

## **S2 Geography North America**

### **You may need an atlas for good visualization**

#### **CALIFORNIA**

California is also known as the gold state of USA due to the gold rush in the 1970s. It is the third largest state after Alaska and Texas.

California is located on the Pacific Ocean to the West, Nevada to the East, Oregon and Arizona to the North and Mexico to the South. San Francisco is the largest city and administrative capital. Other cities include Los Angeles, San Diego, San Jose. California was sighted by Spanish navigator, Juan Rodriguez in 1542.

#### **Physical features of California / Relief of California.**

The relief of California is divided into three divisions:

- a) Coastal ranges: These rise from the sea level from the West towards the East. They consist of low fold mountain systems which run parallel to the coast. Average height is 2000masl
- b) Sierra Nevada Ranges: These are mountains that run North to South. They join with the coastal ranges in the South. They are between 2000 to 4500 asl
- c) Central valley: This lies between the coastal ranges and Sierra Nevada. The Valley is generally flat. Altitude is 200m asl. It is home to San Joaquin and Sacramento rivers. It is composed of material / silt eroded from Sierra Nevada ranges.

#### **Sketch map showing the relief of California**

#### **Climate**

The area mainly experiences Mediterranean climate eg cool wet winter and warm dry summers.

The North experiences rainfall while the South experiences low rainfall (Semi arid climate) because it lies in the rain shadow of the coastal ranges.

NB: Much of the rainfall is received in winter when there is no farming and there is no or very little rainfall in summer yet this is the period that is ideal for growing crops.

In the North part, rainfall is heavy yet it is a mountainous areas with a sparse population.

## **BAR AND LINE GRAPH SHOWING CLIMATE OF SAN DIEGO.**

### **VEGETATION**

California has a vegetation type i.e coniferous forest on the slopes of the Coastal Ranges and Sierra Nevada (West side of the wind wave while on the lee ward side of the Coastal ranges there is dry / semi desert vegetation (Cactus).

In the Central and imperial valley, the original vegetation is basically Savanah however, it has been cleared of agriculture.

### **Drainage**

California is drained by two large rivers namely, River Sacramento and River San Joaquin. The other River is River Colorado. Combined.

Lakes found in California include lake Tahoe, lake Owens, and lake salten sea.

### **Solis**

They vary from place to place ie the upper slopes of Sierra Nevada and Coastal Ranges have shallow infertile soils due to high rate of soil erosion while the soils in the central valley are fertile deriving their fertility from the from the alluvium deposits from the mountains.

### **Population distribution.**

The south dry part of the state is densely populated while the northern part is sparsely populated.

## **THE WATER TRANSFER SCHEME**

The central valley is the most habitable region in California however, it receives low and unreliable rainfall.

To satisfy the huge demand of industrialists, farmers and domestic users, California embarked on the water transfer scheme, this is because water was mostly needed in the south (Central valley) for different activities.

The Northern part receives more rainfall but its soils are infertile.

River San Joaquin is used for irrigation in the South but has a third of required water while River Sacramento has 2/3rds of the required water but only passes through 1.3<sup>rd</sup> of the land that can be irrigated.

Therefore the water transfer scheme was formed with the aim of transferring water from the North to the South through the following.

1. Construction of dams to hold water in the reservoirs e.g Sasta dams and Friant dam.
2. Canals were constructed to transfer water from reservoirs eg Delta Mandota Canal.
3. They also constructed aqueducts to help distribute water from the canals to the distant places eg Los Angels and Colorado aqueducts.

The first irrigation project in California were undertaken by individual farmers, this later developed into a community project which was later taken over by the central government to start the central valley water transfer scheme.

### **TYPES OF WATER TRANSFER SCHEMES.**

1. Central water transfer scheme: It lies below 200m of altitude. It lies between the coastal ranges and Sierra Nevada. It's the largest irrigation project in California and has two major dams ir Shasta dam on River Sacramento and the Frait dam on River San Joaquin. Its sometimes known as the Great valley. Major crops grown include; fruits fodder, vegetables and cereals.
2. Imperial Valley Water Transfer Scheme: it is located in the desert of Southern California. Water for irrigation is provided by River Colorado and it covers area of 320,000 hectares. Crops grown include; fruits, vegetables, flowers ( Market gardening) and also ranching and cotton growing is carried out.
3. Coachella Valley Water Transfer Scheme  
It is also located in the Southern California desert. Water for irrigation is from is river Colorado via the American Canal. It is used to produce vegetables on formerly unproductive land. It covers around 219,000 hectares.
4. Los Angeles Valley.

