

Strand	Human Geography
Sub strand	Agriculture and Food Supply – Fiji & New Zealand
Content Learning Outcome	Discuss the significance of the agriculture sector in providing food supply and source of income and analyse its importance in food security.

TOPIC: AGRICULTURE AND FOOD SUPPLY

- ✓ Agriculture in layman’s terms means the cultivation of plants and animals for human use and purposes.

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
- ✓ Hence, more funds, technical assistance and scientific research are now channeled towards agriculture to ensure food security and to alleviate poverty and progress towards economic prosperity.

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

1. 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, to cater for the increasing population and bring about food security and economic growth.
2. Use of agricultural science technology to improve yields or products – quality.
 - The introduction of scientific technology has had great influence in modifying agricultural products.
3. 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.
 - That is, not to concentrate on only one produce but to diversify into the production of other agricultural products.

Intensive Agriculture

- Lot of capital and labour input 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.

Extensive agriculture

- Little input of capital, labour, fertilizers and pesticides or weedicides.
- There is very little production per unit area (as compared with intensive agriculture).

Copy table 1.1.1a Classification of agriculture-page 51(Human Geography)

LAND TENURE SYSTEMS

- **State or Crown** land- is land that is owned by the state or governing body.
- **Native land** -a landholder landowner unit which could either be traditionally claimed.
- Freehold land can be sold and bought and is **privately owned**.

SUBSISTENCE AND COMMERCIAL AGRICULTURE

A. Subsistence Agriculture

- Small-scale production of crops or *animal husbandary* for self-sufficiency or simply farming for your own use.
- Agricultural sectors tend to encourage this type of farming to ensure food security and to preserve traditional farming techniques.

B. Commercial Agriculture

- 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.
 - **Copy Farming System diagram -page 54 (Human Geography)**

TRADITIONAL AND CONTEMPORARY PRACTICES

Traditional Practices (from traditional to early industrialization)

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

Modern Practices (from late industrialization to modern times)

- Modern agricultural practices are based on a network of ideas and techniques of intellectuals, specialist farmers and science technology, specified for an agricultural type, climate type and soil type.
- Might be capital intensive, however, it certainly reduces the high labour cost and allows for mass production.
- Modern agricultural methods have high social and environmental costs.

Activity: Refer to pages 58-59(Human Geography) to answer the following question.

1. Describe in **two to three sentences** the following agricultural practices.
 - a.) Green house farming
 - b.) Polyculture
 - c.) Crop rotation
 - d.) Fallowing
 - e.) Silvo-pasture
 - f.) Mulching
2. Differentiate between subsistence and commercial agriculture.
3. Describe the environmental impacts of modern agricultural practices.

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IMPORTANCE OF AGRICULTURE

➤ **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.

➤ **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.

➤ **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 provides 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.

PROBLEMS FACED BY AGRICULTURE

Environmental	Economic	Social
<ul style="list-style-type: none">- Climate change- Depletion of resources- Natural hazards- Pests/weeds/diseases	<ul style="list-style-type: none">- Increase cost of production- Increase cost of fuel- Competition for market	<ul style="list-style-type: none">- Political instability- High tax rate- Expiry of land lease- Lack of arable land

PROBLEMS CAUSED BY AGRICULTURE

Environment	Economic	Social
<ul style="list-style-type: none">- Pollution- Soil degradation- Loss of biodiversity- Destruction of habitats	<ul style="list-style-type: none">- Leakages- foreign experts/investors- Increased government expenditure- Maintenance cost- Inflation	<ul style="list-style-type: none">- Conflicts over land- Poor working conditions- Health risk- fertilizer deposits- Lack of space for development.

CONTEMPORARY ISSUES IN AGRICULTURE

1. Uncontrolled Agriculture

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.

2. Uncontrolled Scientific Knowledge

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

3. Climate change

Climate Change has multiple effects to our environment. eg. Droughts, Flooding and Cyclones.

4. Coastal Flooding

Coastal Flooding contributes to the destruction of agricultural land.

5. High population Growth

High population growth threatens food security and causes food scarcity.

