

4

Agriculture in Sri Lanka

Sri Lanka, being endowed with favourable environmental conditions for agriculture could be identified as a country which had an agricultural economy since ancient times. Early settlements were also established near river valleys suitable for agricultural activities and the Sri Lankan economy and culture are entwined with agriculture since then.

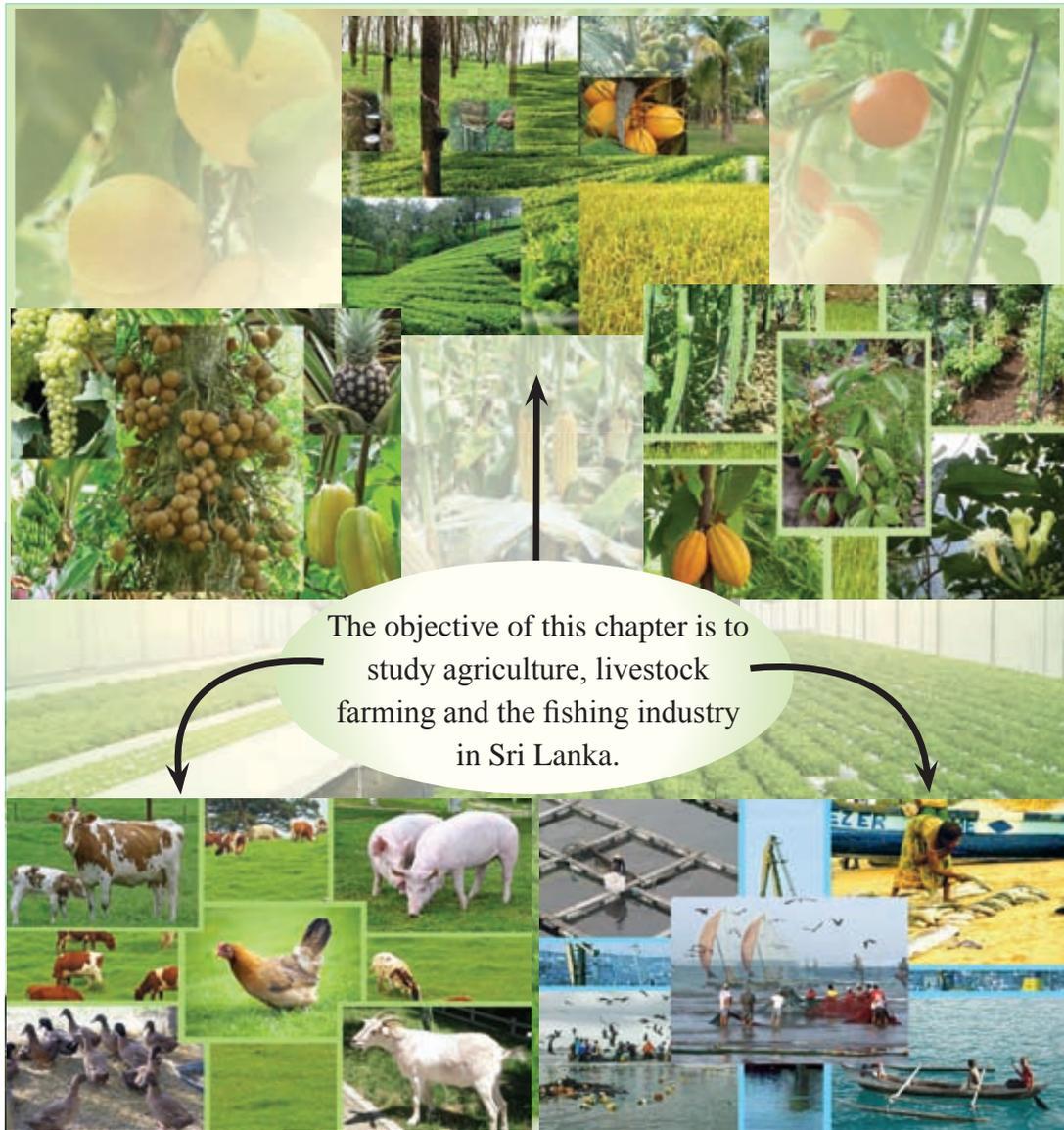


Figure 4.1
Agricultural activities in Sri Lanka

Paddy Cultivation

Paddy is an important staple food crop cultivated in Sri Lanka from the past. Prince Vijaya and his followers also, who came from North India established settlements in the plains around river valleys which were suitable for the cultivation of paddy. There was a decline in paddy cultivation during the colonial era, but many steps were taken to uplift it after independence. Setting up farming colonies in the dry zone and the reconstruction of tanks were some examples for such measures. Towards the end of 1960, paddy cultivation expanded rapidly due to the Green Revolution. At present, it has expanded even as a commercial crop.