Benefits of the Water Transfer Scheme.

1. It enables calculations of crops through irrigation in the central valley and all vallies.
2. It has enabled provision of water for domestic use.

3. It has provided water for industrial use.

### **PROBLEM INVOLVED IN THE WATER TRANSFER SCHEME**

1. High costs incurred by the water project in transferring and supplying water for both irrigation and urban use.
2. Shortage of water especially during summer for irrigation and urban use due to high demand.
3. Silting of water reservoirs because water flowing into dams carries a lot of silt which slowly fills up the reservoirs making them shallow.
4. Salinity of water transferred by canals which is due to the high evaporation rates. This makes the soil contain a lot of salts making them infertile hence affecting crop production.
5. Sinking of land due to continuous pumping of underground water that interferes with the water table.
6. The water transfer scheme leads to blockage of breeding grounds of some types of fish like the salmon fish which breeds in fresh water.
7. A lot of money has been allocated to the water transfer scheme to transfer water to different parts of the state as a result some sectors of the state are affected.
8. Stiff competition for water between irrigation and industry plus domestic use. This is due to the fact that the amount isn't enough to satisfy demand.

### **SKETCH MAP SHOWING THE WATER TRANSFERS SCHEME**

### **AGRICULTURE IN CALIFORNIA ( IRRIGATION FARMING)**

Agriculture is an important activity in California and most of it is under irrigation. The state has about thirty three million acres (33,000,000) of farm land and ranches which makes it the largest irrigated land for nay state in North America.

Agriculture is mainly carried out in the Central, imperial and Coachella Vallies.

### **TYPES OF CROPS GROWN IN CALIFORNIA**

1. Fruits ie lemon, oranges, apples, grapes, pears etc.

2. Végétales eg onions, tomatoes, cabbages and carrots
3. Fodder crops eg hay and alfalfa
4. Cereals like rice, wheat, maize and barley.
5. Fibres eg cotton

## **TYPES OF FARMING**

In the Central Valley, there are various types of farmings

1. Market gardening
2. Mixed farming ie horticulture
3. Extensive farming
4. Ranching.

### **1. MARKETING GARDENING**

This is the growing of fruits, vegetables and flowers near urban centres or towns aiming at the market. Crops grown are usually of perishable nature.

### **Characteristics of market gardening / horticulture**

1. Involves growing of fruits, vegetables and flowers for sell
2. Irrigation is usually carried out for growth of crops
3. It is market oriented and this explains why it is located near urban centres.
4. It requires highly skilled labour
5. It involves use of scientific methods of farming such as use of fertilizers and other agricultural chemicals.
6. It is highly mechanized ie intensive use of machines.
7. Involves high levels of specialization and high capital investment in technology eg use of green houses and glass houses for crop growing
8. The produce is sold fresh.

## **CONDITIONS / FACTORS FAVOURING IRRIGATION FRAMING IN CALIFORNIA**

The climate of California favours irrigation that is the dry conditions with little or no rainfall.

The gentle slopping relief ensures irrigation because of easily flow of water by gravity.

Presence of numerous rivers which act as a source of water for irrigation like River Sacramento and River San Joaquin.

Presence of fertile soils which are deep and well drained hence favouring crop growing like fruit vegetables.

Presence of adequate capital to support irrigation. The capital is mainly got from the federal government and central valley projects to purchase equipment and maintaining irrigation projects.

Presence of highly skilled labour: The farmers are highly skilled in science and technology hence it is easy to use irrigation farming.

Presence of underground water which acts as reservoir that can be pumped out to supplement the water from streams and rivers.

Presence of a wide and ready market provided by people of California and USA at large to the highly priced food stuffs.

The sparse population provides large land for irrigation purpose eg in the central valley and Coachella valley.

