MINISTRY Of EDUCATION

An Introduction to

HUMAN GEOGRAPHY

YEAR 11 & YEAR 12 STUDENTS

An Introduction to

HUMAN GEOGRAPHY

(for Year 11 and Year 12 students)

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OVERVIEW

The usual perception of Geography is the Geologic and Geomorphic attributes, processes and influences which depict Earth as a marvellous work of art. Blunt emphasis had been directed towards the so called guardians, users and dependents of the limited yet vital resources of this planet which serves as the basis of all life forms.

Experiences and instances through History have made Human Geography an interesting, eventful and now a vital part of the Study of the Earth. Human perspectives and actions have immense influences on almost all processes and cycles of the Planet. Such is its importance that human decisions and desires is now seemingly overcoming if not replacing the natural wonders of this world.

INTRODUCTION

Human Geography syllabus, as revised by the CDU of the Ministry of Education, looks at "*how people develop and use their environment: and what strategies and measures that is to be taken to promote sustainability". It also allows students to explore ways in which the government and other organizations help to promote conservation and sustainable development".*

In fact, the KLA outcome for geography is *"to explore and express relationships between people and events in relation to their culture, resources and environment and apply their knowledge and skills to become responsible and productive citizens".*

The intended Strand Outcome is *"to develop an understanding, recognize, demonstrate and examine the development of environment and its resources, its significance, drawbacks and how humans influence the environment in decision making and ways of conserving and preserving environment".*

This text aligns itself with this revised perspective and provides basic information and comprehensive knowledge for the benefit of Year 11 - 12 students. It also provides contextual references according to the prescribed theme countries in the syllabus.

Furthermore, the text also intends to promote a more positive perception towards humans approach for our home planet and its systems which allow it to exist. Hence, justifications, recommendations and mitigation measures are integral parts of this text.

Finally, this text must not limit the scope of the teaching- learning content, individual perspectives and opinions. However, it serves as a guideline and source of information to enhance worthwhile learning for Year 11 and 12 Geography students.

CHAPTER ONE

POPULATION AND SETTLEMENT

PART 1.1 POPULATION

Explain the nature of population, its characteristics and the effect of the changes to explain the socio-economic significance.

1.1.1 NATURE OF POPULATION

Population simply means the number of people in a particular area at a particular time. Population study and population monitoring has become a vital part of Modern Study of Life. Population has probably become the main issue of concern when we relate it to other major paradigms of Geography. As of common knowledge population in the l9th and now the 20th century has continued to change.

In majority of cases population has *increased* either slowly, moderately or intensively according to the nature of the causes of population increases. On the contrary it may decrease.

Demography is the study of human population, dynamics, distributions, structures and movements constantly changing in time, in space and at different levels in the population system.

It is important to note that the population number can never remain stagnant as every second there is a birth, death, emigration or immigration in any given area that will cause the changes in number, distribution and density.

Fig 1.1.1 a. **Major Causes of Population Increase**

Table 1.1.1 a. **Examples of the Major Causes of Population Increase**

Increase in birth	Decrease in Death	Increase in immigration	Decrease in emigration
Less Birth control measures	Advanced medical provision	Better investments opportunities	Use of modern tech. in development
Teenage Pregnancy	More peace agreements	Educational opportunities	Increase in salaries
Early marriages	More healthy lifestyles	Healthy environment	More incentives
Cultural/Religious beliefs	Better living standards	Increase in refugees	Diverse opportunities

Inversely, in extreme cases, population tends to decrease in some countries.

Fig 1.1.1 b. **Major Causes of Population Decrease**

Table 1.1.1 b. **Examples of the Major Causes of Population Decrease**

Increase in Death	Decrease in Birth	Increase in Emigration	Decrease in Immigration
Unhygienic living standards	Good population control measures	Work/Sports opportunities overseas	Less investment opportunities
Civil Wars/Conflicts	Increased Development	Political Instability	Less resources available
Spread of diseases	More employment opportunities	Unfavorable conditions	High crime rate
Famines/Disasters	Increase in cost of living; prices/fares/etc.	Less land space	Strict policies

Population change therefore occurs due to natural change and difference in migration types.

A simple equation that can be used is:

Population Change = Natural Change + Net migration
Or
Population Increase = (BR - DR) + (Immigration - Emigration)
(Given that BR is greater than DR or Immigration is greater than Emigration; or both)
Or
Population Decrease = (DR – BR) + (Emigration –Immigration)
(Given that DR is greater than BR or Emigration is greater than Immigration; or both)

Population increases at a faster rate in developing countries, whereas, developed countries tends to have **Zero Population Growth** (ie. BR is fairly the same as DR).

Another characteristic of population, which is of great concern today, is its ability to increase very rapidly. A significant proof of this is the **population explosion** of the late 1940's due to the baby boom, the sudden increase in the number of babies born, upon the return of the soldiers after World War`. There are many other *factors of population increase*, the core causes are:

- Increased Birth rate.
- Decreased Death rate.
- Increased Immigration.
- Decreased Migration.

(ie. The core *factors of population decrease* are the opposite of the above.)

- ***ACTIVITIES*** *z-* ***NOTES REVISION WRITTEN WORK– DISCUSS IN PAIRS***

1. ***With reference to specific theme countries, give specific examples of:***

   (i) instances causing population increase.

   (ii) instances causing population decrease.

2. ***Discuss why is it important to study population and settlement, especially in these modern times.***

1.1.2 CHARACTERISTICS OF POPULATION

As population changes, so does the **Population Distribution** (*the spread of population*) and **Population density** (*the number of people per unit area*) of an area or of a country as a whole. These two interdependent characteristics of population provide essential information for development planners and professional consultants in view of a country's socio-economic development. Some factors which causes changes in population distribution and population density are:

Fig 1.1.1 b. **Causes of changes in distribution and density**

NB: **Urbanization** has also greatly changed and will continue to change the two mentioned characteristics. The provisions and availability of services and opportunities has eventuated into *urban drift,* the influx of population into urban areas.

As population converges into urban areas, rural areas experience ***population implosion*** (the sudden decrease in population). Whereas in urban areas, along with urbanization, another important characteristic which occurs is ***population displosion*** (people of different ethnic groups living in the same neighborhood, or sharing the same interest or activities). Planning of urban areas to cater for the above facts would also change the population distribution and population density.

FACTORS AFFECTING CHANGE IN A POPULATION

Areas that are populated may have sparsely or densely population in them. The cause of their sparsely or densely population may be due to Physical or Human Factors.

FACTORS	DENSELY	SPARSELY
1. Physical	Flat lowland plain attractive to settlements eg Ganges Lowland ; Uttar Pradesh, Bihar, West Bengal. Plains of Sigatoka, Navua, Dreketi, Ba and Rewa Delta in Fiji	Rugged mountains where temperature and pressure is common in high altitude eg. Thar Desert in India & Himalayan mountains. Fiji's Nakauvadra, Seatura Korobasaga & Uluiqalau.
2. Climate	Area of reliable rainfall ie evenly distributed all throughout the year having no temperature extremes and a lengthy growing season where sunshine or snow is sufficient to attract tourists and areas with a monsoon climate eg. West Bengal, Bihar, Madhya Pradesh, Orissa, West Coast. For Fiji its Suva, Rewa Delta, Navua, SIgatoka.	Areas reciving very low annual rainfall (Thar Desert / Yasawas) Areas having long seasonal drought or unreliable, irregular rainfall (Deccan Plateau / Yasawa) Very cold areas with a short growing seasons eg.(Deccan Plateau/ Nadarivatu in Vitilevu's Highland)
3. Vegetation	Areas of grassland tend to have higher population desities than places with dense forest or desert eg. Rewa Plains , Navua Planins, Dreketi Plains, Ba) India's Ganges delta.	Areas of Tropical Rainforests example Wainibuka and Naitasiri Highlands. India's Jammu & Kashmir, Himaohal Pradesh, North of Uttar Pradesh (foot of the Himalayas), West Bengal, Orissa.
4. Soils	Deep humus filled soils and river deposited silts Ganges Delta in India, Rewa Delta, Sigatoka Plains	Frozen & thin soils of the mountains eg Thar Desert and Mt Nakauvadra; or severe soil problems eg Leaching calcification or badlands; Sigatoka Sanddunes
5. Water Supplies	High population in reliable water supply sources, where there is wealth & technology to build reservoirs and to provide clean water eg. Lautoka/ Suva City ; Sigatoka, Nadi Labasa, Ba and Rakiraki towns. India – New Delhi , Mumbai, Kolkata	Many areas lacking supply of clean fresh water because of insufficient irregular rainfall or lack of money eg Yasawa, Vanuavatu (Lau); India – Jammu & Kashmir ; Gujarat.
6. Resources	Areas having large mineral deposits eg Vatukoula; India – Mumbai, Bihari	Lack of minerals and easily obtainable sources of energy that rarely attract people or industry. Fiji- Lau Group India - Meghalaya

7. Political	Headquarters of Government Ministry, Seat of Government; NGOs Foreign Consuls; Ports of Entry (Sea & Air) Suva City, & Lautoka City; Mumbai & New Delhi, Vishakpatnam	State fails to invest sufficient money or encourage development either economically or soically eg. Fiji;s Macuata and Bua Province in Vanualevu; Jammu & Kashmir areas in India.
8. Economic	Regions with Intensive farming or industry can support large numbers of people on a small area of land; Fiji- Sigatoka Valleys; Navua Plains India- Ganges Lowlands	Areas with less developed subsistence economies usually need large areas of land to support few people. Fiji – Tailevu North India – Jammu & Kashmir.

- ***ACTIVITIES*** ***- RESEARCH - INTERNET***

Research on the factors which affect population in your theme countries. Briefly describe its significance or effects to the host country.

Compile a one page report.

1.1.3 POPULATION GRAPHS

A. Population Pyramid Graphs

A **population pyramid**, is also called an **age pyramid** or **age picture diagram**, it is a graphical illustration that shows the distribution of various age groups in a population (typically that of a country or region of the world), which forms the shape of a pyramid when the population is growing. It is also used to determine the overall age distribution of a population; an indication of the reproductive capabilities and likelihood of the continuation of a population. It typically consists of two back-to-back bar graphs, with the population plotted on the X-axis and age on the Y-axis, one showing the number of males and one showing females in a particular population in five-year age groups (also called cohorts). Males are conventionally shown on the left and females on the right, and they may be measured by raw number or as a percentage of the total population.

Population pyramids are often viewed as the most effective way to graphically depict the age and sex distribution of a population, partly because of the very clear image these pyramids present

A great deal of information about the population broken down by age and sex can be read from a population pyramid, and this can shed light on the extent of development and other aspects of the population. A population pyramid also tells how many people of each age range live in the area. There tends to be more females than males in the older age groups, due to females' longer life expectancy **(Source : en.wikipedia.org)**

Population pyramid, in brief, gives us the following information:

- The total percentage of females and males in a population.
- The total percentage of females or males per age interval.

Population pyramid with above-replacement TFR

http://search.tb.ask.com/search/AJimage.jhtml?searchfor=image+of+poulation pyramid

Pyramid A	Pyramid B
Typical of Developing Countries High Death Rate High Birth Rate Low Life Expectancy	Typical of Developed Countries Low Death Rate Lower Birth Rate Longer Life Expectancy

- The pyramid A shape (a feature of a developing country) which means:
  - Greater younger generation.
  - Higher dependency rate of the young generation.
  - Higher birth rate, greatly exceeding the death rate.
  - Increased population.
- The pyramid B - beehive shape (a feature of a developed country) which means:
  - Greater middle aged generation.
  - Higher number of people are working or earning for the population.
  - Decreased birth rate.
  - Close to Zero population growth (BR = DR).

The population pyramid consists of a horizontal axis which shows the percentage of females on the left of the centre and the percentage of males on the right of the centre. The vertical axis is divided into age intervals.

The information given by a population graph is essential for planners, consultants and analysts.

B. **Demographic Transition Model**

This population graph intends to show the demographic patterns through changes in time. The graph refers to four main time periods in history. Generally it gives us the following information:

- The change in Birth Rate through time.
- The change in Death Rate through time.
- The period where population increases.
- The period where population decreases.
- The periods of Zero population Growth.

The graph also helps us to infer the reasons for the above events in a particular time period.