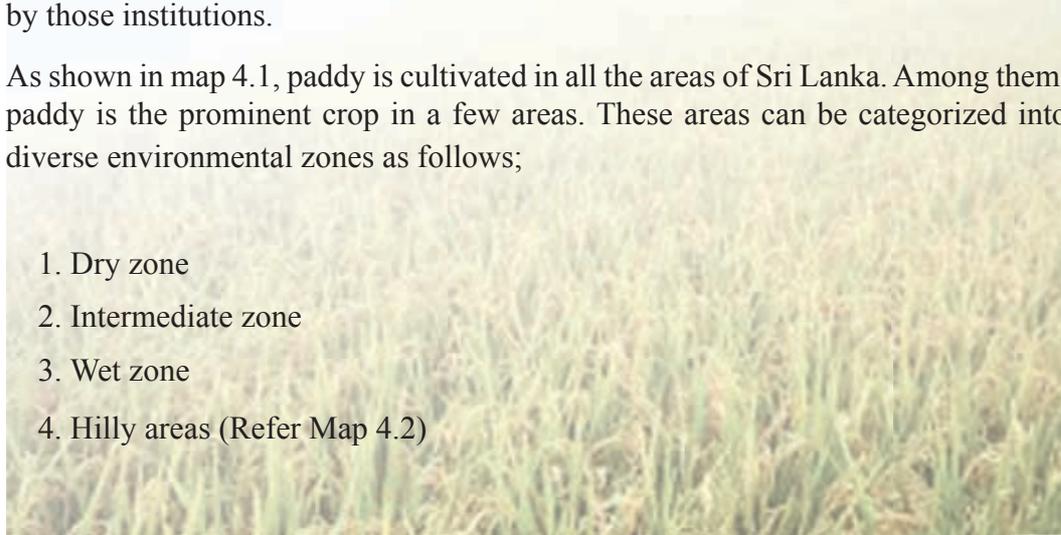
Significance of Paddy Cultivation

- The staple food of Sri Lankans
- Important as a local commercial crop
- Introducing many subsidiary products related to rice such as diverse food products and various type of animal food to the market
- Provision of raw materials for many industries
- Production of organic fertilizers
- Emergence of different kinds of jobs related to paddy cultivation

Due to the reasons stated above, greater attention has been paid on paddy cultivation. Much research is being done in Research Institutes at places such as Bombuwela, Mahalluppallama, Batalegoda, Hingurakgoda and Ambalantota. In addition, seed paddy and necessary instructions for cultivation are also provided by those institutions.

As shown in map 4.1, paddy is cultivated in all the areas of Sri Lanka. Among them, paddy is the prominent crop in a few areas. These areas can be categorized into diverse environmental zones as follows;

1. Dry zone
2. Intermediate zone
3. Wet zone
4. Hilly areas (Refer Map 4.2)



Paddy Cultivating Areas of Sri Lanka



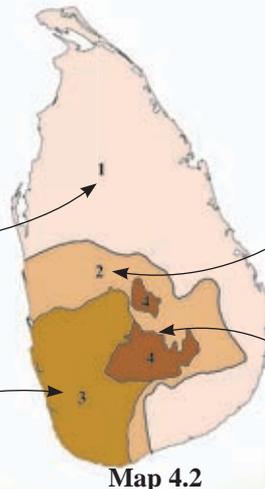
Map 4.1 : Distribution of paddy cultivation and different steps of paddy cultivation
 Source : Adapted from Gunasena Philips Map Book (2009)

1. Dry Zone

- Districts like Anuradhapura, Batticaloa, Hambantota, Polonnaruwa, Vauniya, Ampara, and Jaffna belong to this zone.
- The main seasons of paddy cultivation in these areas are 'Yala' and 'Maha'. Other than that, some areas have an intermediate season.
- Rain water and other water supply methods are used for cultivation. Irrigation is also used for cultivation of 'Goda Vee' or highland farming.
- There is a surplus of rice production because there is a big harvest per cultivated unit of land.
- Machinery is heavily used in cultivation.

2. Intermediate Zone

- Kurunegala district and some parts of Badulla, Matale, Moneragala and Matara districts belong to this zone.
- Kurunegala is the district which has the largest amount of land under paddy cultivation.
- Cultivation is done using rain water and other sources of water supply.
- Yields are high per unit of land.
- Machinery is heavily used in cultivation.



Main Zones of Paddy cultivation in Sri Lanka

Source : Adapted from Biodiversity Conservation in Sri Lanka (1998)

3. Wet Zone

- Galle, Kalutara, Ratnapura, Colombo, Gampaha and Kegalle districts belong to this zone.
- Paddy cultivation is done in low land areas and river valleys.
- Cultivation is mainly done with rain water.
- The harvest is lower, compared to the dry zone harvest.
- Cultivation is done in small plots of land.
- Very often, floods cause destruction to cultivation.

4. Hilly Lands

- Kandy, Matale and Nuwara Eliya are some important areas in this zone.
- Paddy cultivation is done in terraced fields.
- The least amount of land used for paddy cultivation is in Nuwara Eliya district.
- A low harvest is reaped per unit of land in this area.

Factors that have influenced paddy cultivation in these zones.

- Annual rainfall of more than 1900 mm.
- Average temperature of 21^oC - 35^oC.
- Alluvial soil, which retains moisture.
- Availability of labour.
- Dry weather when harvest is reaped.
- Facilities available for supply of water.

As shown in Table 4.1 below, there has been an increase in production of paddy as well as in the land used for paddy cultivation at present in Sri Lanka.

Table 4.1
The extent of land used for paddy cultivation and paddy production

Year	The extent of land used for paddy cultivation Hectares in Thousands	Quantity produced Metric Tons in Thousands
2008	1053	3875
2009	978	3652
2010	1065	4301
2011	1223	3894
2012	1067	3846

Activities

1. Mark and name the following in a map of Sri Lanka.
 - i. The two districts where the largest and the least amount of land under paddy cultivation are located.
 - ii. The Agricultural Research Institutes at Mahailuppallama, Amabalantota and Bombuwela.
 - iii. Agro - Technological park at Gannoruwa.
2. Prepare a bar graph using the data in Table 4.1 to show the extent of land used for paddy cultivation and the quantity produced. Write two changes in the production of paddy based on the data in the graph.

Assignments

1. Make a list of traditional and modern varieties of paddy.
2. Pay a visit to a farmer and discuss the problems faced by farmers who cultivate paddy and present a report.
3. Write a letter to a newspaper on the topic "Use of organic fertilizer in paddy cultivation".

