee-line drawn by Koreans limits the Japanese fleets.
- Water pollution due to spills and wastes from fishing processing and other industries at Ise bay.
- Reduction on species of fish eg Cod, whales, salmon in the sea of Japan.
- Competition from other countries like China, USA, Denmark, Neitherland etc.
- Testing of atomic bombs and cruise missiles of USA, threatens the Japanese fleets .

-Piracy and theft in some fishing grounds such as South-East pacific, Indian ocean near Somalia etc. threatens the fishing industry.

-Inconveniences by transit ship along the fishing grounds especially in the North-West Atlantic fishing ground.

-Ferocious and poisonous fish species which have led to death of fishermen e.g., White and bull shark, sea wasps, Some Octopus species, poisonous stone fish, the tiny Candiru fish which can enter a fisherman's body and kill him.

FISHING IN VIETNAM

- Vietnam Fishing was severely depleted after Vietnam war when many fishermen fled the country.
- In 2004, Vietnam was ranked 10th leading exporter of fish earning US \$ 2.4 billion
- Fishing ground is North West Pacific Ocean waters with major fishing areas namely Gulf of Tonkin shared with China; Central Vietnam (South Mainland shelf); South Eastern Vietnam (Northern Sunda shelf) and Central Sunda (part of the gulf of Thailand) shared with Cambodia and Thailand.
- Major fishing ports are; Dong Hoi, Hai Phong, Ho Climinh, Vinh, Campha, Nha Trang etc.
- Vietnam has fairly long indented Coastline of 3260km and continental shelf area of over 700,000km with an Exclusive Economic Zone (EEZ) of more than 1million km².
- Major fish species are; Cod, Tuna, Squid, Mackerel, Sardines, Octopus etc.
- Fresh water fishing (inland fishing) is done in rivers such as Red river, Black river, Mekong delta; in canals and Rice fields. And major fish species caught are; Eels, Trout, Cat fish etc. Cat fish substitute African Nile perch on world market.
- Vietnam has more than 4000,000 hectares of Mangrove forests along Vietnam coast. These are source of timber etc.
- Vietnam has over 332 sea food processing plants at Ho chiminh, mytho, Thanh HOG, Nam etc. and over 100 fish processing plants export fish to European Union, Japan, Taiwan, USA etc.

FISHING IN KOREA (N & S KOREA)

- Korea does fishing in North-West pacific fishing grounds, in major fishing areas such as yellow sea, East China sea and Sea of Japan.
- Major fishing ports are; Bussan, Gunsan, Wonsan and Chongjin.
- Major fish species caught are; Mackerel, Sardines, Salmon, Cuttle fish, yellow tail, shell fish and Crusta ceans such as Lobsters, Oysters etc.
- Korea has also long indented Coastline with sheltered inlets favoring dev't of fishing ports and villages e.g., Bussan etc.
- Korea is divided into 2 parts i.e., South Korea with 48 million population and North Korea with 22 million population.
- Korea Coastline and Continental shelf is washed by warm Kuroshio currents creating ice free conditions that favor fishing activities.
- Korea has successful aqua-culture industry based upon intensive research at Pyongyang.

NB. Factors favouring fishing in Korea are similar to those of Japan.

FISHING IN SOUTH-EAST PACIFIC FISHING GROUNDS

NB. Major countries that carry out fishing in this region located in South America includes; Peru, Chile and Equator.

FISHING IN PERU

Peru is located in South America and is the leading fishing Nation in Tropical America .In 1960's ,Peru was the world's leading fishing Nation though production declined due to over fishing and emergency of superior fish species caught by other countries elsewhere in the world.

Peru carry out fishing in pacific ocean in south east pacific fishing grounds and the major fish species caught include; Anchovy , Bonito ,Rainbow trout ,sardines ,mackerel ,Tuna etc.

The bulk of the fish caught e.g. Anchovies; pilchards etc are not used for food protein but rather used in manufacture of fertilizers and fish oil.

Another activity of Peru fishing industry is collection of Guano (dropping of coastal birds) which feed on fish. Guano is used in manufacture of fertilizers i.e. its rich in minerals salts like potassium, phosphorus and nitrogen.