Eg. Demographic Transition

Stage	1 High stationary	2 Early expanding	3 Late expanding	4 Low stationary	5 ? Declining?
Examples	A few remote groups	Egypt, Kenya, India	Brazil	USA, Japan France, UK	Germany
Birth rate	High	High	Falling	Low	Very low
Death rate	High	Falls rapidly	Falls more slowly	Low	Low
Natural increase	Stable or slow increase	Very rapid increase	Increase slows down	Stable or slow increase	Slow decrease
Reasons for changes in birth rate	Many children needed for farming. Many children die at an early age. Religious/social encouragement. No family planning.		Improved medical care and diet. Fewer children needed.	Family planning. Good health. Improving status of women. Later marriages.	
Reasons for changes in death rate	Disease, famine. Poor medical knowledge so many children die.	Improvements in medical care, water supply and sanitation. Fewer children die.		Good health care. Reliable food supply.	

http://search.tb.ask.com/search/AJimage.jhtml?searchfor=image+of+demographic transition

1.1.4 MIGRATION

Migration means the movement of people from one place to another (usually from one country to another). There are two main types of migration:

Fig. 1.1.5a Types of Migration

http://search.tb.ask.com/search/AJimage.jhtml?searchfor=image+of+migration

A. Voluntary

People either choose to migrate (voluntary). Under Voluntary Migration there are two sub-types of migration Internal and International Migration. They both have their sub-types of migration.

B. Compulsory

People are made to move involuntary (forced). Forced migration is a negative form of migration, often caused by persecution, development, or exploitation. There are International and Internal type of migration and each have their respective purpose for migration.

There are four main forms of internal migration. These are:

- Urban to urban migration.
- Rural to rural migration.
- Urban to rural migration.
- Rural to urban migration which is termed as 'Urban Drift'.

There are many reasons why people move and if they move within the country's boarders then it is referred to as **internal migration**. Some main causes for internal migration would be:

Urban to Urban	Rural to Rural	Urban to Rural	Rural to Urban
Better education	Expiry of leases	Retirement	Education
Work transfer	Better farmlands	Job layoff	Employment
Better housing	Marriage	Medical reasons	Better standards
Better opportunities	Rural transfer	More space	Bright lights

A. **External Migration**

The two main forms of external migration are:

- Immigration (migration into the country).
- Emigration (migration out of the country).

Pull and *push* factors contribute to internal and external migration, respectively.

Immigration		Emigration	
Pull into our country	***Push out of their country***	***Pull from other countries***	***Push out of our country***
Education	Less opportunities	Better employment	Less wages
Employment	Political Instability	Sports contract	High cost of living
Investment	Civil wars	Better standards	Low standards
Work contracts	Climate/Relief	Better opportunities	Less opportunities

All forms of migration have consequences which would either be beneficial or drastic to the losing country and the host country.

(a) The positive impacts to the losing country are:

- Decrease of population
- More space
- More opportunities
- Less competitions

(b) The negative impacts to the losing country:

- Less labour force
- Brain drain
- Less development

(c) The positive impacts of migration on the host country are:

- More labour force / Better expertise
- New ideas / New technology
- New developments / New investments

(d) The negative impacts to the host country are:

- Increase in population / Congestion / Overcrowding / Pollution
- Depletion of resources / Limitations in opportunities as there are more people
- Destruction of habitats / organisms / Decrease in land space due to development

B. **Internal Migration**

There are four main types:

- Rural to Urban (Urban Drift)
- Rural to Rural
- Urban to Rural
- Urban to Urban

- ***ACTIVITY - INTERNET RESEARCH – WORK IN PAIRS***

Each pair is to research on the factors contributing to the two different population graphs and compile brief notes, with specific examples. Compiled notes could be used as class share notes.

- ***ACTIVITY - ESSAY – WORK IN PAIRS***

With reference to specific case studies, discuss four main causes of migration and its impacts to the host country/area. Topics may be allocated to each pair according to the factor types (environmental, economic and social). Submitted essays could be used as model essays.

1.1.5 IMPACTS OF POPULATION CHANGE

There is a growing concern on the impacts of population increase. Not only is the population outgrowing our planet Earth, but man is destroying its planet earth through his activities and extraction of its resources. Although some believe that population growth is under control, it is having a negative effect on the environment by depleting Earths clean natural resources and wildlife. As human population will expand the damaging effects on the environment will multiply.

(a) Negative environmental impacts of population increase are:

- Pollution (air, water, noise and land)
- Depletion of resources (land and marine)
- Deforestation for settlements can deplete resources
- Destruction of habitats/organisms, through mining, development of infrastructures and burning are a few to name.
- Degradation of drinking , fishable, usable freshwater
- Increased competition for limited resources
- Over cropping and over grazing to meet food demands for the population can result in desertification.
- Loss of biodiversity which would result in simplification of biodiversity.
- Environmental Stress

(b) Negative economic impacts of population increase are:

- Poverty
- Inflation
- More government expenditure for development. It costs a lot of money for the government to provide social services and benefits. The higher the population, the higher the costs and sometimes the revenue is less than the budgets spent by the government.
- Reduce per capita income
- High unemployment
- Low human capital investment on each child (education and health services)
- High Trade deficit. - A country can only provide so much natural resources to sustain its people, when population is higher there is not enough natural resources and therefore a country must import instead of export which is unhealthy to the country's economy.
- Cost of living is higher- when land is limited in a country and population grows rapidly the cost of housing becomes expensive. Sometimes it is very difficult for people earning upper middle income to buy a decent home. Examples include Singapore and Honolulu.
- Economic Stagnation

(c) Negative social impacts of population increase are:

- Less space
- Limited opportunities
- Increased social problems
- Loss of identity/culture
- Higher Crime rates- Higher population can lead to more crime due to the effects of unemployment and a struggling economy.
- High maternal mortality
- Vigorous competition for limited jobs
- Socio-economic tensions
- Political instability
- High fertility rates
- Low standard of living
- less available quality housing, resulting in increased substandard housing and homelessness.
- Access to food and clean water can be another concern. The issues associated with unsanitary sources of food can sweep through an entire population, causing disease and famine.
- Starvation war and death can be an impact because of the completion for limited resources.

- ***ACTIVITY - INTERNET RESEARCH – WORK IN PAIRS***

Each pair is to research on the factors contributing to the two different population graphs and compile brief notes, with specific examples. Compiled notes could be used as class shares notes.

1.1.6 CLIMATE CHANGE AND ITS IMPACTS

Climate change has become a contemporary environmental issue of the modern era as it is now a major threat to our planet Earth. Its visible impacts are experienced in the small islands of the South Pacific. Not only does it affect men's activities, it has also contributed to mass population distribution.

In studying climate change and its impacts, it would be wise to first look at some of the human influences which have caused climate change.

Key indicators of climate change in the Pacific Islands region.
From: *Climate Change and Pacific Islands: Indicators and Impacts*, Pacific Islands Regional Climate Assessment, 2012

Source: Climate Change and Pacific Islands, Indicators and Impacts. Pacific Islands Regional Climate Assessment, 2012.

A. Human influences of Climate Change

(i) Air Pollution

Air pollution (the release of greenhouse gases in the atmosphere) has led to the destruction of the ozone layer, allowing more heat into our atmosphere which changes our climate. These greenhouse gases are caused by human activities such as burning, use of motor engines, etc. These gases deplete the ozone layer that filters the sun's radiation.
NB. Temperature is an element of climate. As temperature increases then the climate would also change.

(ii) Deforestation

Forests or plants take in carbon dioxide for photosynthesis. If there are less plants then there would be more carbon in the atmosphere which contributes to the effect mentioned in (i) above. Furthermore, forests also acts as a buffer for the coolness in the atmosphere. If the forest is removed then the atmospheric temperature would increase which causes climate change.

B. Changes experienced

(i) Temperature Increase

Temperature increases as more of the sun's rays pass through the ozone layer and also when the buffer (forest) is removed.

(ii) Changes in wind patterns

As temperature is increased then there would also be changes in wind patterns in areas affected.

(iii) Changes in precipitation

When temperature increases in certain areas, there would also be an increase in the amount of precipitation.

NB: If a climatic element is affected then climate would change.

C. Major negative impacts

(i) Rise in sea level

Rise in sea level contributes to coastal flooding; movement inland of the shoreline, submergence of small islands and eventually the relocation of islanders would ensue eg. The **environmental refugees,** who have bought islands in Fiji in Rabi for the Ocean Islanders from Kiribati and Kioa for the people from Tuvalu.

(ii) Droughts

Droughts in some areas causes destruction of vegetation/organisms, starvation to the human population in areas affected and a threat to food security. The whole climate change that would affect the area are the tropical regions would eventually become a desert and the mid latitudes would become a tropical region and the polar regions would have a mid latitude climate. This would result in the relocation of people and their settlements and the changes in people's activities.

(iii) Excessive rainfall

The high temperature would increase or intensify evaporation. This would cause high precipitation and also it can brew tropical cyclones, which could increase in frequency.

This eventuates into flooding of settlements and farming areas which again destroys habitats, vegetation, organisms and threatens food security

D. Simple Ways of minimizing its impacts

(i) Afforestation / Reforestation and sustainable conservation of forests.

Introduction of forests would mean the decrease of carbon levels in the atmosphere. It would also decrease the atmospheric temperature of the tropical/equatorial zone. It would change the microclimates of the areas reforested.

(ii) Minimise the burning of fossil fuels

The burning of fossil fuels could be decreased through the use of alternative energy (solar / wind / wave energy or hydrothermal)

(iii) Controlled logging

Logging cannot be stopped as wood products are for many of man's needs, however, measures could be adopted to control logging such as government policies and the use of alternative products to replace wood products.

(iv) Sustainable development

This infers development which protects and conserves the environment. Hence, there would be more consideration of the environment and less destruction of it.

The effect of climate change on population distribution are:

- The movement inland of coastal inhabitants which also changes population density.
- The migration of people due to changes in temperature.
- The movement of people to higher grounds due to flooding of low lying areas.
- The fleeing of people due to starvation and for food security.

- ***ACTIVITY - SPEECH - GROUP WORK***

Students are to be allocated into groups of threes. Each group is to write up a speech based on one impact of climate change. Each speech should not be more than five minutes long. Scripts are to be submitted for class resource.

1.1.7 POPULATION PROBLEMS

A major issue in the world today is the increasing number of population problems, especially in all developing countries. Through time the effects of these problems have proven to be disastrous to the human population and is threatening to destroy our planet earth.
The table below looks at some major population problems in our world today and they are classified under environmental, economic and social problems caused by population and population increase.

Location (Site and Situation)

- The location of a settlement is related to its site and situation.
- the site describes the point at which the town, village, city or hamlet is located.
- actors involved in choosing a site are: local relief, soil, water supply and resources.
- situation describes where the settlement is located in related to surrounding feature such as other settlements, mountains, rivers and communications. It's the situation of a settlement that will determine whether it will continue to grow or become a large town or city or remain as it is.
- Early settlements developed within a rural economy which aimed to be self sufficient. Their sites where determined by a series of mainly physical factors:

(a) A wet-point site - in dry areas water was essentially needed virtually everyday throughout the year and is heavy to carry any distance.

(b) A dry-point site - especially in relatively wet areas was needed to avoid flooding to be above waterlogged load.

(c) Building Materials - which ideally included stone, wood and clay had to be obtained locally they were heavy and bulky to move at a time when transport was poorly developed.

(d) Defence - against surrounding tribes was sometimes necessary.

(e) Fuel Supply - were needed from heating and cooking usually wood.

(f) Food Supplies - was needed from land nearby, some of which was suitable for the rearing of animals and growing of crops.

(g) Nodal Points - Where several valleys (natural routes) met to create a route centre, or where two rivers joined or which controlled routes between hills.

(h) Bridging Points - may originally have been at a ford (a shallow area in a river that can be crossed by car, horseback, etc.)

(i) Shelter and Aspects - to be sheltered from the strong prevailing south westerly and cold northerly wind to have a south facing aspect, giving most sunshine, heat and light.