Cultivation of Tea

Tea cultivation was introduced to Sri Lanka by an Englishman named James Taylor. He introduced it to the hill country in 1839. Tea was expanded as a plantation crop in 1867 in the Lul Kandura Group of Estates at Hewaheta, Kandy. At present, tea is cultivated in large estates as well as in small lands. The progress of tea cultivation from the inception to date can be explained as follows;

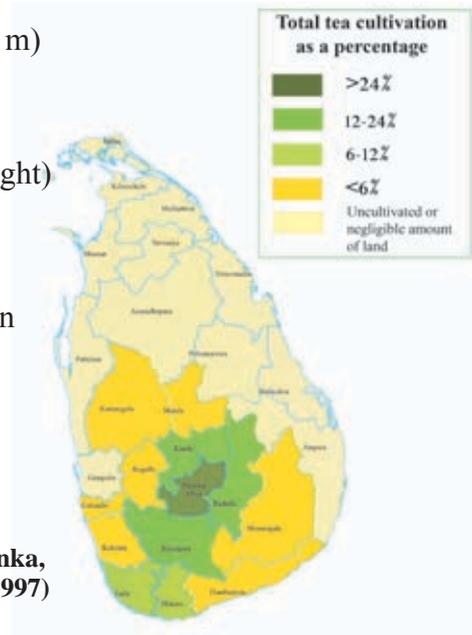
- In 1873, Sri Lanka, cultivated 7.5 hectares of land and produced 10.5 kilograms of tea for the first time. The revenue incurred was Rs.58/=
- In 2012, tea was cultivated in 222 000 hectares of land and the production of tea was 326.3 million kilograms. The income had risen to 74,065 million rupees.

Source : The Central Bank Report 2012

Distribution of Tea Cultivation in Sri Lanka

The areas under cultivation of tea in Sri Lanka are categorized into three divisions. They are, Up country tea, Mid country tea and Low country tea.

- Up country tea - (Highlands over 1220 m)
Nuwara Eliya
- Mid country tea - (Lands between 610 m - 1220 m in height)
Examples - Kandy, Matale, Badulla.
- Low country tea - (Lands below 610 m in height) Examples - Kalutara, Matara, Galle, Hambantota, Ratnapura, Kegalle.



Source : The Tea Industry in Sri Lanka, Supplementary Teachers' Manual (1997)

Map 4.3

Districts under tea cultivation in Sri Lanka

Source : Adapted from Gunasena - Philips World Atlas (2009)



Map 4.4

The distribution of tea cultivation in Sri Lanka and tea productions

Source : Adapted from Gunasena Philips World Atlas (2009)

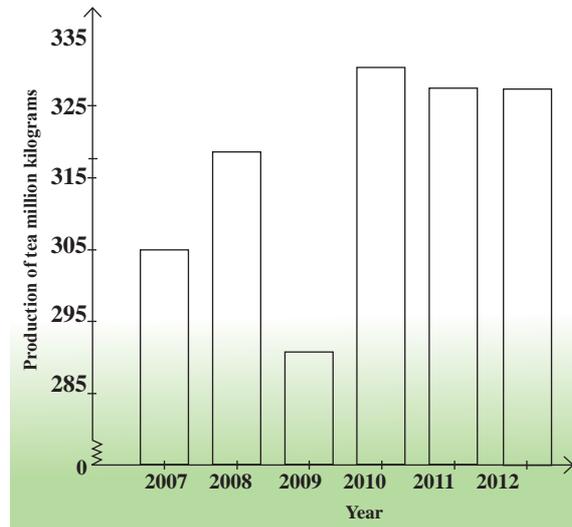
The factors which have contributed for the cultivation of tea,

- An annual rainfall of 1900 mm - 5400 mm
- An average temperature between 15^o C - 27^o C
- Loam and laterite soil
- Land with gentle slopes with a good drainage
- Skilled labour
- A developed transport service
- Availability of local and foreign market

Production of tea from 2007 to 2012 in Sri Lanka is shown in Table 4.2 and Graph 4.1

Table 4.2
Production of tea in Sri Lanka
2007-2012

Year	Production of tea in million kilograms
2007	305
2008	319
2009	291
2010	331
2011	328
2012	328



Source - Central Bank Report 2013

Graph 4.1
Quantity of tea production in Sri Lanka (2007-2012)

Activities

1. Study the table and graph shown above. Write the relevant year in which the highest and the lowest amount of tea was produced.
2. Write two changes that have taken place in tea production from 2007-2012 according to the above graph.

The Tea Research Institute of Thalawakele, Small Tea Estate Development Authority and Ceylon Tea Board are some institutions that provide an important service to promote tea cultivation in Sri Lanka.

A greater quantity of tea is produced for export in Sri Lanka, and it is presented in diverse forms for the export market. See Figure 4.3



Figure 4.3
Various tea products

Sri Lanka is one of the countries that produces high quality tea in the world. Sri Lanka as the producer of the best tea has introduced "Ceylon Tea" under the "Lion Logo" and has succeeded in winning accolades of consumers all over the world. The main buyers of Sri Lankan tea in the Middle East are countries such as Iran, Iraq, The United Arab Emirates, Syria and Jordan. Apart from these, Russia, United Kingdom, Japan and Australia are some of the other countries buying tea from Sri Lanka.

Activities

1. Discuss how tea cultivation was introduced to Sri Lanka in brief.
2. Mark and name five districts where tea is grown on a large scale in a map of Sri Lanka.
3. Mark and name five main countries to which Sri Lanka exports tea in a map of the world.
4. Write three advantages of promoting tea cultivation to the economy of Sri Lanka.

Assignments

1. Write a letter to the Small Tea Estate Development Authority including your suggestions on how to promote the tea industry in Sri Lanka.
2. Design a poster to promote 'Ceylon Tea' in the world.

Coconut Cultivation

The coconut tree is considered a special tree entwined with Sri Lankan folk life. Coconut tree is called the 'Kap Ruka' (Tree of Bounty) because every part of the tree is used in preparation of food, beverages, decorations, furniture, curios/ornaments and animal food. Things taken from coconut tree are used during festive occasions too. For example, coconut flowers and "Gok Kola' (tender leaves). Study Figure 4.4 and identify coconut based products.



Figure 4.4
Coconut based products

Distribution of coconut cultivation

Coconut cultivation is mainly centralized in a few major zones (Map 4.5). Examples are the areas formed as a triangle, joining Colombo, Chilaw and Kurunegala called the "Coconut Triangle", and the area joining Ranna, Middeniya and Tangalle known as the "Minor Coconut Triangle". Except in those areas, coconut cultivation is distributed on the coastal belt from Colombo to Tangalle and also in the areas like Batticaloa and Jaffna. Coconut is grown in home gardens in almost every part of Sri Lanka.