Peru has more than 50 fishing ports along its coast and major ones include; Arequipa, Atico etc.

There are over 100 fish processing plants in Peru employing a large number of people. The productions of fish oil and fish meal is largely controlled by Government Corporation called Pescaperu. Other industries in Peru produce glue, fertilizers, medicines (insulin) and Tuna oil.

FACTORS FAVOURING FISHING IN PERU.

PHYSICAL FACTORS

- The cool Peruvian current (Humboldt) along the Peruvian coast creates ideal conditions for growth of planktons which in turn has attracted abundant fish species like Anchovies, Tuna and Bonito.
- Existence of long coastline extending for over 300km from Tumbes in the North to Taona in the south provides big fishing baseline
- The indented coastline with sheltered inlets provides ideal site for development of fishing ports and villages such as Callao, Chimbote and Trujillo etc.
- Existence of millions of coastal birds whose droppings called Guano fertilizes the ocean floor leading to growth of planktons on which fish feeds upon.
- Existence of smooth sea floor along the Peruvian coastal waters offer opportunities for both pelagic and demersal fishing methods such as Trawlers, Fein nets etc.
- The mountainous nature of the western region in Peru (Andes Mtns) limits Agricultural potential hence making fishing an alternative Economic activity.
- Rivers e.g. Marañon, Ucayali etc deposits mineral salts along the Peru's coastal water. This has facilitated growth of planktons on which fish feeds.
- Existence of abundant fish species within the Peruvian fishing ground such as Anchovies, Bonito, mackerel and crustaceans. These are processed into fish foods (proteins), fish meal for animal fodder, fertilizers or fish oil at Chimbote and Callao fishing ports.
- Existence of off shore islands that offer temporary landing sites as well as aiding collection of Guano.
- The Peruvian forests along the Andes Mountains offered adequate timber requirements for construction of boats, packaging boxes as well as fuel wood for fish smoking at Callao, Chiclayo and Ica fishing ports.
- The cool temperate coastal climate with temperatures of 8-12°C along Callao, Chimbote etc favour fish preservation under natural conditions.
- Presence of fresh water fishing grounds e.g. L. Titicaca, R. Amazon, and R. Marañon etc favour fresh water fishing where the perch and carp are caught.

OTHER FACTORS (HUMAN OR SOCIAL, ECONOMIC FACTORS).

- Intensive research carried out at Callao, Chimbote involving restocking of fishing grounds with nourishing fish species like Tuna, Cod, and artificial fertilization of fish eggs.
- Supportive government policy e.g. production of fish oil, and fish meal is largely in hands of the Peru government corporation called Pescaperu. There is also controlled fishing to avoid fish depletion due to over fishing.
- Most of the Peru's population is concentrated along the coast. This has made the people to be with adequate knowledge of the sea thus carrying out fishing activities.
- Peru has local population of over 27,968,000 million people. To most of whom fish is major source of protein. Thus is a potential market for fish products while the rest is exported to USA, Japan etc.
- Peru is home to famous ancient civilisation, including the Inca empire. As a result; it has lots of both skilled and semi-skilled labour which operates the fishing industry.

- Existence of relatively developed transport network for distributing fish and fish products .it includes modern railways, roads that link fishing ports like railway Pucallpa, Navigable rivers e.g. Amazon ,Napo and L.Titica also favour fishing and its related activities .
- Peru has extended its territorial water to over 370km under EEZ's thus having a big proportion of space where fishing is done.
- Application of modern fishing technology such as GPS units, spotter air craft, under water cameras, fish attractants and baits ,boating electronics etc much of which is made by foreign companies such as Dong AL fishing industry Co.ltd, Bass pro fishing, Cabella fishing equipment ,Tekcast industries from China ,Japan and USA.
- Relative political stability has attracted foreign investors from Japan, USA etc to invest in the Peruvian fishing industry.
- Presence of many fish processing plants and refrigeration plants along coastal ports e.g. Callao, Chimbote etc has ensured no wastage of fish resources apart from fish food the rest are converted into fish oil fertilizers , cosmetics etc .processing factories includes ;Gananova exports , Health sea foods, commercial Dao Dos Ltd etc.