Environment	Economic	Social
Pollution - Includes all the tree types of pollution	Poverty - Effect of misfits of globalisation	Starvation - An effect of food scarcity and overpopulation
Depletion of resources - Due to overexploitation and overconsumption	Inflation - Effect of global economic crisis & high quality demand	Congestion/Overcrowding - An effect of over-population with less land space.
Degradation of soil/vegetation - Excessive deforestation, overcultivation and overgrazing	Inc. Gov. Expenditure - In the provision and maintenance of services and infrastructure	Unemployment - More people with less employment opportunities
Destruction of animals/habitats - Clearing/ bulldozing on land for development.		Crime - Economically disadvantaged looking for opportunities

- ***ACTIVITY* - INTERNET/LIBRARY RESEARCH - GROUP WORK**

Students are to identify examples of the problems in specific theme countries. Each group is to display the concepts, ideas with examples on a vanguard sheet. This would be assessed and can be retained as a subject resource.

1.1.8 WAYS OF MINIMIZING PROBLEMS

As mentioned beforehand, population has continued to increase beyond control in the last century and onto this 21st century. Population problems increase proportionately with population increase; hence, the idea of solving all population problems seems impossible. However, these problems could be minimised. Outlined below are some possible ways of minimising population problems.

- **Population Control**
- Birth Control Methods
- Control immigration
- Awareness on population control

- **Food Security**
- Development of agricultural sector
- Promotion and provisions for agricultural projects
- Decrease tax on imports of food items.

- **Education opportunities**
- Fair educational opportunities for all levels
- Vocational programs in schools and within the community
- Investment opportunities
- for business ventures
- for livelihood projects
- provision of investment opportunities

- **Employment opportunities**
- in government / industries
- self-employment training programs
- provision of markets to the people and investors

- **Political Stability**

- **Social Security**

- **Economic Growth**

- ***ACTIVITY* - *INTERNET/LIBRARY RESEARCH* - *WORK IN PAIRS***

Students are to list down twelve problems from 1,1,7 and for each of these problems they are to identify the most probable solution which would minimize its effects. Each group is to display their research on a A3 paper. This would be assessed and can be retained as a subject resource.

1.1.9 SETTLEMENT – DEFINITION AND TYPES

Settlement refers to a place where people live. It can be small, large, permanent or temporary. Settlements are unique and have many characteristics as with other forms of tenements. It follows the basic tenet (principle or belief) of all establishments. It is where people live, interact and work. It varies in size appearance and function.

Settlements can be grouped together using a variety of criteria
:

- Location (site and situation)
- Shape (patterns)
- Major use (function)
- Position (rank)
- Service centre (hierarchy)

Types of Settlements

1. **Urban** - a densely populated settlement consisting of highly built up areas which provide a wide range of functions eg New Delhi, Mumbai Kolkata in India, or Suva City, Lautoka City in Fiji.

2. **Rural** - sparsely populated settlement consisting of few built up areas which provide a small range of functions eg Rural India Kerala village in south India or villages in Fiji.

3. **Hamlet** - a small settlement.

4. **Chawls** - originally the residential units build in the mill premises for workers in 1956, Government of *India*: areas where buildings are in any respect unfit for human habitation they are buildings in old city Mumbai.

5. **Bustis** - a district of a city marked by poverty and inferior living conditions, in India.

6. **Squatter Settlement** - A shanty town is a slum settlement of plywood, corrugated metal, sheets of plastic, and cardboard boxes. They are usually found on the periphery of cities, public parks, or near railroad tracks, rivers, lagoons or city trash dump sites.

10. **Self Help Housing** - under the project haven scheme the Hart foundation provides basic amenities of a cheap price, building materials. The scheme provides taps, toilet and electricity with roads to them eg. Qauia settlement, villages.

11. **Gated Community** - is a form of residential community or housing estate containing strictly controlled entrances for pedestrians, bicycles, and automobiles, and often characterized by a closed perimeter of walls and fences. Gated communities usually consist of small residential streets and include various shared amenities. For smaller communities this may be only a park or other common area. For larger communities, it may be possible for residents to stay within the community for most daily activities.

Others included:

7. **Low Cost Housings** - Affordable housing is housing that is appropriate for the needs of a range of very low to moderate income households and priced so that these households are also able to meet other basic living costs such as food,clothing, transport, medical care and education. As a rule of thumb, housing is usually considered affordable if it costs less than 30 percent of gross household income (found in Fiji)

8. **High Income Residential** - the inner city is the most prosperous part of the metropolis, where housing is expensive and where elites and high-income individuals dwell.

9. **Middle Income Residential** – sectors built close to towns and cities which were planned and occupied by people who have found full time employment eg. Samabula and Vatuwaqa (Suva).

Settlement Patterns and Models

The arrangement of buildings in a settlement, depending on the physical environment and the settlement functions.

1. **Dispersal Settlements** – are settlement patterns characterized by scattered and isolated dwellings eg canefields of Western Vitilevu and Vanualevu (Fiji) ; Rice fields of the Ganges Plains. It can either be isolated (individual buildings) or a group of 2 or 3 buildings and separated from the next group by 2 or 3 kilometres. This settlement occurs in an area of adverse physical difficulty where natural resources are insufficient to support more than a few people. Traditonally most are farms although increasingly some are being used as second homes for holidays.

2. **Linear -** a settlement pattern characterized by dwellings lined along a road, river or coastline eg.Levuka (Fiji) where buildings are stung out along a line of commu nication. This may be main road, a river valley or a canal or dyke also.

3. **Nucleated** - a settlement pattern characterized by clustered dwelling around a central point. Common in rural Fiji and India where buildings are central point. Common in rural Fiji and India where buildings are grouped closely together for economics, social and defensive purposes. When several buildings were grouped together, initially for defensive purposes and later for social and economic reasons. They often occur every 5-10 kilometers. It is also known as clustered settlement.

4. **Grand axis style** - is a planned settlement, designed or created form eg New Delhi.

5. **Fire wheel Style -** are planned settlement found in south India's Ashram City of Auroville.

source : www.google.com

6. **Cosmic City** - is a holy city paradigm eg Benares, Varanasi and Sriragnam in South India.

NB: Models

- Myrdalls (Circular and cumulative causation)
- Christallers (central place theory)
- Burgess (concentric zones)

1.1.10 PROBLEMS ASSOCIATED WITH SETTLEMENTS

Problems associated with settlements arose due to the mismanagement, poor decisions and irresponsible actions of man who developed and occupied these settlements.

Given below are certain problems associated with problems.

Environment	Economic	Social
Pollution	Cost of construction	Informal housing
Deforestation	Cost of infrastructures	Congestion/Overcrowding
Littering	Maintenance Costs	Conflicts/Social problems
Exploitation of resources	Rebuilding costs	Increased crime

1.1.11 WAYS TO MINIMIZE SETTLEMENT PROBLEMS

- **Employment opportunities**
- in government/industries
- self-employment training programs
- provision of markets to the people and investors

- **Provision of housing assistance**
- Rural/urban housing schemes
- Low interest housing loans
- Housing Agreements (eg. Shared costs between government and home owners, (2/3 of Gov. 1/3 Individual)
- Provision of housing materials

- **Community Policing**
- Community outreach
- Neighborhood watch scheme
- Community Crime-stoppers
- Police posts within the community
- Police patrol

- **Initiating Economic Growth**
- Provision of employment opportunities
- Promoting investments with lucrative markets (esp. Exports)

- **Decentralization**
- Distribute services so as to limit concentration of population
- Develop hinterlands and rural areas

- ***ACTIVITY* - INTERNET/LIBRARY RESEARCH - GROUP WORK**

Students are to identify examples of the problems in specific theme countries. Each group is to display the concepts, ideas with examples on a vanguard sheet. This would be assessed and can be retained as a subject resource.

- ***ACTIVITY* - WORK IN PAIRS**

Students are to list down twelve problems from 1,1,7 and for each of these problems they are to identify the most probable solution which would minimize its effects. Each group is to display their research on a A3 paper. This would be assessed and can be retained as a subject resource.

- ***ACTIVITY* - WORK INDIVIDUALLY**

Students are to identify different settlement patterns/ types and models. For each of these they are to research on the factors which have influenced it. Give specific examples from your theme countries.

CHAPTER TWO

TOURISM

Describe the historical trend of the tourism industry, its development and importance and evaluate challenges caused and faced by the industry whilst outlining the solution to the problems and acknowledge the industry's contribution to the country.

1.1.1 TOURISM AND TOURISTS

Tourism is simply an industry which caters or deals with tourists. There are many sectors which contribute to tourism being a fast earning industry and having multiple economic benefits to anycountry.

Hence, tourism not only brings about development but it also promotes diverse investment opportunities.

However, the success of the tourism industry depends on the effectiveness of its marketing and promotions which would bring about an increase in tourist arrivals. To date there are many types of tourism. Some common ones are: *Mass or Mainstream tourism, Leisure tourism, Historic tourism, Adventure tourism, Nature tourism, Cultural tourism*, etc.

Tourists travel for many reasons and their desires and needs tend to become more diverse through time. The ability for any country to cater for the needs and desires of the tourists would mean an increase in revenue earnings due to more tourists.

There are two main classes of tourists:

(i) *Destination Tourists*

(ii) *Stop-over Tourists*

Tourists can also be either *Domestic* (local) or *International* (from other countries).

To ensure a continuous in-flow of tourists, countries focus on target markets. Tourist markets can either be Short Haul markets (from nearby countries) or from Long Haul markets (countries which are further away). Some features which would be responsible for retaining the target markets are:

(i) Effective promotions and marketing

http://keeward.com/promoting-lebanese-tourism/#.VCI4TdFsLIU

Direct Promotions and Marketing

- through the use of mass media, social media, brochures, pamphlets, posters, promotional groups, documentaries, tourism festivals, etc.

https://www.google.com.fj/search?q=images+of+travel+agency&biw

Indirect Promotions and Marketing

- Through the use of travel agents, word by mouth, business meetings, organizational forum, international conventions, sports meets, etc.

(ii) Hospitality and appropriate provisions in host country

https://www.google.com.fj/search?q=images+of+travel+agency&biw

Accomodations

- Hotels, motels, tourist resorts, backpackers, capsule hotels, condominiums, apartments, holiday homes, home-stays, lodges, cottages

https://www.google.com.fj/search?q=images+of+tourism+

Water – based activities

- Canoeing, kayaking, sailing, surfing, waterskiing, jet skiing, yachting, snorkeling, free diving, etc.

https://www.google.com.fj/search?q=images+of+tourism+

Land - based activities

- Hiking. Mountain climbing, horse riding, camping, village visits, sporting activities, historical sight-seeing, sky diving, etc.

(iii) Political/civil stability of the country and easy visa requirements

(iv) Appropriate climate

(v) Diverse attraction sites

(vi) etc..

Furthermore, tourism has diversified in accordance with the differentiating needs and desires of the travelers or tourists. Initially, the tourist industry had focused only on those travelling and visiting places for pleasure and leisure. Nowadays, there are many different forms of tourism. Some common forms are:

Pleasure/ Recreation Cultural/ Historical Sports/ Business Holiday

Others include: Adventure tourism, Mass tourism, etc.

- ***<u>ACTIVITIES</u> - NOTES REVISION WRITTEN WORK– DISCUSS IN PAIRS***

1. ***With reference to specific theme countries, give examples of:***

   (iii) the sectors which make up the Tourism industry

   (iv) Short-Haul and Long-Haul markets.

   (v) different forms of tourism.

2. ***Differentiate between the types of tourists.***

3. **Differentiate between the types of tourism.**

1.1.2 A HISTORICAL PERSPECTIVE

Tourism in all countries in the world today originates and develops in many ways and for many reasons. In some countries, tourism began because of its natural beauty and/or beautiful climate, historical events which occurred with existing historical evidence, or due to its ability to meet the immediate desires of travelers. Moreover, some countries were trading points, stop-over destinations for travelers and refueling stations. The convergence of people meant the provision of services and goods to meet their needs.

Wherever there is tourism there would be development. These two features are interrelated, interdependent and correlate with each other. Tourism developed when the number of tourists increased leading to an increase in provisions for their diverse needs and desires.

Furthermore, as tourism developed investors also initiated other forms of tourism to cater for the demands of the travelers. Due to the many physical, historical and cultural attributes of each nation in the world, tourism has diversified into the many forms that are functional in present times. Locals have also promoted many other hidden potential within their locality which are tourist attractions today or will become potential attraction sites upon further development or restructuring.