About 28% of the cultivated lands in Sri Lanka is under coconut cultivation, and this land area is placed second only to paddy cultivation. The Coconut Research Institutes at Lunuwila and Embilipitiya have taken steps to expand coconut cultivation.

The physical factors that influence coconut cultivation are as follows;

- Annual rainfall between 2000 mm - 2500 mm.
- Average temperature between 20⁰C - 27⁰C.
- Saline, sandy soil and undulating land
- Availability of labour
- Availability of local and foreign markets

Table 4.3 shows the quantity of coconuts produced in Sri Lanka.

In 2012, out of the lands under cultivation, about 395 000 hectares of land were utilized for coconut cultivation. In 2012, according to the lands cultivated and the nuts produced, Sri Lanka is ranked the fourth among the countries that grow coconut in the world. The income received from coconut cultivation was 65551 million rupees during that year.

Source: Central Bank Report 2012

Table 4.3
The coconut production in Sri Lanka
2008 - 2012

Year	Quantity of nuts (in Millions)
2008	2909
2009	2853
2010	2584
2011	2808
2012	2940

Source: Central Bank Report
(Social Economic Data, 2013)

A large quantity of coconut produced in Sri Lanka is used for local consumption. Therefore, with the growth of population in Sri Lanka there has been an increase in the domestic consumption of coconut.

Activities

1. Mark and name five districts that grow coconut on a large scale in a map of Sri Lanka.
2. Give reasons to explain why the coconut tree is considered the 'Kap Ruka' or the "Tree of Bounty" from ancient times.
3. Draw a bar graph using the data in table 4.3. Express your views about it.
4. List five suggestions you could make to promote coconut cultivation.

Assignments

1. Fill in the table with coconut based products related to various parts of the coconut tree.

Coconut kernel	Coconut shell	Coconut flower	Coconut fronds	Coconut trunk	Coconut husks

2. Prepare a field book on the theme The coconut tree is a Tree of Bounty ('Polgasa Kaprukak') by using pictures, tables, and graphs to illustrate it.
3. Make a few ornaments for your classroom by using raw materials from the coconut tree.

Rubber Cultivation

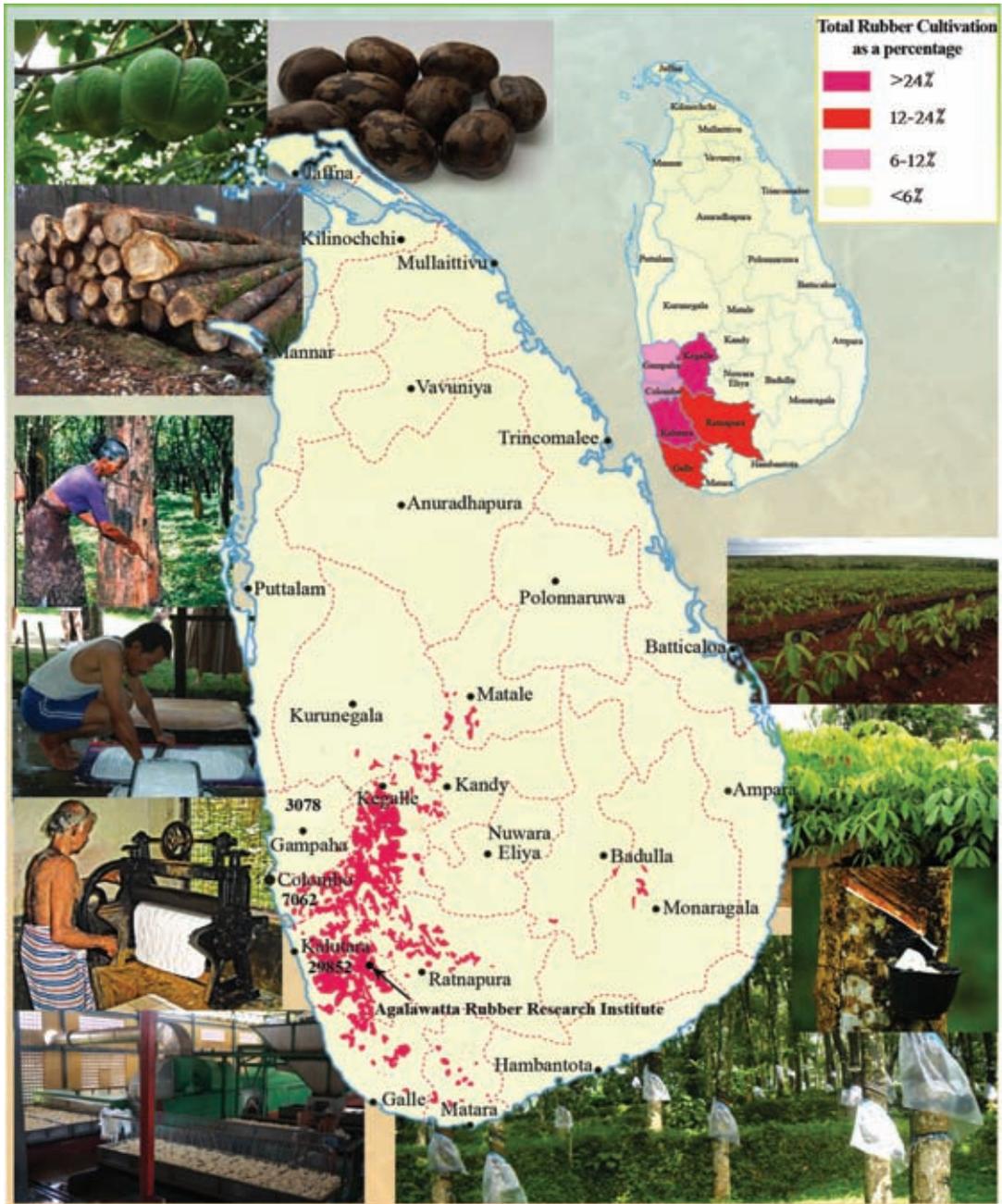
Rubber cultivation which was started as a minor plantation crop in Sri Lanka had expanded to many areas within a short period of time. In 1890, a British national, Sir Henry Wickham planted the first rubber plant in Henerathgoda Gardens in Gampaha. At present, rubber has become one of the main cultivated crops under plantation agriculture in Sri Lanka. Rubber occupies an important place in land utilization in Sri Lanka. It is also important as a source of employment opportunities linked to rubber production and, as a source of good export income. This becomes very clear when you study the following information.