## **PROBLEMS ARISING FROM THE CENTRAL VALLEY IRRIGATION SCHEME**

Excess evaporation due to irrigation has increased salinity of the soil in the Central valley making it infertile.

It has increased water borne diseases such as Bilharzia in the Central valley.

It has increased siltation in rivers like San Joaquin and Sacramento leading to destruction of aquatic life like fish.

It has led to over cultivation of the soil in the Central valley leading to soil exhaustion hence reducing soil fertility and productivity.

The intensive use of chemicals and fertilizers has led to water pollution in Rivers like San Joaquin and Sacramento thus health problems.

It has led to displacement of people where dams and water reservoirs are constructed.

## **FRUIT GROWING IN CALIFORNIA (CENTRAL VALLEY)**

Fruits grown include apples, peaches, pears, apples, straw berries, lemons, grapes, oranges.

### **FACTORS FAVOURING FRUIT GROWING IN THE CENTRAL VALLEY**

1. Presence of fertile alluvial soils which are deposited from the highland to the valley hence favouring fruit growing.
2. Availability of large volumes of water for irrigation supplied by the main rivers Sacramento, San Joaquin and Colorado.
3. The ideal sunny climate that favours the growth and ripening of fruit during the summer season.
4. The gentle relief of South and the low areas of the central region are relatively flat making it easy to carry out irrigation and mechanization of agriculture.
5. Presence of high levels of technology used in the construction of dams and also in processing of fruits has encouraged fruit growing.
6. Availability of adequate capital used to set up irrigation projects, presence of medicine, paying of workers has favoured fruit growing.
7. Presence of well developed transport routes eg roads, railway, air transport, to transport the agricultural produce from farms to market centres.
8. Availability of processing industries to process agricultural products into finished goods before being sold eg food processing industries.
9. Availability of storage facilities where fruits are kept before they are sold.

### **PROBLEMS FACED BY FRUIT GROWERS**

1. Pests and disease that destroy crops leading to losses for farmers.
2. Shortage of labour especially during harvesting time.
3. Price fluctuation especially during summer season when prices seem to fall due to increased output.
4. Silting of reservoirs and canals reduce on water volumes hence affecting irrigation.
5. The high irrigation costs make the production of agricultural products expensive.
6. During winter, there is frost which destroys the root crops and pods during the blossoming.
7. Water shortage in summer due to excessive evaporation.

### **STEPS TAKEN TO SOLVE THE ABOVE PROBLEMS**

Continuous irrigation to solve water shortage

Using chemicals and pesticides to solve problems of pests and diseases.

Hiring of holiday makers and migrant workers from Mexico.

Stiff competition solved by use of intensive cultivation techniques resulting in to high yields.

Continuous use of fertilizers to solve the problem of soil salinity.

### **CONTRIBUTION OF AGRICULTURE TO THE ECONOMY OF CALIFORNIA**

Generation of foreign exchange when agricultural product eg fruits, cotton are exported to other countries. Like Britain

It has provided employment opportunities to the people who work on farms eg harvesters.

It has led to development of agro based industries by providing raw materials to them eg wine making industries.

It has earned income to the farmers after selling agricultural produce hence improving their standards of living.

It has led to development of social infrastructure particularly roads meant to transport agricultural produce to market centres.

It has earned revenue for the government through taxes imposed on agricultural farmers and agro – based industries.

It has led to utilization of land that would have been left idle due to aridity.

### **INDUSTRIALIZATION IN CALIFORNIA**

Apart from agriculture, industrialization also plays an important role in the economic life of California. The different types of industries which include;

#### **1. Oil refining**

Based on the many oil fields found in Southern California. Oil refining has



- led to development of other associated industries those which rely on the by-products of oil to produce new products eg paint, synthetic fibres, plastic and soap.
2. Chemical and pharmaceutical industries  
Chemical industries are those that manufacture industrial chemicals and agricultural chemicals like fertilizers while pharmaceutical deal in human and veterinary drugs.
  3. Food processing industries  
Depend on agricultural produce to manufacture goods eg meat packing, canning, wine making etc.
  4. Textile industries  
Based on cotton growing in Southern California to produce clothes and garments.
  5. Printing and publishing industries  
Based on coniferous forest in the coastal ranges and Sierra Nevada to specialize in production of news papers, magazines etc.
  6. Manufacture of transport equipment
    - Automobile
    - Air craft manufacture
    - locomotives