Tourism has prospered in all countries as it has generated high returns for the host country and also due to its multiplying effects which has boosted the socio-economic status of these nations. In addition, its ability to influence westernization and modernization makes it more acceptable and adoptable without much resistance from the people. In some cases the tourism industry has become the backbone for the host country.

- ***ACTIVITIES* - RESEARCH - INTERNET**

Research on the historical background of your theme countries. Briefly describe how it has originated and its significance to the host country.

Compile a one page report.

1.1.3 REASONS FOR TRAVEL

As stated earlier, tourists travel for many reasons. The reasons to travel depend entirely on the needs, commitments and desires of the tourist. Some common reasons are:

- leisure/pleasure - visit historic sites
- sight-seeing natural wonders/sites - religious pilgrims
- visit special sites (e.g. Disneyland) - visit families/friends
- visit major cities/countries - special activities (e.g. hiking)
- etc.

Tourist choices depend on accessibility, availability and affordability.

- ***ACTIVITIES* - CHARTWORK – USE OF MASS MEDIA**

Paste pictures of people travelling for a reason, on a vanguard sheet. Label each picture carefully.

1.1.4 THE TYPES OF TOURISM DEVELOPMENT

Tourism is composed of a close network of multiple systems integrating mutually and as earlier stated, tourism is interdependent and interrelated with essential sectors in a nation. To develop tourism means to upgrade or improve on these multiple systems and sectors. Hence, it would be ideal to classify the types of development into categories composed of systems and sectors.

Category 1 – Promotion and Transport

https://www.google.com/search?q=importance+of+tourism+industry

(i) Marketing Strategies

Marketing has become more efficient with the introduction and use of modern technology and ideas. Eg, advanced forms of mass media, internet, skype, etc. The availability of various forms of communication makes it more possible to reach a wide range of markets. The disadvantage of using communication networks for marketing is that information is limited. Hence, other forms of marketing and promotions are through tourism festivals, cultural/art exhibitions and the use of promotional groups, in addition to travel agents. In these cases, marketing is more realistic, more informative and more attractive.

(ii) Packaging

More compact package deals are now available with affordable or lucrative prices. Eg. Family deals, business convention deals, company deals, etc. To make it more attractive, packages include incentives of various forms which include the integration of activities.

(iii) Inward/Outward Transport Mode

Transport modes are designed to be more efficient, safer, faster and much more convenient. Eg. Airliners – Boeings. Cruise Liners, Tourist trains. Etc. Transportation costs are usually inclusive to package deals. In other instances, costs are negotiated to meet affordability and to ensure that transport companies are able to meet their costs.

Category 2 – Reception and Accommodation

https://www.google.com/search?q=importance+of+tourism+industry

(i) **Airport/Port Facilities**

Modern airport and port facilities have been designed or re-designed to be more spacious and ensure more efficient services for international and domestic flights and passengers. It has also been developed to cater for all necessary services. Eg. Transport bays, passenger lounges/gates, check-in/check –out terminals, hangars, customs office, banks/money exchange, rental services, etc. New technology and ideas have also given them a more modernized outlook and in accordance with safety requirements.

(ii) **Accommodation**

Types of accommodation now range from simple inns for the ordinary people to the more exquisite and luxurious suites. Other forms of accommodation include motels, backpackers, home-stays, etc. Island states also boast attractive island resorts which have a blend of exotic features and local inputs. Modern forms of accommodation also include pools, spas, salons, ecumenist, etc. Social activities would encompass nightclubs, restaurants, bars, sports facilities, gyms and basic water-based and land-based activities.

Category 3 – Activities and Services

(i) Activities

To accommodate for the diverse desires and interests of tourists, different varieties of land-based and water-based activities have been introduced. These activities are created to utilize the immense environmental potentials whilst also inducing excitement, satisfaction and making it a memorable exercise. The activities available have ventured on from pleasure and leisure to adventurous, educational and informative.

(ii) Services

An essential component for customer satisfaction is quality assurance in services, provisions and products. The development of services in tourism is certainly progressing towards this scenario. ie.

Category 4 – Awareness and Acceptance

An important factor in tourism development, especially in development countries is awareness and acceptance modes. ie.

- Tourism awareness programs and tours to the community
- Eg. Ministry of Tourism Workshops, village tours, volunteers schemes, etc.
- Educational programs and courses in tourism Eg. Year 12 Geography – Theme on Tourism, Certificate/Diploma/Degree Courses in School of Tourism in tertiary institutions.
- Educational institutions for tourism Eg. Catering Schools,

- ***ACTIVITY - RESOURCE BOOK – INDIVIDUAL ACTIVITY***

Each individual is to compile a small resource book on tourism development in a specific theme country. The resource book should consist of the topics, pictures and short notes.

1.1.5 FACTORS AFFECTING TOURISM DEVELOPMENT

There are many factors that act as barriers to tourism development or we may say the problems faced by the tourism industry. Some common factors are:

Environmental	Economic	Social
Lack of resources - Land space/water source/food security	Increased fuel price - Due to change in world oil price	Political/Civil instability - Coup, civil wars, racial conflicts
Climate change - Inc./drop in temperature, high/ low rainfall, change in pressure	Maintenance/Rebuilding cost - Increase in cost of goods and material	Strict government policies - Immigration policies and taxation policies
Natural Hazards - Destruction of accommodation and attraction sites	Inflation - High prices of local and imported goods	Harassment of tourists - Robbery, assault and pestering
Land degradation - Destruction of vegetation and habitats	High Investment costs & less returns - Decrease in tourist arrivals	Land ownership demands - Goodwill payments, land and sea- shore usage.

- ***ACTIVITY - INTERNET RESEARCH – WORK IN PAIRS***

Each pair is to research on the factors affecting tourism development and compile brief notes on factors allocated, with specific examples. Compiled notes could be used as class shares notes.

- ***ACTIVITY - ESSAY – WORK IN PAIRS***

With reference to specific case studies, discuss four factors which affect tourism and its impacts to the tourism industry. Topics may be allocated to each pair according to the factor types (environmental, economic and social). Submitted essays could be used as model essays.

1.1.6 THE IMPORTANCE OF THE TOURISM INDUSTRY

1. *Fast and high revenue earner; and Favorable Balance of Payments*

Tourism has become the main income earner for countries where the tourism industry is prominent. Unlike other industries in a country, tourism does not need to wait for maturity, a harvesting period, or a manufacturing system. But through effective and objective promotions and marketing a tourist market could become operational immediately. As promotions intensifies the markets size and types increases, which means more economic gains for the country. Strategic promotions would also mean a continuous in-flow of tourists. This would serve well for the economic demands of a country and also it would the best alternative in cases of downfalls or downturns in other sectors in the host country.

Note: Exports are valued fob (free on board – the value of goods at New Zealand ports before export) and include re-exports.

Source: Statistics New Zealand

2. *Multiplier Effect*

This simply implies that tourism expenses have many benefits to the community and especially to the people. Money earned by the Tourism Industry would:

- Develop the industry and its mechanisms.
- Promote more tourism investments.
- Promote investments in other sectors and its expansion.
- Fulfill our social and cultural obligations.
- Etc.

https://www.google.com/search?q=importance+of+tourism+industry

3. ***Promotes Development***

Development is a pre-phase, in-phase and post phase requirement for all tourism investments. This is to fulfill the objectives and needs of the investment, its stakeholders and relative sectors. Not only is it initiated or derived for the tourists but also for the welfare of all stakeholders in the industry.ie. for tourists, the investors, the workers, the suppliers, the landowners and the community as a whole.

https://www.google.com/search?q=importance+of+tourism+industry

4. *Source of employment/livelihood*

Investments are doorways to career opportunities and probable livelihoods. All modern governments are always promoting tourism as it alleviates the country's economy through provisions of employment and hence a stable source of income.

5. *Promotes investments*

The successful daily operations of the tourism industry depends mainly on the availability and efficiency of supporting investments.eg. food supply, material suppliers, equipment suppliers, etc. These investments themselves are also essentially dependent on other supports. Modern technology and modern ideas have increased the probability of initiating investments in the tourism industry.

https://www.google.com/search?q=importance+of+tourism+industry

- ***<u>ACTIVITY</u> - ROLE PLAY - GROUPWORK***

Students are to be allocated into groups of fives. Each group is to enact a role-play based on one importance of tourism. Each role-play should not be more than five minutes long. Scripts are to be submitted for class resource.

1.1.7 PROBLEMS CAUSED BY THE TOURISM INDUSTRY

Tourism may be an integral part in a country's economic growth in the bid for economic prosperity and development; however, its negative impacts and influences are extremely drastic. Not only does it threaten nature and its essential processes, it also challenges human lifestyles, livelihood and their identity. The following are amongst the many negative impacts of tourism.

Eg. **Negative Effects**

A. Environmental Effects

To allow for structural development, there would be deforestation and bulldozing of land to enable constructions to take place. This infers the loss of vegetation, destruction of habitats/ organisms, disruptions of natural cycles, and loss of biodiversity. Some important natural cycles that would be disrupted include food cycles, nutrient cycles and even the interaction of climatic elements. A worrying effect is the imminent depletion of resources due to development but largely due to increased consumption and usage of the limited available resources. Another great concern is the effect of pollution (air, water, and land) which has also contributed to the negative effects mentioned above. Indirectly, as the tourism industry becomes prominent in most countries and has continued to develop, it could be identified to be a major contributor to ecological and climatic changes.

https://www.google.com/search?q=problems

Economic Effects

Up to date, there has continued to be a rise in foreign investments especially in developing countries. This has led to increase of leakage of funds out of host countries. In addition, most modern forms of accommodation are based on exotic architecture and designs of which would mean the importing of necessary materials. The same goes with the import of foreign food and products for local restaurants and bars to please the foreigners and so on. The other main concern is that in the strive for excellence in terms of quantity and quality on products, the cost of goods have soared well above the budget allocations of a local shopper. The local consumers are now choice less but to avert to the cheap and less healthy products. Furthermore, the tourist industry depends entirely on the number of tourist arrivals. The increase in tourist arrivals would boost the tourism industry whereas the opposite would result in an economic downturn ending up in loss of jobs and livelihoods. Seasonal changes in number of tourist arrivals would mean seasonal employment for workers.

ttps://www.google.com/search?q=importance+of+tourism+industry

B. Social Effects

The progress towards achieving a higher level of economic development through the tourism industry would result in the influx of western ideas and values or the high influence of westernization. The strong influence which has a high appeal for the modern generation has caused the loss of authentic culture, traditional values and custom, and eventually the identity of the indigenous people. A flaw of westernization is that it has many problems that we may say are consequences of misconceptions of its ideas and values. These are referred to generally as social problems. Some social problems created by the tourism industry include prostitution, drugs trafficking and use, illegal gambling, over-commercialization of cultures, robberies and assault, etc.

https://www.google.com/search?q=drug+trafficking

- ***<u>ACTIVITY</u> - INTERNET/LIBRARY RESEARCH - GROUP WORK***

Students are to identify examples of the problems in specific theme countries. Each group is to display the concepts, ideas with examples on a vanguard sheet. This would be assessed and can be retained as a subject resource.

1.1.8 WAYS AND MEANS OF MINIMIZING THE PROBLEMS

- Eco-tourism

https://www.google.com/search?q=kula+eco+park https://sites.google.com/site/theislandsoffij https://www.google.com/search?q=Australian

- Revive authentic culture

https://www.google.com/search?q=images+of+authentic+culture+in+fiji

- Sustainable tourism

https://www.google.com/search?q=images+of+sustainable+tourism+infiji

- Proper government planning and policing

https://www.google.com/search?q=images+of+proper+government+planning+and+policies+for+tourism

- ***<u>ACTIVITY</u> - INTERNET/LIBRARY RESEARCH - GROUP WORK***

Students are to identify examples of the problems in specific theme countries. Each group is to display the concepts, ideas with examples on a vanguard sheet. This would be assessed and can be retained as a subject resource.

1.1.9 <u>CONTEMPORARY ISSUES IN TOURISM</u>

(i) Climate Change

- Means drop in tourist arrivals
- High expenditure in reconstruction, rebuilding and relocation
- High maintenance costs
- Depletion of resources
- Destructions or disturbances of attraction sites

(ii) Landowning Rights/Territorial Sea Rights (Qoliqoli Rights)

- Payments of goodwill
- High leases
- Honoring of other agreements in the contract signed
- Disagreements with landowners
- Demands of landowners

(iii) Loss of authentic culture and identity

- Influence of western cultures
- Demands of the modern age
- Lack of authentic traditional knowledge
- Less elder generation
- No proper recordings or system of preservation of cultures.