ROLE /CONTRIBUTION OF FISHING TO PERU'S ECONOMY. (SIMILAR TO THOSE IN JAPAN).

POSITIVE ROLES /CONTRIBUTIONS

- Generation of employment opportunities
- Source of government revenue through tax collection
- Source of foreign exchange through fish exports
- Dev't of towns/ports e.g. Callao.
- Enables acquisition of skills to fishermen.
- Has led to international cooperation with other countries like USA ,Japan etc
- Has promoted tourism
- Dev't of agricultural through provision of fertilizers
- Source of animal protein to people
- Source of medicine like insulin and fish oil
- Promote resource utilization like tropical forests for boat constructions

NEGATIVE ROLES / CONTRIBUTIONS

- Have promoted territorial conflicts with neighbouring countries like Chile and Equator.
- Pollution of water due to oil spills from fishing vessels and dumping wastes from coastal processing factories at Colloio
- Deforestation of forest resources for timber.
- Over fishing leading to fish depletion /reduction of fish species eg Anchovies ,competition and price fluctuation
- Emergence of urban related problems like congestion at callao, Chimbote etc
- Increased costs of fishing making it expensive.
- Increasing levels of unemployment due to use of modern fishing techniques.
- Fishing industry endangered Guano industry since birds can no longer find sufficient food in coastal waters.

PROBLEMS/CHALLENGES FACING THE PERU FISHING INDUSTRY.

- Peru has long coastline but limited continental shelf and where shall waters exist to favour fishing activities .the biggest portion is deep and hence dark. No sunlight to allow growth of planktons. Hence not viable for fishing activities.
- For long , the coastal ports of collao ,Chimbote, Inea etc affect visibility often resulting into accidents.

- Winds from across equator tend to bring warm waters southwards towards the coast of Peru. warm H₂O's spread over cool H₂O's of Peruvian current, resulting into migration /death of fish species.
- Competition with other countries like Japan, Norway, China and USA on world market for fish products.
- Invasion of foreign fishing vessels from Japan, Chile, Ecuador lead to conflict.
- Political instability since military coup de tant of the Early 1970's, the country has been facing political unrest.
- The Andes Mountains towards the coast creates transport problems for fish distributing trucks.
- Warm winds that blow from the Equator between December and March create fish preservation problems.
- Reduction in quantity of guano due to over exploitation has affected rate at which planktons grow, hence reduction in fish growth as well.
- Peru is endowed with limited edible fish species. Most of the fish caught are not suitable for human consumption because they are too small or oily. They are used for processing glue, fish meal, fertilizers and animal feeds.
- Climatic changes especially the effect of El Niño rains in Peru affect the process of fishing.

FISHING IN CHILE

Chile is one of the leading fish exporters in the world. In 2004; Chile was ranked 8th largest fish exporter in the world.

Chile is located along the south western Coast of South America and carries out fishing in the south east Pacific fishing grounds in Pacific Ocean for marine fishing and major fish species caught include; Anchovies, mackerel, Bonito, sardines, shellfish and crustaceans eg lobsters and crabs.

The chief fish leading ports are Temuco, Taka, Puerto Montt, Arica, Punta Arenas, Valdivia etc. Much of the fish caught is either small in size or oily and therefore it is used in manufacture of fishmeal, fish oil and agricultural fertilizers.

There is also collection of birds droppings called Guano which is rich in potassium, phosphorus and Nitrogen and therefore is used as fertilizers in agriculture sector.

FACTORS FAVOURING FISHING IN CHILE

- Chile has one of the longest coastlines in the world stretching from Arica in the north to Ushuaia in the south, this favours fishing activities.
- Existence of highly indented coastline with sheltered inlets and bays offers good sites for development of fishing ports, examples include Gulf of Corcovado, Gulf of Penas and Antofagasta etc.
- Chile has thousands of islands that offer opportunities for development of off shore landing sites eg of islands include; Isla de Chilo, Isla Wellington, Reina, etc.
- Andes mtns and Atacama desert (dry place) on earth lies in north west have limited agricultural opportunities hence forcing people to the sea for a livelihood.
- The tropical forests in the East and Chile provide timber requirements for boat construction, fish smoking, as well as packaging materials.
- The cool temperate climate and frozen glaciers in the southern regions like Punta Arenas, Ushuaia and Puerto Natales offers opportunities for fish preservation as well as favouring breeding of fish species like Tuna, Mackerel, and Herrings.
- Large quantities of Guano along the coast help to fertilize the sea-bed leading to growth of planktons in abundance. This in turn attracts a lot of fish in the areas to feed on the planktons.