## **FACTORS FAVOURING INDUSTRIALIZATION IN CALIFORNIA**

1. Presence of raw materials like wood products and agricultural products for agro based industries.
2. Availabilities of adequate capital provided by government and local investors to set up industries.
3. Presence of advanced technology used on oil refinery, vehicle assembling and space industry eg robots.
4. Presence of wide market for industrial processed good due to a high population in urban centres.
5. Presence of well developed transport network like roads, air fields, railway transport that facilitate transportation of manufactured products to market centres.
6. Presence of adequate power to run machines in industries tapped from rivers like sacramento, oil and coal is also used.
7. Presence of skilled and semi skilled labour provided by the local population and migrants from other countries eg Mexico.

8. California's coastal state with many good sheltered harbours like San Francisco and San Diego used in exportation of manufactured goods to other countries.

### **PROBLEMS FACED BY INDUSTRIAL SECTOR IN CALIFORNIA**

- Environmental pollution ie air, land and water from oil refineries and chemical industries.
- Shortage of skilled labour competed for by other sectors.
- Limited water supply due to its high demand from other sectors like agriculture
- Stiff competition from other industrialized nations in the world like China, Germany, Japan.
- Limited land for expansion due to poor relief and other economic activities ie steep slopes hindering expansion on either side.
- Price fluctuation of industrial products on the world market due ot over production causing losses to industrialists.

### **FILM INDUSTRY 9 HOLLY WOOD)**

Holly wood is a suburb of los Angels and it has been the film capital of the worls for the last 100 years.

Nearly, all chief cinemas and television campanies have their studio in Holly wood eg 20<sup>th</sup> Century Fox, Universal, Paramount, Disney etc. The film Industry was established in 1911 and a number of factors favoured its development.

### **FACTORS / CONDITIONS THAT HAVE FAVOURED DEVELOPMENT OF FILM INDUSTRY IN CALIFORNIA**

1. Presence of a beautiful scenery. The beautiful scenery such as a desert landscape, snow capped mountains, beaches used for filming and acting.
2. Presence of warm sunny dry climate in most times of the year which is conducive and encourages filming activates.
3. Presence of different vegetation types such as shrubs, forests and others which attract the film industry.
4. Availability of large and ready market with in USA, Europe, Asia and Africa for the film produced in California.
5. Availability of adequate capital to invest in the development of the film industry provided by studio companies like Warner Brothers.
6. Presence of improved technology used in the making of films eg the transformation from 2D to HD and SD.

7. California possesses other important structures suitable for film making eg improved transport network in organized cities.
8. Supportive government policy of California state and USA to allow large companies to invest in the film industry.

NB: Initially, the Eastern part of USA had the monopolistic control of the motion picture company, to escape this rigged control, many film producers moved from the East to California including those who established the great film in Hollywood.

#### PROBLEMS FACING THE FILM INDUSTRY.

1. Piracy which is the illegal copying down of movies.
2. High costs experienced during filming activities.
3. Accidents occur during filming some times leading to loss of life.
4. Stiff competition from other filming areas eg UK and China.
5. Time taken during filming and producing movies is quite long
6. Labour shortage due to competition from other industries like aerospace industry.
7. Enhancement on good filming areas by other sectors like agriculture.

#### MINING IN CALIFORNIA

Mining is the extraction of mineral resources from the earth's crust. Mining is among the major economic activities carried out in California and it depends on the existence of the following minerals, oil, coal, salt and asbestos etc.

#### **FACTORS FAVOURING THE DEVELOPEMNT OF MINING INDUSTRIES IN CLAIFORNIA**

1. Availability of large sums of capital for establishment of mining centres eg oil refineries and fields provided by the government and private investors.
2. Presence of high quality minerals that appear in large quantities eg oil and coal which makes mining profitable.
3. Availability of large market for the processed minerals both in USA and foreign countries.
4. Presence of skilled labour and high technology used in various mining methods like drilling, adit / shaft method.
5. Efficient transport and communication network that transport the minerals from mines to processing centres.