1.1.10 THE FUTURE OF THE TOURISM INDUSTRY

A. Controlled tourism

There is a need to control Tourism in view of the immense development that comes with it. That is, very simply to conserve and preserve our environment.

B. Appropriate and applicable technology use

There is a need to use modern technology to promote "Eco-tourism". That is, to promote tourism whilst conserving our environment – eco-friendly landscape and development. High technology is also used to meet the high demands of tourists of the 21st century.

C. Conservation of our environment

In view of all the problems that we are facing in the world today, future planners and developers should be more mindful of the conservation of our environment.

- ***ACTIVITY - RESEARCH - GROUP WORK***

Students are to visit local tourism departments and orgaisations and gather information on contemporary issues in tourism and possible plans for the future of tourism. Each group is to compile a report. This would be assessed and can be retained as a subject resource

CHAPTER THREE

AGRICULTURE AND FOOD SUPPLY

SUB – STRANDS:

- *Discuss the significance of the agricultures sector in providing food supply and source of income and analyze its importance in food security.*
- *Study the factors affecting agricultural systems and practices and how it influences environment protection.*
- *Evaluate the importance of selecting sustainable agricultural practices in order to have a secured food supply.*

1.1.1 DEFINITION AND TYPES OF AGRICULTURE

Agriculture in layman's terms means the cultivation of plants and animals for human use and purposes. According to the Oxford Dictionary, agriculture means "the science and practice of cultivating for food and keeping or breeding animals for food". This infers that there are many ideas and practices in agriculture, which will be discussed further in this chapter.

Man's socio-economic problems continue to increase every day. That is:

- Increase in population
- Depletion or limitation of food resources
- Increased poverty
- Exploitation of resources for economic growth
- Economic competitiveness
- Etc.

The focus is on agriculture as the solution to most, if not all, of these problems. On the mention of the term agriculture, the simple mind tends to focus only the planting vegetables and crops. However, agriculture today would be linked to almost everything that we call food. Hence, more funds, technical assistance and scientific research are now channeled towards agriculture to ensure food security and also if possible to alleviate poverty and progress towards economic prosperity.

Thus, there would be a need to achieve the following:

- Use of modern technical assistance to increase agricultural production – quantity.

The use of machines and computerization has contributed greatly to mass production of agricultural products such as to cater for the increasing population and bring about food security and economic growth for the people and the country as a whole.

https://www.google.com.fj/url?sa=i&rct=j&q=&esrc=s&source=image

- Use of agricultural science technology to improve yields or products – quality.

The introduction of scientific technology has has had great influence in modifying agricultural products to the perfect state which meets the demands of the consumers. This is essential to retain your market.

https://www.sp.int/our-work/information-communication-and-extension/training

- Diversification to meet the demands of the consumers.

The demands of the consumers continue to vary with time. This leads to the creation of a variety of market niches. This is a blessing to the agricultural sector for it means expansion for the sector leading the establishments a variety of investments to cater for the diverse needs of the consumers. Hence, the initiation and motivation of diversification, for the existing and new investors. That is, not to concentrate on only one produce but to diversify into the production of other agricultural products. Eg.

-	Poultry	-	cattle
-	Piggery	-	dairy
-	Vegetable	-	fruits
-	Crops	-	bee
-	Wheat	-	etc.

https://www.google.com.fj/search?q=images+of+agriculture+in+fiji

- Intensive Agriculture

https://www.google.com.fj/search?q=images+of+agriculture+in+fiji

This a type of agriculture where there is a lot of capital and labour input such as to increase the production per unit area. Usually the piece of land is not given much time to fallow and there is great use of fertilizers, pesticides and weedicides. Eg. Sugarcane farming,etc.

- Extensive agriculture

https://www.google.com/search?q=images+of+extensive+farming

Extensive agriculture, as opposed to intensive agriculture, is a type of agriculture where there is little input of capital , labour, fertilizers and pesticides or weedicides. There is very little production per unit area (as compared with intensive agriculture). Hence, it would require a large area of land for production to increase. This type of agriculture is carried out low cost land or land that is owned by an individual or entity. It is also carried out in areas where population is low and usually the location is at a distance from its markets.

- Etc.

The above objectives must be carried out in view of the environmental capacity. Environment preservation and conservation must take precedence for all of the above.

Modern ideas and demands have contributed to the existence of many forms and /or types of agriculture.

Moreover, the types of agriculture would better be described if we group it into different categories.

The table below intends to classify the *common types* of agriculture.

Table 1.1.1a **Classification of Agriculture**

Category	Type	Example
Common Agriculture of plants	Botany	All flowers, Shrubs, Grasses
	Crops	Dalo, Sugarcane. Yaqona, Ginger
	Vegetable	Cabbage, Lettuce
	Fruits	Pineapple, Pawpaw, Banana, Orchards
	Cereal	Rice, Wheat, Maize
	Peas	Long bean, French bean
Biotechnology	Aquaculture	Prawn, Crab, Pearl, Seaweed
	Hydroponics	Most types of vegetables
Livestock	Grazing	Dairy, Horses, Camels, Donkeys, etc.
	Meat	Cattle, Sheep, Goat, Piggery, etc
	Poultry	Chicken, Geese.

There are other specific classifications and types of farming that is practiced in the world today with the aid of modern technology and ideas.

- ***ACTIVITIES*** ***- NOTES REVISION WRITTEN WORK– DISCUSS IN PAIRS***

1. ***With reference to specific theme countries, discuss four importance of agriculture.***
2. ***Differentiate between intensive farming and extensive farming. Give examples from your theme countries.***
3. ***Research on four different types of agriculture. (Group work – groups of four).NB. All the types of agriculture to be researched on – to serve as resource for the class.***

1.1.2 LAND TENURE SYSTEMS

Land tenure systems differ for different countries in the world. The most common land tenure system in the world today is two-fold in that there is land that is owned by the governing body which is known as "State or Crown " land and a landholder landowner unit which could either be traditionally claimed and known as native land; or legally claimed and known as estates or private properties. Some countries still practice the feudal system in place of the latter part.

In other instances, land tenure is three-fold in that there is State land, Native land and Freehold land. Freehold land can be sold and bought and is privately owned. State land and Native land cannot be sold and bought but either used by the landowning unit or is available on leasehold basis within a confined number of years; which would then be known as State lease or Native lease.

Agriculture can be practiced in either of the land tenure systems. However, for leasehold basis the land could be utilized for agriculture through an Agriculture Lease. If land is not leased then tenants could practice agriculture on these lands through a mutual contract or special agreement with the landowning unit.

- ***ACTIVITIES - RESEARCH - INTERNET***

Research on the land tenure systems of your theme countries or in your community. Briefly describe how it has originated and its significance to the people and the host country. Compile a short report.

1.1.3 SUBSISTENCE AND COMMERCIAL AGRICULTURE

A. Subsistence Agriculture

https://www.google.com.fj/imgres?imgurl=http://devpolicy.org

Subsistence agriculture is a small scale production of crops or animal husbandary for self-sufficiency or simply farming for your own use. ie. for household diet and social obligations. However, for most developing countries, with the change of time and demands of modern lifestyles, this concept has broadened to serve multiple other purposes. These include:

- Meeting the local consumption demands in local markets
- Supplying local cooperatives for export markets and special markets
- Etc.

Usually, traditional farming methods are used for this type of farming. Hence, agricultural sectors tend to encourage this type of farming to ensure food security and to preserve traditional farming techniques and /or ideas. In fact, these traditional concepts in farming serve as the basis for all modern technologies and developments.

This common form of agriculture is practiced by

- Peasants
- Nomads in herding
- Villagers in village farms
- Individuals in farming settlements
- Families as backyard farms
- Etc.

B. **Commercial Agriculture**

https://www.google.com.fj/mgres?imgurl=http://dingo.care2.com

Commercial agriculture is large scale production of crops or animal husbandary for economic gains or benefits; through distribution to wholesalers, retail outlets, specialized markets (domestic and international) and local markets.

This type of farming is mostly *capital intensive* than *labour intensive* to be able to cater for the increasing demands and diverse demands of the consumers.

The slide shown on the next page tends to summarize the basic elements which make up a commercial farm.

http://www.slideshare.net/icon66rt/agriculture-ppt-15538511?next_slideshow=1

- ***ACTIVITIES*** - ***CHARTWORK – USE OF MASS MEDIA, INTERNET,ETC.***

  On a vanguard sheet:

  (i) Paste pictures to differentiate between subsistence and commercial agriculture.

  (ii) List down the importance of each of these types of agriculture.

  (iii) Identify the factors which influences these types of agriculture.

1.1.4 TRADITIONAL AND CONTEMPORARY PRACTICES

3.1.4.1 Traditional Practices (from traditional to early industrialization)

In the primitive ages humans used sticks and stones improvised for agricultural use. In the introduction of iron and steel in early industrialization stage, agricultural tools in these times developed into similar tools as those shown in these pictures.

http://fengtaichina.en.madeinchina.com/product/VMPmLJfjaSWg/http://search.tb.ask.com/search/AJimage.jhtml?search

http://search.tb.ask.com/search/AJimage.jhtml?searchfor=image+of+traditional+

Traditional agricultural practices are fundamental but somewhat complex with regards to the available tools and scientific knowledge on plants and animals. They used their own traditional knowledge, experience and instincts to formulate appropriate agricultural practices and ideas.

For instance, slash and burn is used to prepare land for farming, Even though it destroys the biodiversity and the organisms in the soil, the land are fertilized before farming commences. (Refer to diagrams below)

https://www.google.com.fj/mgres?imgurl=http://img1.photographersdirect.com

Through traditional ideas and their own form of technology these farmlands are transformed into areas of mixed farming neatly arranged into plots (Diagram shows dry-land farming).

https://www.google.com.fj mgres?imgurl=http://api.ning.com/files/

It can also be transformed into terraces for farming of numerous types of agricultural products. (Diagram shows wet-land farming)

https://www.google.com.fj/ mgres?imgurl=http://www.greenpeace.org/eastasia/

Traditional farmers have also modified their practices to utilize vacant spaces like backyards though raised plot farming as shown in the diagrams below.

https://www.google.com.fj/imgres?imgurl=http://matava.com/wp3/wp-content

Other traditional farming practices include shifting cultivation (to allow land to fallow), crop rotation and basic animal husbandary.

For all traditional practices, harvesting is done manually.

https://www.google.com.fj/ mgres?imgurl=http://bp.blogspot.com

3.1.4.2 Modern Practices (from late industrialization to modern times)

Modern agricultural practices are based on a net work of ideas and techniques of intellectuals, specialist farmers and science technology, specified for an agricultural type, climate type and soil type.

http://www.slideshare.net/Nawarajintermediate/modern-agricultural-practices

Modern technology has greatly influenced modern farming practices to strive towards attaining their objectives. It might be capital intensive, however, it certainly reduces the high labour cost and allows for mass production.

http://search.tb.ask.com/search/AJimage.jhtml?searchfor=image+of+traditional+tiller&cb=

https://www.google.com.fj/search?q=modern+farming+tools&biw=1242&bih=585&tbm=isch&tbo=u&source

Of the many modern agricultural techniques, a technique which is quite extraordinary but which has proven to be the most successful is the use of the Greenhouse. The picture shown demonstrates what a greenhouse is.

http://www.slideshare.net/Nawarajintermediate/modern-agricultural-practices

Other prominent modern agricultural practices are outlined in the resources given below. Agricultural practices are chosen to suit:

- the relief and soil type.
- the climate.
- the available caital and labour.
- Markets available.
- Etc

SUSTAINABLE TRADITIONAL AGRICULTURAL PRACTICES USED IN THE CARIBBEAN

- **Intercropping & polyculture**: symbiotic relations 'tween plants (shade, rooting systems), plant diversity encourages natural biological control of insect pests, provides year round food supply.
- **Crop rotation w/ legumes**: helps retain soil fertility & year round food supply, (rotations involve red peas, gungo peas, cowpeas, string beans etc)

- **Spatial organisation of crops in fields**: strip cropping, grass barriers, contour planting – all contribute to soil conservation, planting trees to act as wind breaks
- **Fallowing**: helps restore soil fertility if sufficient time elapses, helps maintain vegetative cover to reduce erosion.
- **Mulching**: helps reduce evapotranspiration & soil loss from wind erosion, adds nutrients to soil, minimises the impact of splash erosion.

http://www.slideshare.net/icon66rt/agriculture-ppt-15538511?next_slideshow=1

http://www.slideshare.net/icon66rt/agriculture-ppt-15538511?next_slideshow=1

- ***ACTIVITY* - RESOURCE BOOK – INDIVIDUAL ACTIVITY**

  Each individual is to compile a small resource book on traditional and modern practices in any of the theme countries.