Activity Questions

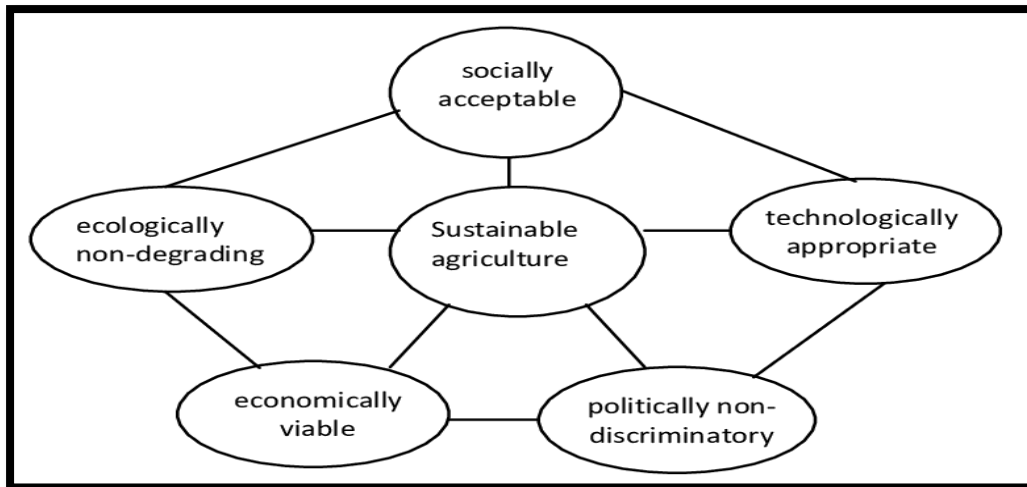
- 1. Describe a socio-economic importance of agriculture.**
- 2. Explain how agriculture promotes environment sustainability.**
- 3. Discuss two environmental problems faced by agriculture sector in Fiji.**

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WAYS TO MINIMIZE THE PROBLEMS

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

- Controlled Agriculture- measures to conserve natural resources meet the demand of the growing population and are financially viable.
- Sustainable Agriculture- focuses on producing long-term crops and livestock while having minimal effects on the environment.



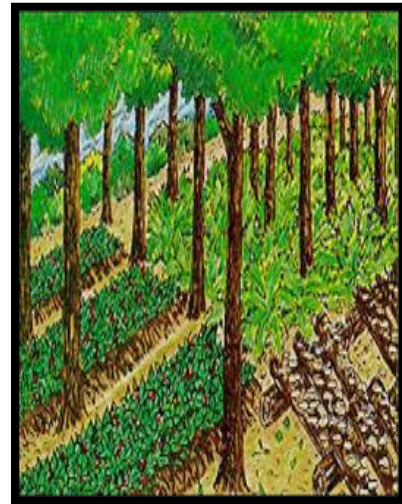
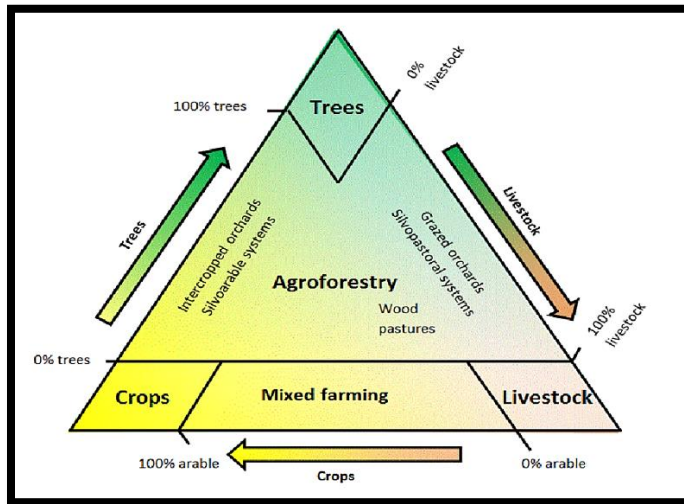
Sustainable agriculture practice

- Rotating crops and embracing diversity
- Planting cover crops
- Reducing or eliminating tillage
- Applying integrated pest management (IPM)
- Integrating livestock and crops
- Adopting agroforestry practices

Benefits of Sustainable Agriculture

1. Contributes to Environmental Conservation
2. Saves Energy for Future
3. Public Health Safety
4. Prevents pollution (Air, water and land)

- Agro-forestry - a land use management system in which trees or shrubs are grown around or among crops or pasture land. This intentional combination of agriculture and forestry has varied benefits, including increased biodiversity and reduced erosion.
- Agro-forestry simply means farming while retaining part of the forest, as depicted below.



- Appropriate Technology – technological choice and application that is small-scale, affordable by locals, decentralized, labor-intensive, energy-efficient and environmentally sound.

THE FUTURE OF THE AGRICULTURE SECTOR

- Further development of sustainable agriculture.
- 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.
- The need to maintain and/or improve on the variety of agricultural products.
- The need to empower the people for food security and food sustainability.

Activity Questions

1. List and explain three methods to achieve agricultural sustainability.
2. Describe a modern method of farming to reduce the impact of climate change on agricultural sector.
3. Suggest two reasons why capital is important in improving food production.