6. Availability of cheap power from various dams eg the Shasha Dam, Frait Dam, cheap hydro electric power used in mining centres. Coal and oil is also used as power.
7. The strategic location of California around the Pacific ocean gives it accessibility to its chief market of Japan and China.

### **IMPORTANCE OF MINING IN CALIFORNIA**

1. It has provided employment opportunities to the people
2. Diversified the economy which helps to solve economic problems like inflation.
3. It helps in development of infrastructure like roads, railway used in transportation of minerals.
4. It has led to urbanization ie growth of towns eg San Diego and Los Angeles.
5. It is a source of revenue to government through taxation of the mining companies.
6. It is a source of foreign exchange through exportation of related minerals
7. It has improved the countries working relations with other countries where minerals are exported.

### **PROBLEMS FACED BY MINING SECTOR**

1. Exhaustion of minerals due to over exploitation.
2. Stiff competition for skilled labour with other sectors eg industries
3. Price fluctuation of minerals on world market hence loses to miners.
4. Deforestation due to open cast mining which ends up destroying a lot of vegetation.
5. Diseases caused by pits created as result of open cast methods eg bilharzias.

### **SOLUTIONS**

1. Diversification of the economy to check on rural – urban migration
2. Wasteland can be reclaimed by filling the pits and leveling the heaps.
3. Treating of pits with chemicals to kill vectors which transmit diseases.

### **URBANIZATION IN CALIFORNIA CASE STUDY: LOS ANGELES**

1. The major factors for its growth is its location. It is located in a region of sunny dry climate which is responsible for film making industry, tourism, air space engineering, fruit growing and packing, textile etc.
2. Discovery of oil fields near the city which attracted oil refineries.
3. The city enjoyed large supply of cheap power produced on dams that have been established on River Colorado.
4. Los Angeles is within the reach of water from River Colorado used for domestic and industrial use.
5. Its strategic location at the Pacific Ocean has turned into an entry and exit point (port California).

### **FUCNTIONS OF LOS ANGELES**

1. Its a financial centre with many financial institutions eg banks, insurance companies etc.
2. It is an industrial centre with industries like oil refineries, film making industries, textile and space etc.
3. It is a residential area and at one point it had the 2<sup>nd</sup> largest population in USA of about 10 million people.
4. It is a commercial centre and trade centre with multi – million businesses.
5. It is a cultural and entertainment centre with museum, galleries, night clubs etc.

### **PROBLEMS FACING LOS ANGELES**

1. Shortage of land for expansion in several directions ie it is already extended to the steep mountain range and has greatly increased cost of building on the slopes.
2. Drainage water supply which makes it difficult to supply enough water to 10 million people living in the city however, there is a possibility to pump water from Pacific ocean but purifying its expensive.
3. Air pollution from various industries as they pollute the atmosphere
4. Traffic jam and parking problems due to lack of space.
5. Unbalanced industry. A half of the industrial works are in the air craft and space engineering industries while others prefer to deal in luxury trade leaving other sectors short of labour.

## **SAN FRANSISCO**

### **FACTORS FOR ITS GROWTH**

1. Its location at the Pacific Ocean made it an exit and entry point.
2. The growth of the central valley (Hinterland)
3. Building of the trans-continental roads and railways connecting the parts to other parts of USA increased trade in the areas.
4. Historical factors i.e. San Francisco was the first administrative centre of California.
5. Industries which include ship building and repair, engineering industries, electronic industries, transport equipment industries, food processing etc.

Qn: Compare New York City and San Francisco.

## **NEW ENGLAND REGION**

New England is a region located in North East of USA. It was the first part of North America to be settled in by immigrants from Europe especially from England thus the name of the New England.

It is joined by majorly two rivers namely River **Connecticut and River Merrimack**

New England is made up of six states and these include.

Connecticut

Rhode Island

Massachusetts

Vermont

Maine

New Hampshire

## **SKETCH MAP OF NEW ENGLAND SHOWING ITS CONTENTS**

Originally the region had difficult conditions almost everywhere which made life very hard and difficult to settlers.

Such conditions include

- a) Infertile stony soils that are not conducive for meaningful crop cultivation /agriculture.
  - b) The dense /thick forest that limited settlement and agriculture as well as transport networks.
  - c) Long harsh winter season that limited settlement and agriculture.
  - d) The hostile natives of the region e.g. Red Indians who killed the immigrants
- inspire of unproductive land, New England has minerals such as iron ore, coal and petroleum.