3.1.5 IMPORTANCE OF AGRICULTURE

3.1.5.1 Some Environmental Importance

1. ***Retention of vegetation*** –this is essential to retain soil cover. It also prevents soil erosion and retains to some extent the microclimate of that particular area.

2. ***Retains the biodiversity*** – retains the biodiversity to some extent such as to retain the food chains and food web of specific areas, thus saving most of the organisms from being extinct in a particular area.

3. ***Retains soil cycles*** – the presence of plants means humus for the soil which contributes to the nutrient cycles and other soil cycles.

4. ***Retains soil fertility*** – vegetation does not only retain soil cycles, it also retains all the elements which make up the whole soil composition. It also prevents soil erosion.

3.1.5.2 Some Economic Importance

1. ***Source of income/livelihood*** - it promotes employment and employment opportunities, and wealth to provide for their daily needs and wants.

2. ***Promotes investments*** – as demands continue to vary there would continue to be an increase in investment opportunities and as population grows the market continues to expand.

3. ***Increases Government Revenue and GDP*** – as commercial agriculture increases the GDP of the country also increases which means the increase in Government Revenue (especially due to export earnings).

4. ***Multiplier Effect*** – earnings from agricultural sales have multiplying effects in a country. That is , from the revenue earned by the government which promotes development and economic growth to the earnings of a simple farmer which provides for his livelihood and social obligations.

3.1.5.3 Some Social Importance

1. ***Source of fresh daily food*** – this is the main reasons of practicing agriculture is to provide fresh food to the farmer and his/her family and especially to consumers.

2. ***Source of healthy diet*** – it provides food from all the food groups hence it provide healthy diets to the farmer and the consumers.

3. ***Promotes development*** – it will mean infrastructural development, technical and financial assistance provided by the government; development initiated by the farmer; and development created by other investors and services which are either drawn into or decentralized into these farming areas.

4. ***Food security*** – finally the growth of the agriculture sector would mean food security for the people.

- ***ACTIVITY - RESOURCE BOOK – INDIVIDUAL ACTIVITY***

  Students are to research on six of each of the importance of agriculture.

  Each individual is to compile a small resource book on the importance of agriculture in a specific theme country. The resource book should consist of the topics, pictures and short notes and examples.

1.1.5 PROBLEMS FACED BY AGRICULTURE

In the bid to promote agriculture to solve the problem of food scarcity relative to population increase, barriers and constraints still arise to stall the advancement of the agricultural sector. Some of these problems are caused by man while most it is influenced by man.

Eg. _. _

- ***ACTIVITY* - *RESOURCE BOOK – INDIVIDUAL ACTIVITY***

  Students are to research on six of each of the importance of agriculture.

  Each individual is to compile a small resource book on the importance of agriculture in a specific theme country. The resource book should consist of the topics, pictures and short notes and examples.

1.1.6 PROBLEMS CAUSED BY AGRICULTURE

Environment	Economic	Social
Pollution	Leakage – foreign investors/ expats.	Conflicts over land
Soil Degradation	Inc. Gov. Expenditure	Poor working conditions
Loss of biodiversity	Expenses of maintenance	Health risk – fertilizer deposits on vegetables
Destruction of habitats	Inflation – increase in prices of goods	Lack of space for development

https://www.google.com/search?q=image+of

1.1.7 WAYS TO MINIMIZE THE PROBLEMS

Some probable ways of minimizing the problems faced by agricultural sectors are:

- **Controlled Agriculture**

http://www.slideshare.net/Nawarajintermediate/modern-agricultural-practices

- **Sustainable Agriculture**

http://www.slideshare.net/Nawarajintermediate/modern-agricultural-practices

- **Agro-forestry**

https://www.google.com/search?q=image+of+agroforestry&client=firefox-_

Agro-forestry simply means farming while retaining part of the forest, as depicted above.

- **Appropriate Technology – Aquaponics/Hydroponics**

https://www.google.com.fj/search?q=images+of+traditional+farming+practices+in+fiji

The use of appropriate and applicable technology for quantity and quality in agriculture.

- ***<u>ACTIVITY</u> - INTERNET/ LIBRARY RESEARCH - WORK INPAIRS***

Students are to explain twelve problems from 3,1,7 and for each of these problems they are to identify the most probable solution which would minimize its effects. Each pair are to write a brief report on their research. This would be assessed and can be retained as a subject resource.

1.1.8 CONTEMPORARY ISSUES

https://www.google.com.fj/search?q=images+in+agriculture&biw=

Economic Benefits or wealth gained from commercial agricultural has influenced money-minded farmers to continue to expand their farms without regards of space, land capacity and sustainability.

- **Uncontrolled Scientific Knowledge**

http://search.tb.ask.com/search/AJimage.jhtml?searchfor=image+of+HYBRID+FRUITS

Uncontrolled science practices in agriculture would result in undesired agricultural products which would destabilize the equilibrium in our ecosystem.

- **Climate change**

Climate Change has multiple effects to our environment. eg. Doughts, Flooding,Cyclones, etc.

- **Coastal Flooding**

Coastal Flooding contributes to the destruction of agricultural land.

https://www.google.com/search?q=image+of+climate+change *https://www.google.com.fj/search?q=images+of+beaches&biw=*

- **High population Growth**

High population growth threatens food security and causes food scarcity.

http://search.tb.ask.com/search/AJimage.jhtml?searchfor=image+of+high+population+growth

- etc

- ***<u>ACTIVITY</u> - INTERNET/ LIBRARY RESEARCH - WORK INDIVIDUALLY***

  Students are to identify different settlement patterns/ types and models. For each of these they are to research on the factors which have influenced it. Give specific examples from your theme countries.

1.1.9 THE FUTURE OF THE AGRICULTURE SECTOR

- Further development of sustainable agriculture

We have observed the importance of agriculture in view of the many contemporary issues which is affecting the world today. Study the tables given below:

Components of GDP

	NZD (millions)	% of total
Finance Insurance & Business Services	39,235	28.8
Personal & Community Services	16,552	12.2
Manufacturing	16,429	12.1
Transport & Communication	14,184	10.4
Retail, Accommodation , Restaurants	10,082	7.4
Wholesale Trade	9,947	7.3
Agriculture	**6,939**	**5.1**
Govt Administration & Defence	6,794	5.0
Construction	5,443	4.0
Fishing, Forestry, Mining	3,359	2.5
Electricity & Gas	2,680	2.0
Gross Domestic Product	**136,137**	**100.0**

https://www.newzealandnow.govt.nz/investing-in-nz/opportunities-outlook/economic-overview

This indicates the need to further develop the agriculture sector in a sustainable way to elevate its GDP standings above other sectors which are the cause of most of problems on our planet Earth.

Exports - top 20 commodities

Commodity	NZ$ (millions)	Year end
Milk powder, butter, and cheese	**12,428**	**31 Dec 2012**
Meat and edible offal	**5,167**	**31 Dec 2012**
Logs, wood and wood articles	3,160	31 Dec 2012
Crude oil	1,790	31 Dec 2012
Mechanical machinery and equipment	1,716	31 Dec 2012
Fruit	**1,563**	**31 Dec 2012**
Fish, crustaceans and molluscs	1,382	31 Dec 2012
Wine	1,218	31 Dec 2012
Electrical machinery and equipment	1,119	31 Dec 2012
Aluminium and aluminium articles	1,042	31 Dec 2012
Casein and caseinates	890	31 Dec 2012
Iron and steel articles	874	31 Dec 2012
Preparations of cereals, flour and starch	917	31 Dec 2012
Precious metals, jewellery and coins	807	31 Dec 2012
Miscellaneous edible preparations	747	31 Dec 2012
Optical, medical and measuring equipment	721	31 Dec 2012
Wool	717	31 Dec 2012
Wood pulp and waste paper	589	31 Dec 2012
Raw hides, skins and leather	567	31 Dec 2012
Textiles and textile articles	560	31 Dec 2012

https://www.newzealandnow.govt.nz/investing-in-nz/opportunities-outlook/economic-overview

SOPI June 2012 - Dairy sector production and export value

	ACTUAL				FORECAST			
Year	**2009**	**2010**	**2011e**	**2012**	**2013**	**2014**	**2015**	**2016**
Cows and heifers in calf or in milk[1] (mil)	4.35	4.61	4.68	4.82	4.93	4.96	4.98	5.17
Milk solids produced[2] (mil kg)	1394	1437	1472	1555	1600	1619	1638	1768
Milk price[2] (cents per kg milk solids)	472	610	709	687	727	785	864	783
Total export value ($ million)[3]	11429	10562	13042	14576	15575	16742	18287	17033

http://www.mpi.govt.nz/agriculture/pastoral/dairy.aspx

- The use of modern scientific knowledge to improve of the quality or quantity per unit area, and to meet the specific demands of the consumers.

https://www.innovateuk.org/food

- The need to maintain and/or improve on the variety of agricultural products.

http://search.tb.ask.com/search/AJimage.jhtml?searchfor=image+of+HYBRID+FRUITS

- The need to empower the people for food security and food sustainability.

http://www.usaid.gov/what-we-do/gender-equality-and-womens-empowerment

CHAPTER FOUR

MARINE RESOURCES

SUB – STRANDS:

- *Explain the types of marine environment and resources available and their significance.*
- *Explain how man's activities have affected the marine environment and its resources, and outline ways of conserving and protecting marine environment and appreciate its contributions to our daily living.*

1.1.1 A FISHERY

A fishery includes a complex set of interactions between the environment, the resources and the people involved in fishing and finding the catch.

There are four main parts of a fishery. These are:

STOCK FISHING PROCESSING MARKETING

Fish Stock or fisheries resources is a population of fish or other marine animals, which is exploited.

Fishing Operations includes all the fishing methods used by fisherman.

Processing may include the treatment of the resources, the storage and methods of producing the fisheries products.

Marketing simply refers to the sale of marine resources.

- ***ACTIVITY - INTERNET/ LIBRARY RESEARCH - WORK INDIVIDUALLY***

  Students are to discuss each part of the fishery in detail. Give specific examples from your theme countries.

1.1.2 MARINE ENVIRONMENT

The marine environment consists of the ocean and estuarine areas where large volumes of fresh water from land and salty ocean water mix. **Oceans** are huge basins filled with water situated between the earth's landmasses.

The ocean covers 71% of the planet's surface and from outer space it gives the earth a blued appearance. There are five large oceans in the world: Pacific, Atlantic, Indian, Southern and Arctic. The ocean has salty water because it contains minerals and salts that have collected over millions of years. Salts such as sodium chloride (NaCl), potassium chloride (KCl), magnesium chloride ($MgCl_2$) and Calcium Chloride ($CaCl_2$), have been washed from land and carried into oceans by rivers.

Source: www. google.com

Like continents, oceans also have mountain ranges, deep canyons and vast plains which constantly change their shape. Molten lava from submarine volcanic eruption from within the mantle spreads over the ocean floor near the mid ocean ridges. At the same time, tonnes of sediment are washed from the continents and dumped into the sea bottom.

The deepest part of the ocean is known as **Trenches.** Because of the many different types of rock and the effects of weathering and erosion, coastal areas have their own special landform example smooth, sandy beaches and **mudflats** to rock cliffs and **coral reefs**.

Water is also moved within the oceans by huge currents. Currents passing close to the equator are warm while those near the poles are very cold. **Ocean currents** also move along the ocean floor. When cold dense water runs into the surface. When this happens the current talks organisms and nutrients to the surface, attracting fish and other sea organisms / creatures. This process is called **Upwelling**. Upwelling attracts shoals of fish, they are also our most important fisheries.