- Existence of variety of commercial fish species such as Anchovies ,Bonito, Mackerel etc which are used in processing of fish meal, fish oil, fertilizers , glue, and other products . Others are high content of omega 3 oil.
- The cool Humboldt Current creates ideal conditions that favour growth of planktons as well as creating a suitable climatic atmosphere for existence and breeding of fish species like Anchovies.

OTHER FACTORS (HUMAN OR SOCIO –ECONOMIC FACTORS).

- Existence of better fish preservation storage/ methods eg canning , refrigerating scattered all over the fishing ports like Taka, Arica ,Antofagasta etc .
- Existence of hundreds of fish processing factories at Taka, Valdivia etc .These provide ready market for all the caught fish examples of factories include Ocean Eagle Peru sac at Lima, Ocean Pacific Enterprises, sea Eagle fish, Siam Canadian group limited etc. These export fish to all over the world.
- Modern transport network such as roads, railway that link fishing ports like Taica to market centres such as Santiago.
- Large sums of capital obtained from the local populations commercial bank of Chile as well as Multi-Fishing corporation have been invested in the fishing industry.
- Existence of all forms of labour, skilled and semi skilled. Skilled labour does fish marketing while semi skilled labour offer transporting fish services.
- Use of modern technology such as Trawlers, Drifters, Motor boats to catch fish and transport fish from Pacific Ocean. Small scale fishermen use shell fish extractors, surface long lines and seines.
- Intensive fish research done at Santiago, Valdivia, Arica etc involving fish breeding, restocking of depleted waters, artificial fertilization of fish eggs. Such research is carried out by International Association of Fish Inspectors(IAF). It's also concerned with sea food safety, acceptable quality and fish availability for sale.
- Efficient fish cooperatives that teach fish farmers modern fishing techniques, marketing of their fish, quality control and sea food safety etc. Fish cooperatives include, Fish guilds for small scale fishermen, Trade unions, Maritime Associations for large scale fishermen. In all, there are 300 cooperatives in Chile.
- With local population of 16,295,000 million people in Chile, there's both local and foreign market for Chilean fish. Fish is exported to USA, China and Japan.
- Favourable/ supportive government policy towards fishing. This includes giving tax holidays to infant fish processing factories, controlled fishing during certain periods to avoid over fishing etc.
- Relative political stability along major fishing ports like Arica, Valdivia etc allow fishing practices to take place.
- Existence of a large Exclusive Economic Zone(EEZ) of over 320km allow Chile to carry out fishing over a very large area.

FISHING IN THE SOUTH WEST ATLANTIC OCEAN WATERS (ARGENTINA)

Argentina is found in South America. Fishing is carried out though its significance is just of recent.

Being a country with some of the world's most fertile soils and rich pampas grassland perfect for grazing, Beef therefore is the king.

Argentines have comparatively little appetite for fish. Never the less fishing is carried out by Argentina and foreign International fleets from Russia, Japan, Korea, USA etc at a distance of over 200miles away from the Argentina coastline.

There's a great potential for development of fishing in Argentina. The country has a long coastline of 5000miles which are highly indented with several gulfs and bays perfect for development of sheltered fishing villages. Examples are Gulf of San Matias, Gulf of San Jorge etc.

The major fishing ports are Buenos Aires, Laplata, Puertosanta eriz, Mardel plata, Bahia Blanca, Peinsular Valdes etc.

The major fish species caught include, sole, Anchovy, Hake, shell fish shrimps, squid, mussels, oysters, sea weeds etc.

There's also collection of sea sponges which are used for bathing. Sea weeds collected are used for either consumption as a relishin soup or for feeding animals or for making glue, paints, iodine and cosmetics. Sea weeds are also exported to France, Japan. They are valuable fertilizers in the crop fields under intensive farming techniques.