## **CONDITIONS THAT HAVE FAVOURED EAST DEVELOPMENT OF NEW ENGLAND**

- 1 Presence of large water reserves from the Atlantic Ocean for development of fishing industry, rivers Connecticut and **MerriMark** for HEP
2. Existence of natural harbours which act as fishing ports e.g. New Bedford, Bridge port.
3. It is blessed with large forest resources which have developed the lumbering and the ship building industry.
4. The soils which are generally infertile have been improved by adding fertilizers and manure hence supporting agriculture sector.
5. Presence of a large hardworking and skilled labour force from Europe which contributed to Establishment and development of industries
6. There is a lot of specialization in New England leading to production of high quality goods like watches and
7. Availability of improved well developed transport facilities based on water and road.

## **INDUSTRIES IN NEW ENGLAND**

The white settlers were people of great determination, innovation and skill

They thus had to make use of raw materials like forests, some mineral deposits like iron ore and coal, waterbodies, meat from wild animals to develop industries.

## **TRADITIONAL INDUSTRIES IN NEW ENGLAND**

Traditional industries in New England included timber processing/Lumbering, wood curving/Saw mills.

- b) Iron and steel industries
- c) Fish processing
- d) Textiles
- e) Printing and publishing
- f) Leather tanning
- g) Tobacco processing

From the same traditional industries, other industries grew up e.g.,

- i) Fish processing developed into ship building
- ii) Textiles and started importation from Southern states

## **NEW INDUSTRIES IN NEW ENGLAND**

Today, new industries have developed in New England and produced electrical and electronic machines, jewellery, firearms, transport equipment, air craft manufacturer, chemical industries, clocks and watches computers.

## **MAJOR INDUSTRIAL CENTRES/TOWNS IN NEW ENGLAND**

### **1. BOSTON**

This is found in Massachusetts which has industries like engineering, electronics, firearms, footwear, iron and steel, leather tanning.

### **2 .NEW 'BEDFORD**

It manufactures mainly electronic equipment, surgical and medical equipment footwear, textile, rubber goods.

### **3. HOLYOKE**

It produces electric machinery, pulp and papers, chemicals and textiles

### **4. BURLINGTON**

It produces mainly electrical equipment, textile, steel, wood items and pharmaceuticals.

## **SKETCH MAP OF NEW ENGLAND SHOWING INDUSTRIAL CENTRES**



## **FACTORS/CONDITIONS THAT LED TO A DECLINE OF TRADITIONAL INDUSTRIES IN NEW ENGLAND**

1. Exhaustion/**Depletion** of raw materials such as forest for the saw mill industries
2. Industrial owners moved elsewhere in other sectors in search of better conditions and higher profits for example fishing and tourism industries
3. The industrial building became too old and were therefore abandoned
4. Stiff competition from other industries producing similar goods such as wood products (wood curving industries in Canada)
5. The industrial machines used were of low level of technology and outdated therefore inefficient to produce high quality goods.
6. The low wages paid to workers who demanded higher wages always discouraged industrialists.

## **FACTORS/CONDITIONS THAT LED TO DEVELOPMENT OF INDUSTRIES IN NEW ENGLAND**

1. Production of high quality with high value demanded both locally and a broad
2. Availability of large sums of capital provided by immigrants especially those from UK.
3. Presence of abundant supply of water for use in industries as coolants especially from River Merrimack and river Connecticut
4. Strategic location of New England at the coast as well as presence of numerous ports made importation and exportation of both goods and raw materials easily.
5. Availability of increased market for industrial goods due to increase in population of New England in states such as Vermont and Massachusetts
6. The decline in farming had to be solved by establishment of industries for the people to get employed and earn a living.

7. Availability/development of improved transport network which stimulated the distribution of raw materials and finished goods by water, road and air.