When wind blows across the ocean surface it sets up a rolling motion of water particles which we call **waves**. Waves contain energy that moves in the same direction as the wind. The amount of energy in a wave is usually determined by the speed of the wind and tides. **Tides** are ocean waters that rises according to tides. Strangely the earth tides are caused by moon and sun. The gravitational pull of the 'moon attracts water into the ocean, making it bulge along the line of force. The sun also attracts water but its tidal pull is less than half of the moon. This causes high tide and low tide.

Marine Ecosystem

Most of the world's landscape lies under the sea, yet we are only beginning to learn about its formation and the many creatures that live there. The **continental shelf**, open ocean and ocean floor each have different physical surrounding so each environment has its own unique flora and fauna.

Marine plants tend to grow where both temperature and sunlight are available while sea mammals, fish, crustaceans and other creatures survive where there is food and protection. Each zone has its own particular **ecosystem.** Ecosystems are mangroves, coral reefs and rock shorelines. In an ecosystem are several food chains, where larger creatures dominate the small. When all food chains of an ecosystem are connected they form a **foodweb**. Many creatures depend upon each other for survival, the species in an ecosystem therefore are independent. Even a slight change in one part of the ecosystem will affect and change the other parts of the other ecosystem.

Oceans and **seas** cover 360million km² or 71% of the earth's surface. Most oxygen occurs near the surface although some deep currents occur in the ocean floor. Sunlight may penetrate to a maximum of 600 metres in clear water for photosynthesis only occurs in the upper 60 – 100 metres. Oceans waters vary in temperature from around 28°C at the equator to -2°C around Antartica. Salinity is highest near the surface due to evaporation. It gradually reduces with depth.

There are four main types of marine environment:

The marine environment consists of living and non-living surroundings of marine species. Both corals and sea-water are part of the marine environment.

There are many types of marine environment or ecosystems.

1. **Estuaries**

Estuaries are places where the rivers meet the sea. The mixing of river water and seawater causes low salinity and is said to be brackish. In this ecosystem there are often forests of mangroves and other coastal plants.

2. **Mangrove forests/swamps**

This environment provides shelter and food for marine organisms. Mangrove plants with their aerial roots help to stabilize the coastal ecosystem and retain the marine biodiversity which relies on this environment.

Some mountainous island like Fiji and Japan have sufficient rainfall to produce rivers. Estuarien areas where fresh water mixes with sea water at the mouths of large rivers, support the growth of specialized trees called mangroves. Mangroves live halfway between the land and the sea with their roots in an alternating environment of sea water and fresh water runoff from land.

Mangroves are trees with exposed roots growing along shorelines and near estuaries. In places they are so dense they form mangrove forests. The thick roots acts as baffles and slow down waves and tidal water. This allow for the build up of algae and decayed material called **detritus**, an important food source for fish, prawns and crabs. Roots are usually exposed at low tide. However, during high tide they are covered and provide protection for hungry fish.

Mangroves provide shelter and a constant supply of food for many different animals. The young or juveniles (babies/young) of some species such as prawns use mangroves and sea grasses beds as areas in which to grow (nursery areas) before moving out into deeper water. Other species such as mullet come to visit the area to breed, for larger fishes they come inshore to feed on smaller species. Mangrove therefore provides:

(i) a safe habitat for young fishes, crustaceans and birds

(ii) a buffer zone which reduces the impact of ocean waves, storm surges and river flooding

(iii) shades to the young that dwell in its waters.

(iv) its roots prevents coastal erosion and traps nutrients for the young fishes.

3. Beaches and Sea-grasses

Beaches are formed by particles of materials washed by waves or currents. In some cases, particles are carried from inland by rivers. Sea grasses have root systems which assist in the formation of sandbars and coastal landforms which provide food and shelter to many coastal marine organisms.

In some shallow water, sand areas there are extensive underwater meadows of grass-like plants collectively known as sea-grass. The sea-grass provides shelter and a constant supply of food for many different animals.

In some shallow water, sand areas there are extensive underwater meadows.

4. Coral reefs and Lagoons

Coral reef is a ridge of rock in the sea formed by the growth and deposit of coral. Coral reefs protects coastlines and coastal villages from large ocean waves formed by storms or cyclone. They are vital part of the coastal environment in the tropics and without them, many coastal areas would be without protection from the sea and without such a large variety of marine life.

Lagoon is a stretch of salt water separated from the sea by a low sandbank or coral reef.

There are three main types of coral reefs.

4.1 Fringing Reef

These grow at the edge of continents and islands

4.2 Barrier Reef

These are separated from the shoreline by a lagoon. It can cover the parallel coastiline of an island. Its an extensive reef. Eg Kadavu's Astrolobe Reef; Lakeba's Late-I-Fisi and Late-I- Tonga.

4.3 Atolls

These are coral reefs which grow in a circle or are built by currents. They grow in a circle around a lagoon over time, dead coral is broken down to form small areas of sand islet on the reef eg Wailagilala Island.

Coral reefs which are habitats and food sources for many marine organisms are living creatures themselves.

Apart from the above, there are certain marine organisms which depend on the lagoons for food.

Source : www:google.com

Coral reefs are formation produced by massive colonies containing billions of tiny coral animals, called Polyps, they secrete a stony substance calcium carbonate around themselves for protection when the coral dies, their empty Exoskeleton form layers that cause the reef to grow. They are found in the coastal zone of warm tropical and subtropical oceans.

Coral are beautiful national wonders and are among the world's oldest most diverse and most productive ecosystems. Coral reefs provide a number of things which includes:

(i) food and shelter for a variety of living things than most other natural areas in the world;

(ii) important ecological and economical services such as removal of carbondioxide CO_2 from the atmosphere as part of the carbon cycle

(iii) act as a natural barriers that helps protect 15% of the world's coastlines from erosion by battering waves and storms, and allows the ocean to replenish beaches with sand.

(iv) support at least ¼ of all identified marine species and 65% of marine fish species even though such reefs occupy less than 1% of the ocean floor.

(v) provides fish and shellfish, jobs and building materials for some of the world's poorest countries.

(vi) support fishing and tourism industries worth billions of dollars each year. Eg tourism generates about $2 million per year from Fiji's barrier reef in Vanualevu and other parts of Fiji.

(vii) Giving us an underwater world to study and enjoy.

Coral reefs are sometimes compared to tropical rainforests because they hold such high number of species biodiversity with complex ecological relationships.

- ***ACTIVITY* - INTERNET/ LIBRARY RESEARCH - WORK IN PAIRS**

Students are to research on the different marine ecosystems. Each pair is to write a brief report on their research. This would be assessed and can be retained as a subject resource.

1.1.3 MARINE RESOURCES

In the ocean each different types or species of fish or other marine animal can be grouped accordingly to the environment in which it lives. Some species lives:

(a) inshore area such as the estuarine and lagoons

(b) coral reefs

(c) offshore in the open sea.

Regardless of where the species or resources live their uses are important for the survival of other resources and humans also. These resources are used for subsistence and commercial use.

In the early days people have fished the world's oceans and seas, today many countries rely on fish to provide protein to the population. Countries which have large populations or are unable to grow grain and beef send fleets of fishing vessels to all parts of the ocean searching for as much ocean produce as possible eg. Japan. Most of their catches consists of fish fins, crustaceans (prawns, crabs, lobsters), shellfishes (abalones, scallops, oysters) and other mollusks (octopus, squid). Large numbers of boats also travel the remote Southern Pacific oceans seeking tuna and shark.

The marine resources are edible and useful for many other purposes other than eating such as for:

(a) Ornamental purposes – where shells are used for decoration, adornment eg jewellery. Japanese Mikimoto pearls, J.B. Huners Savusavu black pearls.

(b) Seaweeds – used for nitrate supply to keep freshness in packaged foodstuff eg. Kiuva and Verata's seaweed harvesting sites.

(c) Large Sized Fishes – used for recreation, fishing games, competitions and manmade water world's for amusement centres attractions. eg. Beqa and Kadavu Passages for shark feeding and game fishing competition.

(d) Iron, sand, gravel, phosphates, magnesium, oil and natural gas are also available for men's use.

The marine resources or species can also be grouped according to where they thrive example in the various zones either on the upper layer of the waters or in the ocean floor. They are either **Pelagic Species** or **Demersal Species.** Pelagic Species are those that swim or feed on the surface of the water also referred to as top feeders. Demersal Species are those that swim, live or feed on the seafloor and are referred to as bottom feeders).

In fact fisheries resources can be classified into four main groups.

A. Echinoderms

- these have a covering or an external endoskeleton - with spiny covering.

Eg. Sea cucumbers, Gastropods and Cephalopods.

B. Molluscs

- these are encased in one or two shells.

Eg. Uni-valves and bi-valves.

C. Crustaceans

- these have a body covered with a hard shell and it has jointed legs.

Eg. Lobsters, Crabs, Prawns.

D. Fish

- Characterised by endoskeleton with backbones.

Eg. Inshore fish, Offshore fish, Pelagic fish, Demersal fish.

- ***ACTIVITY* - INTERNET/ LIBRARY RESEARCH - GROUP WORK**

Students are to research on the different types of marine resources They are to explain each of these and give examples frn the theme countries. This would be assessed and can be retained as a subject resource.

1.1.4 THE LAW OF THE SEA

Laws and legislation were signed and imposed to safeguard the sea and its resources. The purpose of this law is to help protect some heavily used ocean fisheries from overfished and allow recovery of ones already damaged from pollution that threatens the important food sources.

The United Nations Convention on the **Law of the Sea** (UNCLOS), also called the **Law of the Sea.** Convention or the **Law of the Sea treaty**, is the international agreement that resulted from the third United Nations Conference on the **Law of the Sea** (UNCLOS III), which took place between 1973 and 1982.

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The convention introduced a number of provisions. The most significant issues covered were setting limits, navigation, archipelagic status and transit regimes, exclusive economic zones (EEZs), continental shelf jurisdiction, deep seabed mining, the exploitation regime, protection of the marine environment, scientific research, and settlement of disputes.

The convention set the limit of various areas, measured from a carefully defined baseline. (Normally, a sea baseline follows the low-water line, but when the coastline is deeply indented, has fringing islands or is highly unstable, straight baselines may be used.) The areas are as follows:

Internal waters

Covers all water and waterways on the landward side of the baseline. The coastal state is free to set laws, regulate use, and use any resource. Foreign vessels have no right of passage within internal waters.

Territorial waters

Out to 12 nautical miles (22 kilometres; 14 miles) from the baseline, the coastal state is free to set laws, regulate use, and use any resource. Vessels were given the right of innocent passage through any territorial waters, with strategic straits allowing the passage of military craft as transit passage, in that naval vessels are allowed to maintain postures that would be illegal in territorial waters. “Innocent passage” is defined by the convention as passing through waters in an expeditious and continuous manner, which is not “prejudicial to the peace, good order or the security” of the coastal state. Fishing, polluting, weapons practice, and spying are not “innocent”, and submarines and other underwater vehicles are required to navigate on the surface and to show their flag. Nations can also temporarily suspend innocent passage in specific areas of their territorial seas, if doing so is essential for the protection of its security.

Archipelagic waters

The convention set the definition of Archipelagic States in Part IV, which also defines how the state can draw its territorial borders. A baseline is drawn between the outermost points of the outermost islands, subject to these points being sufficiently close to one another. All waters inside this baseline are designated *Archipelagic Waters*. The state has full sovereignty over these waters (like internal waters), but foreign vessels have right of innocent passage through archipelagic waters (like territorial waters).

Contiguous zone

Beyond the 12-nautical-mile (22 km) limit, there is a further 12 nautical miles (22 km) from the territorial sea baseline limit, the contiguous zone, in which a state can continue to enforce laws in four specific areas: customs, taxation, immigration and pollution, if the infringement started within the state’s territory or territorial waters, or if this infringement is about to occur within the state’s territory or territorial waters.[6] This makes the contiguous zone a hot pursuit area.

Exclusive economic zones (EEZs)

These extend from the edge of the territorial sea out to 200 nautical miles (370 kilometres; 230 miles) from the baseline. Within this area, the coastal nation has sole exploitation rights over all natural resources. In casual use, the term may include the territorial sea and even the continental shelf. The EEZs were introduced to halt the increasingly heated clashes over fishing rights, although oil was also becoming important. The success of an offshore oil platform in the Gulf of Mexico in 1947 was soon repeated elsewhere in the world, and by 1970 it was technically feasible to operate in waters 4000 metres deep. Foreign nations have the freedom of navigation and overflight, subject to the regulation of the coastal states. Foreign states may also lay submarine pipes and cables.