In 2012, the extent of land cultivated with rubber was 131 000 hectares. The production was 152.0 million kilograms. The income earned was 50 255 million rupees.

Source - Central Bank Report - 2012

There was a high demand for rubber during World Wars I and II and that was a reason for the expansion of rubber cultivation and development in production of rubber.

According to Map 4.6, rubber cultivation is mostly distributed in the Wet Zone. It is mostly done in the districts of Kegalle, Rantnapura, Kalutara, Colombo, Gampaha and Galle. It is done on a small scale in the districts of Matale, Kandy, Matara, Badulla, Hambantota and Monaragala. Action has been taken to expand rubber cultivation in the districts of Mullaitivu and Vavuniya.



Map 4.6
Distribution of rubber cultivation in Sri Lanka, rubber products and related human activities

Source : Adapted from Gunasena Philips World Atlas (2009)

Factors affected for the distribution of rubber cultivation in the Wet Zone.

- An annual rainfall of over 2000 mm
- A mean temperature of approximately 27° C
- Laterite soil
- Gentle slopes which are less than 300 m in height
- Skilled labour, transport facilities, international market and local market

Rubber was exported as a raw material to foreign market during the early stages of plantations. However at present, the local industrialists use rubber as a raw material and introduce different products to the market.

Figure 4.5 shows various rubber products.



Figure 4.5
Items manufactured using rubber

The Rubber Research Institute of Sri Lanka is situated at Agalawatta. Research is carried out to improve and expand rubber cultivation. Relevant instructions and expansion services are also provided by this institution. Sri Lankan rubber products are exported to countries in the European Union, (like Austria, Belgium, France, Germany, Greece, Italy) India, China, Japan, Hong Kong, Pakistan and the United States of America.

Activities

1. Where was the first rubber seed planted in Sri Lanka?
2. Explain the economic benefits of developing rubber cultivation.
3. Mark and name five main districts where rubber is cultivated in a map of Sri Lanka. Mark the place where the Rubber Research Institute is located and name it.

Assignments

1. Fill in the table with the products that can be manufactured from the following raw materials of rubber.

Raw material	Products
Concentrated Latex	
Rubber Wood	
Rubber Seed	

2. Design a poster to be exhibited in the classroom showing the uses of a rubber plant.

Minor Export Crops

Minor export crops are the small-scale products for exportation in addition to the main traditional commercial crops.

After 1960s the Government of Sri Lanka has paid special attention to promote the cultivation of minor crops. It is because,

- Traditional exports are subjected to price fluctuation
- It was impossible to depend entirely on traditional exports like tea, coconut and rubber
- Problems arising with regard to foreign exchange earnings

- Increase in demand for minor export crops in the world market
- Cultivation of minor export crops increase the income of local people
- Minor export crops can be grown, in lands not used for tea, rubber and coconut
- Intercropping in lands can be done with minor export crops.
- Create employment opportunities

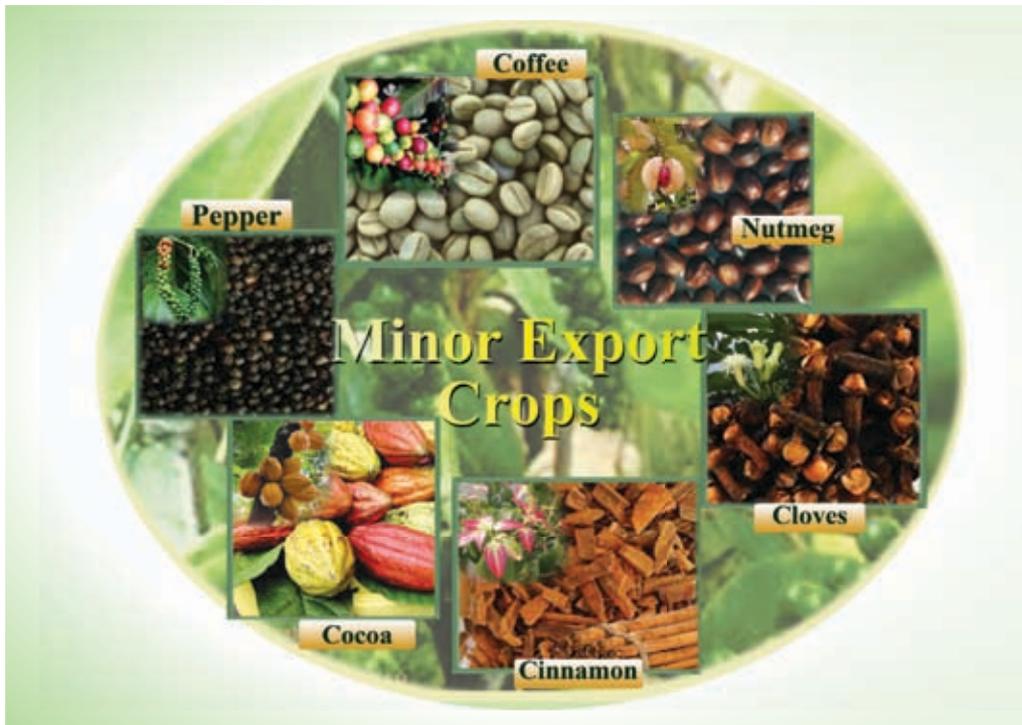


Figure 4.6
Minor Export Crops

After the establishment of the Department of Minor Export Crops in 1972, export crop diversification programme was introduced in Sri Lanka. Under this programme new export crops like flowers, vegetables, chillies, betel, peanuts, ornamental plants and vegetables were added. This was in addition to the export of traditional crops. A great contribution towards this programme was made by the Agro Export Board which was established in 2010. The necessary instructions are given by the Minor Export Crop Research Institute located at Matale.