Several rivers deposit mineral salts in the Atlantic Ocean leading to growth of planktons in abundant. Such rivers include, Saldo, Colorado, Chico, Santa Cruz etc.

Despite big population of 38,747,000 million people, local demand is not really big except during Easter period when people tend to abstain from beef. 80% of the fish caught is exported to USA and European countries like Germany, France, Italy etc.

Much fishing in Argentina is done and taken by Monstrous Hi-Tech ships of foreign international fleets belonging to Spain, Russia, Japan, Korea, and China etc. These ships are equipped with on Board processing factories and can be as long as 200 meters processing up to 50.000 tonnes of fish.

However Argentina chamber of fishing vessel Association controls fishing and have prohibited international fishing vessels up to a distance of 200miles off the coast.

So from 201 miles away from Argentina water, hovers a fleet of international fishing vessels whose light at night resembles a vast city. Over fishing by these foreign vessels is a big problem. Falk Land Island offers opportunities for deep sea landing especially to British foreign vessels.

FISHING IN INDIAN OCEAD

India is the major country that carries out fishing in this region. The other countries like China, Russia, Korea, Japan, USA, Spain etc also send their international fishing fleets in the same region.

Fish species caught includes, Hake, Anchovies, pilchards, shrimps, shell fish etc. Collection of sea sponges, sea weeds etc is also a major activity.

The chief ports of Indian includes, Mumbai (Bombay), Cochin, Panaji, Madras and Calcutta etc.

Major fishing areas are; Arabian sea, Bay of Bengal as well as in land fishing grounds and fish farming in lakes and rivers such as Ganges, R.Bhima, R.Mahanadi etc. Trout, Tilapia, Perch are some of the fresh water fish species caught.

Hundreds of islands such as Laccadive Island, Nicobar Islands etc offer safe landing sites far away from the coast.

Religious factors such e.g Hinduism which are against consumption of beef created great demand for fish.

Local population of 1,103,371,000 billion people is an enormous market for fish as well as labour for carrying out fishing activities.

Long and highly indented coastline offers a sheltered natural harbour for development of fishing villages and ports e.g gulf of kachch, gulf of khambhat, gulf of mannai

Other factors favouring the development of fishing includes; intensive research, political stability, modern technology, efficient transport, capital, supportive government policy, efficient fish cooperatives etc.

FISHING METHODS

1- DRIFTING METHOD

Drift nets hang vertically in the sea like tennis net. They are fitted with floats on the top and weight at the bottom to make the net hang vertically in water.

Drift nets are placed just a few metres below the water surface where the fish will swim into the net.

Such fish get entangled by their gills and are unable to move either back or forward because their heads are caught by their gills and their bodies are too big to get through.

The method is commonly used to catch pelagic type of fish species such as sardines, pilchards, Anchovies, mackerel and sprats.

NB; Each drift net measures 55 by 14 metres and as many as 90 nets from a number of vessels may be used to form a continuous curtain or net stretching for over 3km. Drift nets are used by powerful boats called drifters.

ILLUSTRATION OF DRIFTING NET.

2. TRAWLING METHOD

- This is a bag-shaped net whose mouth is kept open by otter-boards or head beams.
- The mouth has floats at the top and weights at the bottom and the net is made stronger at the cod end in which fish are caught .The net has small holes such that due to commotion, the trapped fish cannot escape out.
- The net is dragged along the sea-bed by a trawler (boat) for about 2hours at as low speed of about 5km per hour.
- When the skipper is satisfied that sufficient amount of fish has been trapped inside the net, the boat stops and the net hauled into the boat by either use of many people over 90 or by a powered winch.
- The method is most efficient to catch demersal type of fish species (fish that breeds /lives at the bottom of the sea) eg cod ,haddock, sole etc.
- The average length of trawl net is 46 metres hence requires large labour force or Hi-tech equipment .
- Often trawling involves use of ship with a length of over 200 metres equipped with Hi-tech equipment such as sonars, satellite operating equipment , on board cannaries (factories) refrigeration plants and constay in sea for three months without landing at any port
- Trawlers may send their catch a shore by craft that fly at high speed between ports and trawling ships or may operate in a fluet with a large factory ship that processes the fish caught .They are therefore used by Hi-tech countries such as U.S.A , japan,china,Norway etc.
- However the main problem with trawlers is that they cause alot of destruction catching all organism along their way including fish , frogs,snakes, weeds,etc another disadvantage with the method they are restricted to smooth sea floor otherwise rugged sea beds tear away trawl nets.