Continental shelf

The continental shelf is defined as the natural prolongation of the land territory to the continental margin's outer edge, or 200 nautical miles (370 km) from the coastal state's baseline, whichever is greater. A state's continental shelf may exceed 200 nautical miles (370 km) until the natural prolongation ends. However, it may never exceed 350 nautical miles (650 kilometres; 400 miles) from the baseline; or it may never exceed 100 nautical miles (190 kilometres; 120 miles) beyond the 2,500 meter isobath (the line connecting the depth of 2,500 meters). Coastal states have the right to harvest mineral and non-living material in the subsoil of its continental shelf, to the exclusion of others. Coastal states also have exclusive control over living resources "attached" to the continental shelf, but not to creatures living in the water column beyond the exclusive economic zone.

Aside from its provisions defining ocean boundaries, the convention establishes general obligations for safeguarding the marine environment and protecting freedom of scientific research on the high seas, and also creates an innovative legal regime for controlling mineral resource exploitation in deep seabed areas beyond national jurisdiction, through an International Seabed Authority and the Common heritage of mankind principle.[7]

Landlocked states are given a right of access to and from the sea, without taxation of traffic through transit states.[8]

Source: en.wikipedia.org/.../United_Nations_Convention

This Law recognizes 7 Administrative Zones:

- ***ACTIVITY* - CHARTWORK - GROUP WORK**

Students are to demonstrate the above information on a vanguard sheet This would be assessed and can be retained as a subject resource.

- ***ACTIVITY* - WRITTEN WORK - INDIVIDUAL**

Students are to explain the importance of the Law of the Sea to Pacific Island Countries.

1.1.5 IMPORTANCE OF THE MARINE RESOURCES AND FISHERY

- Source of food/ Food Security

Marine resources are an important part of the diet of coastal dwellers in most countries. The development of the fishing industry means food provisions and food security.

- Source of employment/ Income

The existence of the fishing industry means employment, income and livelihood for the people.

- Source of Export Earnings

Export of marine products means increased revenue for the country.

- Promotes development

Development comes with economic growth.

- Provides proteins, vitamins and minerals.

Fish products are sources of proteins, vitamins and minerals.

- Retains food chain and food web

Marine species are mainly very importanta parts of some food chains and food webs.

- Retains biodiversity

As the food webs and food chains are retained then extinction of species can be avoided to retain biodiversity.

- Sustains life and natural beauty.

The ocean or the sea has its own characteristics and beauty.

- Etc.

- ***ACTIVITY* - ESSAY - INDIVIDUAL**

Students are to discuss four importance of marine resources Topics are to be allocated to individual students. This would be assessed and can be retained as a subject resource.

1.1.6 MARINE RESOURCE PRODUCTS

1.1.7 TRADITIONAL AND MODERN FISHING METHODS

1.1.7.0.1 Traditional Fishing Methods

The most common traditional methods are the use of fish traps and spear fishing.

1.1.7.0.2 Modern Fishing Methods

http://www.fao.org/3/a-v1430e/V1430E04.htm

Purse Seine

Mainly skipjack and small yellowfin are caught by purse seine gear. Most catch is for canning.

About 75% of the tuna catch in the WCPO region is by

purse seine gear, about 1.9 million tonnes in 2009. Most of the purse seine catch is taken within 5 degrees of the equator.

http://www.europacifictuna.com/purseseine.htm

Longline

Most tuna caught by longliners are large size yellowfin, bigeye, and albacore. The prime yellowfin and bigeye often are exported fresh to overseas markets. Most of the albacore is for canning.

About 10% of the tuna catch in the WCPO region

is by longline gear, about 240,000 tonnes in 2009. There are two major types of longliners: (1) relatively large vessels with mechanical freezing equipment (often based outside the Pacific Islands), and (2) smaller vessels that mostly use ice to preserve fish and are typically based at a port in the PacificIslands.

http://www.current/lectures/fisheries.html

Pole and Line

Mainly skipjack and small yellowfin are caught by pole-and-line gear. Most catch is for canning or producing a dried product.

About 7% of the tuna catch in the WCPO region is by pole-and-line gear, about 147,000 tonnes in 2009. In the 1980s several PacificIsland countries had fleets of these vessels, but most no longer operate due to competition with the more productive purse seine gear.

https://greenfishbluefish.wordpress.com/tag/tuna-fishing/

Troll

Large-scale trolling targets albacore for canning.

Gear types other than the three listed above are responsible for about 13% of tuna catch in the WCPO. Large-scale trolling is an important part of this. It is carried out in the cool water to the south and north of the Pacific Islandsregion. Trolling in the south results in about 5,000 tonnes of albacore annually.

Driftnet

http://www.wwfsassi.co.za/?m=4&s=4&

- ***ACTIVITY* - CHARTWORK - WORK IN PAIRS**

Students are to compare traditional and modern fishing methods and identify its benefits and problems. Each pair is to display their findings on an A3 paper.

1.1.8 EXPLOITATION OF THE MARINE RESOURCES/ENVIRONMENT

- Overfishing - exceeding the quota.
- Uncontrolled Fishing - illegally fishing
- Unsustainable Fishing Methods - use of explosives
- Fishing of Undersized Fish - fishing in off-seasons
- Pollution - oil spills, dumping of waste
- Etc.

1.1.9 MARINE RESOURCES AND SUSTAINABILITY

- Marine Regulation

  There are four main regulations:

  (i) Limiting the catch (Quota)

  (ii) Limiting the number of fishing units (licence)

  (iii) Limiting the size of fish.

  (iv) Controls on fishing methods and gears.

  (v) Closed seasons and areas

- Law of the Sea

  (Refer to notes on UNCLOS)

  By 1982, the custom of asserting a 12 nm territorial sea, 24 nm contiguous zone, and 200 nm EEZ was codified in the United Nations Convention on the Law of the Sea (UNCLOS).

- Pro-active actions/ decisions

  The Species of Concern list:

  - Identifies species potentially at risk;
  - Identifies data deficiencies and uncertainties in species' status and threats;
  - Increases public awareness about those species;
  - Stimulates cooperative research efforts to obtain the information necessary to evaluate species status and threats; and,
  - Fosters voluntary efforts to conserve the species before listing becomes warranted.

  http://www.nmfs.noaa.gov/pr/species/concern/

- Use of applicable Frameworks

Source :www.youtube.com

1.1.10 CONTEMPORARY ISSUES IN MARINE RESOURCES

- **Climate Change** – global warming changes sea temperatures.
- **Exploitation of Resources** – overfishing, etc.
- **Population Increase** – increase in exploitation of resources.
- **Pollution** – endangers marine species.

1.1.11 FUTURE OF MARINE RESOURCES

A. **Use of modern technology for sustainable fishery**.

B. **Allow for stock replenishment.**

C. **Use of alternative sources of food and diet.**

- ***ACTIVITIES* - *RESEARCH – INTERNET - INDIVIDUAL***

Research on the factors which contribute to the exploitation of marine resources. Students are to identify ways of minimizing these factors and enhance marine conservation. Compile a one page report.

- ***ACTIVITY* - *SPEECH - PAIRS***

Students are to be allocated into groups of threes. Each group is to write up a speech based on one contemporary issue in marine resources and how it affects the fisheries in either of the theme countries. Each speech should not be more than three minutes long. Scripts are to be submitted for class resource.

- ***ACTIVITY* - *RESEARCH - GROUPWORK***

Students are to visit the local fisheries departments and/or organizations and gather information on contemporary issues in marine resources and possible plans for the future of marine resources. Each group is to compile a report. This would be assessed and can be retained as a subject resource

THE END

APPENDIX

1.0 **Population** - List of Terms

Aging Population
Asylum Seekers
Birth Rate
Bustees
Chawls
Commuters
Contraceptive
Cosmic City
Counter-urbanisation
Death Rate
Decentralisation
Demographic Transition
Demography
Doubling Time
Ecumene
Emigration
Gentrification
Ghetto
Hamlet
Hinterland
Immigration
Migration
Millionaire City
Mortality
Natality
Natural Decrease
Natural Increase
Optimum Population
Population Density
Population Displosion
Population Distribution
Population Implosion
Population Pyramid
Poverty
Primate City
Pull Factors
Push Factors
Refugee
Replacement Rate
Settlement
Slum
Squatters
Urban Blight
Urban Drift
Urban Renewal
Urban Sprawl
Urbanisation
Voluntary Migration
Youthful Population
Zero Population Growth

2.0 **Tourism** - List of Term

Adventure tourism

Authentic Culture

Backpacker

Benchmark

Carrying Capacity

Cultural Tourism

Culture

Customs

Day Visitor

Deluxe

Departure Tax

Deregulation

Destination

Domestic

Domestic Tourism

Dwell Time

Ecotourism

EIA

Globalisation

Gateway City

Heritage

HRM

Inclusive Tour

International

Itinerary

Long Haul Market

Market orientated pricing

Market segmentation

Mark-up

Mass Tourism

Meet and greet

Nature Tourism

Outbound Tour

Package tour

Peak Fare/ Rate/ Season

Port of entry

Regulation

Resort

Short Haul Market

Souvenir

Statute

Sustainable tourism

Tariff

Tour operator

Tourism

Tourist

TOWS matrix

Transit visa

VAT

Visa

World Heritage Site

Zoning

3.0 Agriculture - List of Terms

Agroforestry

Agronomy

Alluvial soil

Angiosperm

Asexual reproduction

Biennial

Biodiversity

Biodynamics

Bio-mass

Biosecurity

Biota

Bovine

Broiler

Carbohydrate

Carbon Sink

Castrate

Chlorophyll

Clear Felling

Clone

Dairy

Deciduous

Ear-tag

Ecosystem

Endemic

Equine

Exotic

Fallow

Fauna

Fecundity

Fecundity

Herbicide

Heterozygous

Homozygous

Horticulture

Humification

Hybrid

Hybrid

Insecticide

Leaching

Leaching

Nutrients

Perennials

Permaculture

Permeable

Pesticide

Photosynthesis

Phototrophic

Poultry

Quota

Rotational grazing

Selectin

Trophic

4.0 **Marine Resources** - List of Terms

Aquaculture
Archipelagic State
Artisanal fishing
Atolls
Barrier Reef
Brackish
By-catch
Carnivore
Commercial Fishing
Contiguous Zone
Continental Shelf
Crustaceans
Demersal
Down-welling
Driftnet
Echinoderms
EEZ
Extinction
Fish
Fishery
Fringing Reef
Gill Nets
GPS
Herbivore
Lagoon
Larvae
Long Line
Mangrove
Mariculture
Molluscs
Pearl
Pelagic
Pole and Line
Polyp
Purse Seine
Quota
Radar
Seagrass
Seaweed
Selectivity
Sonar
Spawning
Spawning
Stock
Subsistence Fishing
Territorial Sea
Tide
Trawling
Trolling
UNCLOS
Upwelling
Vulnerable species

5.0 Map of India - Population

http://www.mapsofindia.com/maps/india/population.htm

http://www.mapsofindia.com/maps/cities/india-map-with-cities.html

6.0 Map of Australia – Tourism

http://www.lonelyplanet.com/maps/pacific/australia/

Opera House

Great Barrier Reef

Uluru

Sydney Harbour Bridge

Blue Mountains

Kakadu National Park

Fraser Island

Daintree National Park

Bondi Beach

http://www.planetware.com/tourist-attractions/australia-aus.htm

7.0 Map of New Zealand - Agriculture

http://www.mfe.govt.nz/publications/climate-change/new-zealand%E2%80%99s

https://www.google.com/search?q=map+of+major+cities+in+new+zealand&client=firefox-a&rls=org.mozilla:

8.0 Map of Japan – Marine Resource

https://www.google.com/search?q=map+of+japan&client=firefox-a&hs=lp6&rls=org.mozilla:en-US:official

Fishing Fleet

Fishing Operation

Fish Treatment

Fish Sales

Fish Packaging

Whale Fishing

http://search.tb.ask.com/search/AJimage.jhtml?pn=1&queryTerm=Fishing_industry_in_Japan