Table 4.4
The distribution of minor export crops

Minor export crop	Districts/ Areas under cultivation
Cinnamon	Scattered in areas along the coastal belt between Negombo and Matara and in the districts of Ratnapura and Hambantota
Coffee	Kalutara, Ratnapura, Kegalle, Gampaha, Matale, Kandy.
Pepper	Kandy, Matale, Kegalle
Cardamoms	Kandy, Kegalle, Ratnapura, Matale, Matara
Cloves	Matale, Kandy, Kegalle.
Nutmeg	Matale, Kandy, Ratnapura
Cashew	Mannar, Hambantota, Puttalam
Citronella	Matara, Hambantota
Flowers	Nuwara Eliya, Badulla, Bandarawela.

Apart from these gherkins, water melon, banana, maize, dragon fruit, ornamental plants and flowers are grown in home gardens and in Mahaweli Development Zones.

Activities

1. Mark and name the districts in which each minor export crop is cultivated in a map of Sri Lanka.
2. Explain two benefits of cultivating minor export crops.

Assignments

1. Fill in the table with the names of the traditional minor export crops and the non traditional minor export crops of Sri Lanka.

Traditional Minor export crops	Non-traditional minor export crops

2. Prepare a minor export crop garden in your school premises or in your home garden and maintain it.

Vegetables and fruits

The vegetables and fruits that we eat can be cultivated in any part of Sri Lanka. They can be grown in a small plot of land as an intercrop or as a commercial crop or as garden corps.

In the past there were specific areas of Sri Lanka identified for cultivation of vegetables.

Drumsticks (*Murunga*), long beans (*Mekaral*) tomato, brinjals, kekiri, bitter gourd (*karawila*), and pumpkins. → **Dry zone**

Ladies fingers (*Bandakka*), Snake gourd (*Pathola*), lufa (*vatakolu*), long beans → **Wet zone**

Leeks, cabbage, beans, carrot, potatoes, beetroot and knolkhol → **Hill country**



Figure 4.7
Vegetables cultivated in Sri Lanka

However, upcountry vegetables are grown in many parts of Sri Lanka with the advancement of technology at present.

Vegetables are grown on a commercial level in areas like Welimada, Bandarawela, Badulla and Nuwara Eliya under proper management by using both rain water and irrigation systems. A large number of Labourers are employed in this venture and organic manure from the animal farms is used in vegetable cultivation.

Other than that, vegetables are grown on a large scale for local and foreign markets in districts such as Badulla, Matale, Kandy, Hambantota, Anuradhapura, Moneragala, Ampara and Jaffna.

Fruits

Fruits which are essential for a healthy life are grown in many areas in an organised manner since recent times. There is a local as well as a foreign market for Sri Lankan fruits. Bananas, pineapples, mangoes, passion fruit, oranges, grapes, papaw, and

avocados are some of the fruits which are grown on a commercial basis. Bananas are grown in Hambantota, Moneragala and Ratnapura districts. Pears, grapes and strawberries are grown in Nuwara Eliya, Badulla and Jaffna districts. Other than that fruits are grown in almost all other areas in the country for consumption. These fruits are exported as fresh fruits, canned sliced fruits, pieces, and dehydrated fruits.



Figure 4.8
Fruits cultivated in Sri Lanka

Activities

1. Name the fruits and vegetables grown in abundance in Nuwara Eliya, Hambantota, Anuradhapura, Badulla and Moneragala districts.
2. Give your suggestions to promote the cultivation of local vegetables and fruits and to improve the industries linked to them.

Assignments

1. Make some plots of vegetables and fruits in your home garden or school premises to make the land more beautiful and useful and maintain them.
2. Prepare a list of by-products which can be produced with fruits.
3. Collect information about the methods of preserving fruits and present them.

Livestock Farming

Livestock farming is a process related to agriculture. Special attention has been paid on livestock farming in Sri Lanka from recent times, for the following purposes.

- For the upliftment of nutrition of the people.
- Providing employment opportunities for people in rural areas.
- To get maximum use of marginal lands that cannot be cultivated.
- To provide an additional income for farming communities.
- To provide organic manure for agriculture.
- To earn and save foreign currency.