### **PROBLEMS FACING NEW INDUSTRIES IN NEW ENGLAND**

1. Shortage of raw materials that limit production e.g. iron ore
2. High cost of paying and maintaining labour with in industrial sector
3. The presence of Application Mountains that hinder transportation communication of industrial goods
4. Traffic congestion along roads causing delays in distribution of goods to market centres.
5. Limited land for expansion of industries due to dense population.
6. Negative price Fluctuation on the world market discourages industrialization
7. Pollution of land, water and air from industrial fumes and wastes e.g. water pollution leads to death of marine life in RiverMerrimark.
8. Stiff completion of raw materials and industrial goods by other industrial countries and states for market e.g.Germany, France and California.
9. Urban related problems due to development of industrial towns that led to high crime rate, the fast and easy spread of diseases
10. Congestion along parts like Bostom, limits/delays importation and exportation of r/m and finished goods respectively.
11. High taxation by the government discourages the industrialist and industrial sector.

### **SOLUTIONS/STEPS BEING TAKEN TO SUSTAIN INDUSTRIES IN NEW ENGLAND**

1. Automation/use of machines in industrial sector to reduce problem of labour shortage.
2. Re-Location of industries to states like Maine where labour and other resources exist
3. Re-cycling/treatment of industrial wastes before disposal to reduce air, water and land pollution.
4. Diversifying of industrial products from the industries like fish processing, timber processing to electronic and air craft building.
5. Use of alternative raw materials **sawing** technology drivers,fying of power and energy sector/use of coal and natural gas.

6. Increased research in marketing to improve on quality of products to compete favorably on world market.

7. Importation of raw materials like iron ore so as to sustain the existing iron and steel industries.

## **AGRICULTURE IN NEW ENGLAND**

As much as New England is an industrialized region, agriculture takes place i.e.; I) Dairy farming, ii) crops like tobacco, cotton and potatoes, iii) fruits like oranges, apples and vegetables.

## **SKETCH MAP OF NEW ENGLAND SHOWING DISTRIBUTION OF AGRICULTURAL CROPS**

## **CONDITIONS /FACTORS FAVOURING AGRICULTURE IN NEW ENGLAND**

1. Presence of existence land for crop growing and farming
2. Presence of reliable moderate rainfall of about 1000mm per annum which encourage the growing of variety of crops like vegetables and **crop**.
3. Presence of warm sunny summers leading to the quick ripening crops like oranges.
4. Presence of well drained fertile soils which support the growing of crops like tobacco, potatoes and cotton.
5. Existence of gently sloping landscape /relief that favors the establishment of agriculture plantations / the use of machines like tractors for planting and harvesting thus development.
6. Availability of ready market both at home and abroad to purchase commodities such as milk and cheese from dairy farming.
7. Intensive research on modern and harsh climate resistant crops and quick growing and maturing crops.
8. Availability of skilled labour force to work in the agriculture sector veterinary doctors, harvesters etc.
9. Availability of adequate capital to invest in purchasing farm inputs, seeds, planting and harvesting machines etc.

## **PROBLEMS FACED BY FARMERS IN NEW ENGLAND.**

1. Pests and diseases which affect quality of crops and dairy products.

2. The rugged mountainous relief in North affects agricultural mechanization.
3. The harsh winter season which is very severe gives a short growing
4. Presence of infertile soils in large areas of New England that a suitable for agriculture.
5. Presence of the dense forest vegetation which is very difficult to clear thus increasing on the cost farming.
6. Negative price fluctuation on world market discourages farm
7. Stiff competition from other agricultural product producing countries Netherlands for dairy products.
8. Pollution of soil by excessive use of fertilizers lead to the crop yields and poor posture growth.

### **STEPS TAKEN TO IMPROVE AGRICULTURE IN NEW ENGLAND**

1. Spraying using pesticides and herbicides to control pests and diseases.
2. Use of fertilizers to improve on soil fertility and productivity
3. Use of green houses to control severe waters.
4. Use of soil conservation methods such as to leave the land under fallow and regain fertility.
5. Formation of co-operatives in order to obtain loans from financial institutions like banks, to solve the problem of limited capital.
6. Improvement on research development on first maturing crops and harsh winter/climatic resistant seeds.
7. Improving on storage facilities e.g. use of cold rooms, refrigerated trucks to transport perishable agricultural products.
8. Improvement on transport network by use of electrified railways, roads, airports to ease transportation of agricultural products to market centres.