ILLUSTRATION OF TRAWLING MWTHOD (TRAWL NET).

3 PURSE-SEINING

- This is more like a trawl net with a narrow conical end with wings of nettings rather than otter boards
- The fish is directed into the net by the wings which are fastened to long ropes. The ropes are then drawn to a stationary ship, forcing the fish into the centre of the net.
- By closing the bottom with a draw string, the fish are prevented from escaping beneath the net and the seine is finally hauled on board
- Although most seine nets are used close to the surface they can, with some modification, as is the Danish seine be used for catching demersal fish as well eg cod, Haddock, Plaice etc.

ILLUSTRATION OF PURSE-SEINE NETS / METHOD.

4. LINING METHOD

- This is an old method used to catch demersal fish particularly in areas where the sea floor is rugged and therefore could damage trawl nets.
- It's also used to catch large fish such as Tuna, NB; there are 2 types of lining method ie hand line (Haul line) and long lining method (trawl-line)

(i). HANDLINE (HAULLINE) METHOD

- This consists of a string normally thrown into water and kept in position by colourful floats.
- It's drawn by an individual fisherman when the float shows that fish is hooked.
- It's most popular for sport fishing such as bass fishing, fly fishing, angling etc.
- Trout, Tuna, Sardines etc are some of the fish species caught

(ii) LONGLINING (TRAWL LINE)

- This consists of strong rope which may extend for over 2km
- On it may be attached 500-5000 bolted hooks a few meters apart from each other
- Its towed by small or large steam boats
- Fish are caught by hooks and then the rope is hauled into the boat with its catch, using a powered winch since they are heavy.
- The fish caught are unhooked and re-baiting with worms, squids, mussels, eels etc are done and a gale laid in the water.
- The method is used for deep sea fishing e.g. Cod, Plaice, Pake; Halibut etc are caught on Grand bank in North –West Atlantic waters.

ILLUSTRATION OF LONG LINING METHOD

5. TROLLING.

- This is used to catch anadromous fish like salmon and pelagic fish such as Tuna
- It consists of vessel marked with long poles that extend over its sides.
- To those poles are attached shining metal lures on which unbaited hooks are fixed.
- Metal lures made from shining material reflect light from water as it is being towed through the water at a moderate speed.
- The reflected light attracts the fish to the hooks. Fish is unhooked and set again to catch others.
- It's a cheap method because it requires no bait to be fixed on the hooks

ILLUSTRATION.

SAMPLE QUESTIONS

Qn. Account for the dev't of fishing in either China or India.

Approach;-Define fishing.

Choose a case study.

Identify fishing grounds in that country.

Identify chief fish ports.

Identify fish species caught.

Explain factors favoring fishing in the chosen country.

N.B. Avoid general points identify and explain the points with use of relevant examples, show the source and role played e.g. capital; explain source and form of capital and what capital is used for in promoting fishing.

Qn. To what extent has low level of technology limited the dev't of fishing industry in either Angola or Peru.

Approach ; Select case study ,define fishing ,identify fishing grounds, fish species caught; fish ports; explain how low level of technology has limited fishing ;show other factors ;evaluate the question by showing extent; lesser extent.

Qn. UNEB 2019 (a) with reference to either Angola or Morocco , explain the challenges facing marine fishing industry (15mks).

(b) What measures are being taken to improve fishing industry in the country chosen above (10mks).

Qn. UNEB 2017: Assess the contribution of fishing industry to the development of either Sweden or Angola (25mks).

Qn. (a) Distinguish between purse-seining and drafting marine fishing methods (10mks).

(b) Account for the development of fishing industry in Scandinavian region or Morocco (15mks).