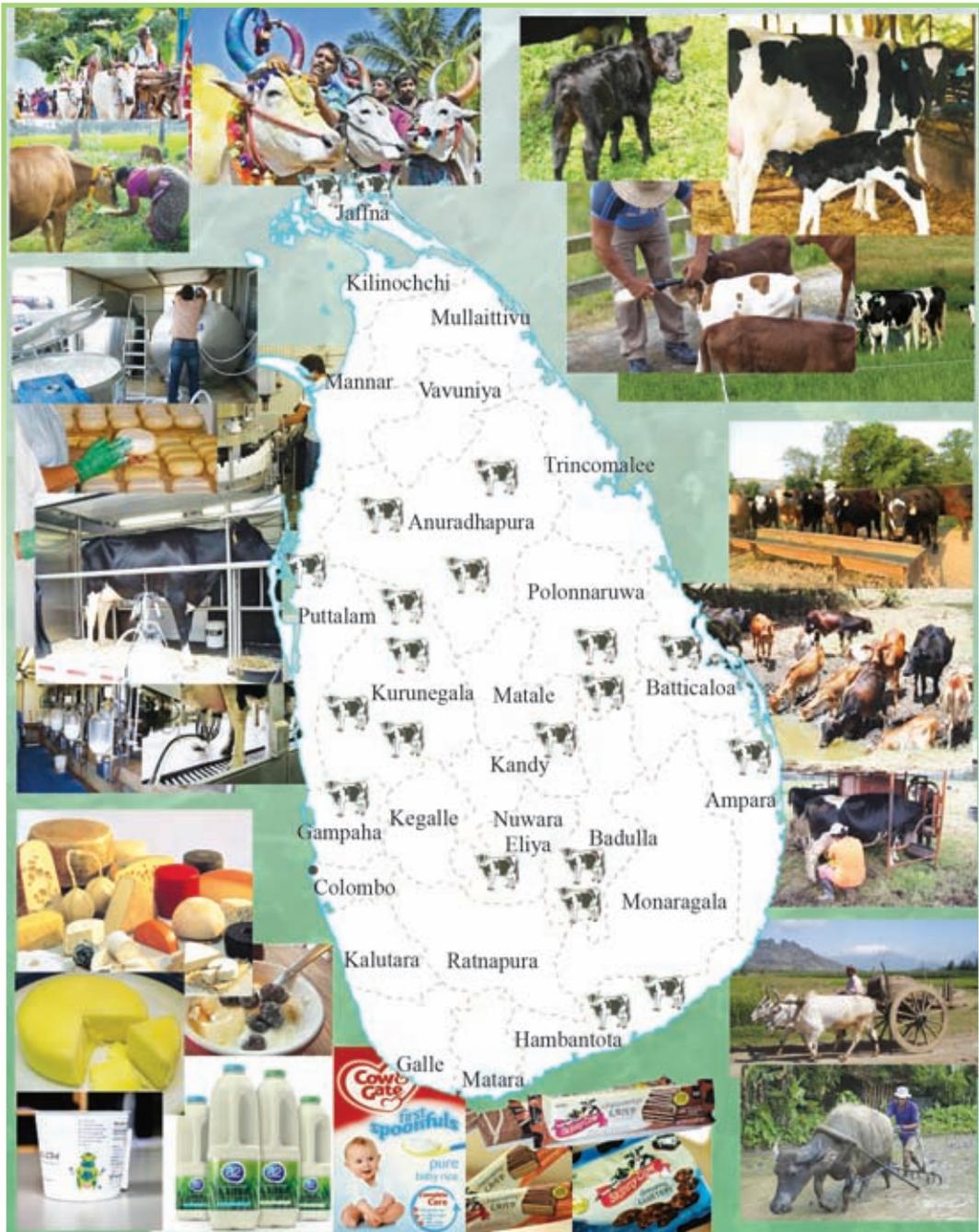
Under livestock farming, attention is focussed only on dairy farming in this lesson.

Dairy Farming

The need for improving the local production of milk has arisen in order to save the foreign exchange spent on the import of milk powder and to develop adequate nutrition levels of Sri Lankans. Therefore, the Sri Lankan Government and the people have focused their attention on dairy farming.

Cattle rearing is mainly done in areas such as Nuwara Eliya, Badulla, Polonnaruwa, Hambantota, Ampara, Anuradhapura, Kurunegala and Batticaloa. About 2/3 of the buffaloes are reared in the areas of Dry Zone in Sri Lanka.

Research institutions at Ambewela, Kananwila, and Walpita have introduced new breeds of cattle and new varieties of grass as well as provided instructions when necessary. 'Meevanapalana' Dairy Cattle centre has been set up to exchange lactating cows.



Map 4.7

Areas of Sri Lanka where milk production is carried out, dairy products and related human activities

Source: Susara Map Book (2011)

Milk Products

Production of liquid milk has become popular recently in Sri Lanka and Figure 4.9 shows some of the milk products.



Figure 4.9
Some milk products

Activities

1. Mark and name three districts where dairy farming is carried out on an outline map of Sri Lanka.
2. Explain the steps taken by the Government to promote milk products in Sri Lanka.
3. Explain with examples, the advantages of promoting dairy farming in Sri Lanka.

Assignment

Prepare a list of milk products of Sri Lanka.

Fisheries Industry

Fisheries industry can be considered as an important sector of the economy of Sri Lanka. Many factors favourable for fisheries industry are found in Sri Lanka. They are as follows.

- Sri Lanka being an island surrounded by the ocean.
- A long coastline around the island.
- A wide continental shelf
- Location of bays, lagoons and harbours
- The presence of rivers, canals, streams, tanks and reservoirs
- Plenty of plankton during the monsoons due to the activation of ocean currents.



Map 4.8
The Exclusive Economic Zone of Sri Lanka
 Source : Gunasena Philips World Atlas (2003)



Importance of Fishing industry

- To provide required amount of protein for people.
- Existence of a wide local and foreign market for fisheries products
- Provision of employment opportunities
- Ability to earn foreign currency by selling fisheries products.
- Availability of resources to improve the fisheries industry.

Hence the fisheries industry can be considered as an important part of the economy of Sri Lanka.

The fisheries industry can be categorized into three parts according to the regions where it is distributed.

1. Marine water fisheries
2. Fresh water fisheries
3. Brackish water fisheries

Marine fisheries industry (Ocean fishing)

Fishing in the Exclusive Economic Zone is called "Marine Fishing". It has two main sectors.

- Fishing in coastal sea or in the continental shelf
- Deep sea fishing

Fishing in the coastal sea

The largest quantity of fish is obtained from the coastal sea. Fishing industry is distributed widely from Mannar to Hambantota and Batticaloa to Jaffna in the shallow sea. The reasons for the abundance of fish in the shallow sea are given below.

- Availability of plankton for fish in abundance.
- Organic particles brought by the rivers, streams and canals have deposited in the coastal areas.
- Fish food at the bottom of the sea is brought to the surface water by the action of ocean currents.

As a result plenty of small fish such as *Salaya*, *Sprat*, *Herring*, *Etawalla*, *Sudaya*, *Mullet* and *Alagoduwa* are bred in this coastal area,

Deep sea fishing industry

Large fish such as *Thalapath* (Sword fish), *Thora* (seer), *Mora* (Shark), *Koppara*, *Kelawalla*, *Balaya* (tuna) are caught in the deep sea. Deep sea fishing is done under state patronage as well as under private enterprise. Various kinds of fishing gear (tackle) is used to harvest such kinds of fish. Figure 4.10 shows such tackle.



Figure 4.10
Tackle used in the fishing industry

Fresh water fishing industry

Fresh water fishing comprises fishing in inland water bodies such as rivers, streams, canals, tanks and ponds in Sri Lanka. Fish such as Lula, *Kanaya*, *Magura*, *Koraliya*, *Godaya*, *Hunga*, *Maspetiya*, *Kavaiya*, *Thadalaya* are important varieties of fresh water fish.

Fish such as Grass Carp, Big head Carp, Silver Carp, Catla, Rohu, Tilapia and Gurami are being bred at present in tanks and ponds. Breeding of ornamental fish and aquaculture for fish food are done under fresh water fishing industry.



Figure 4.11
Fresh water fish of Sri Lanka

Brackish water fishing industry

Brackish water fishing is carried out in many places along the coast which is about 1760km in length. The main areas where brackish water fishing is carried out are Jaffna, Puttalam, Mundala, Chilaw, Negombo, Polwatta river, Malala lagoon and Arugam Bay. Estuaries and lagoons are the most suitable places for brackish water fishing as there is both sea water and fresh water in those areas. Existence of mangroves and organic matter brought by rivers, streams and canals have contributed for the abundant breeding of fish that can withstand changes in salinity. In places like Chilaw, Negombo and Puttalam, prawns and crabs are bred on a commercial scale. Multi National Companies provide aid to breed prawns at present.

Brackish water fish



Figure 4.12
Brackish water fish of Sri Lanka

Activities

1. List three advantages and disadvantages of brackish water fishing.
2. Describe three steps taken by the Government to uplift the fisheries industry.

Assignment

Prepare a leaflet to create awareness among people about the importance of developing the fisheries industry for the economy of Sri Lanka.

New Trends and issues pertaining to Agriculture in Sri Lanka.

There are many issues related to agriculture in Sri Lanka. They can be categorized as problems related to land use, production, trade and environmental issues.

Issues related to land utilization

- Scarcity of lands and fragmentation (Eg :- in relation to paddy, tea, coconut and rubber land).
- Reclamation of paddy land.
- Using agricultural land for other purposes
(Eg :- coconut and rubber lands being blocked out in small plots).
- Lands being used for construction of houses and for other development purposes due to the rapid increase of population.
- Lower harvest due to cultivation of crops in the same land for a long period of time (Eg :- paddy, tea, coconut and rubber land).

Issues in production

- Low yields due to use of land over a long period
(Eg :- tea, rubber, coconut).
- Inability to use machinery due to land fragmentation.
- Lower yield per unit of land
(Eg :- paddy, tea, minor export crops).
- Scarcity of water in the dry zone, excess water in the wet zone.
- Increase in the prices of fertilizer (Eg :- paddy).
- Scarcity of skilled labour and the unwillingness of the younger generation to get involved in jobs related to agriculture.
- Using harmful equipment and using harmful methods (Eg :- to catch fish in the fisheries industry).
- Production cost is higher and the farmers become indebted.
- Factories not being modernized
(Eg :- tea and rubber factories).

- Excessive cost of new breeds of cows and high cost of maintenance and food (Eg :- in dairy farming).
- Increase in the cost of fishing boats, fishing tackle, cold storage and fuel prices (Eg :- fisheries industry).
- Insufficient storage facilities and cold storage facilities.
(Eg :- paddy, vegetables, fish, fruits, milk)
- Provision of subsidies being irregular.
- Difficulty in obtaining credit facilities as there are problems in the ownership of land (Eg :- minor export crops).
- Insufficient transport facilities (Eg :- fish, milk, vegetables and fruit)
- Labour problems regarding Trade Unions (Eg :- regarding tea, coconut and rubber).
- Lack of technological knowledge and labour skills.
- Increased cost of machinery .
- Due to the use of seeds of low standard , production falls short of market demands (Eg :- vegetables and fruits).

Issues related to trade

- Insufficient purchasing centers
(Eg :- paddy, vegetables, fruits, milk).
- Existence of non stable price in local and foreign markets.
- Increase in local consumption has resulted in a limiting exports.
(Eg :- paddy, coconut)
- The income of farmers has decreased because of intermediaries
(Eg :- paddy, vegetables, fruit, milk)
- Price fluctuations in the international market.
- Challenge from substitutes.
Eg :- Rubber - Synthetic rubber
Tea - Other beverages
- Challenge from other countries
Eg :- Tea - Kenya
Rubber - Malaysia
- Low quality goods being exported to the international market.
(Eg :- blending other varieties of tea with Sri Lankan tea)

Environmental Issues

- Facing epidemics and diseases caused by insects.
 - Eg :- Coconut - diseases by beetles, mite attacks.
 - Vegetables and Fruits - by mealy bugs
 - Dairy farming - hoof and mouth disease
- Destruction of crops due to floods, land slides, droughts, heavy rain
- Problems created in the fishing industry through cyclones, ocean currents and Tsunami conditions.
- Health problems occur because of the pollution of water, land and air due to use of fertilizers, insecticides and weedicides.
- Extinction of animals and plants essential for the existence of the eco system.
- Releasing parts of plants and animals harmful to the environment

Trends in Agriculture

Trends in production

- Provision of subsidies to increase production.
- Diversification of agricultural products.
 - Eg :- Tea - instant tea, green tea, cordial
 - Coconut - diverse ornamental products.
 - Rice - flour, noodles, sweetmeats
- Increase in local consumption
(Eg :- coconut, vegetables, fruits, milk, fish)
- Introduction of intercropping related to agricultural crops.
 - Eg :- cultivation of pineapple, betel, passion fruit and pepper in coconut land, cultivation of coffee, cinnamon and pepper in rubber land.
- Research institutes have introduced new seeds that would resist droughts and floods. They also have introduced seeds which produce a higher yield by using gene technology and cloning.
 - Eg :- in paddy cultivation,
 - BG 407, BG 450, AT 307 Ma Vee (a variety of paddy)
 - In coconut cultivation,
 - Kap Setha (CRISL 2013), Kap Suvaya (CRISL 2012)
 - (Coconut Research Institute of Sri Lanka)

- Using new land for cultivation
(Eg :- rubber cultivation in Vavuniya, Mullaitivu
Coconut cultivation - Dry zone areas)
- Promoting the use of organic fertilizers
(Eg :- The establishment of Organic Fertilizer Centre at Gonawala,
Makandura in Kurunegala district)

Trends in technology

- Using machinery with modern technology
(Eg :- in paddy cultivation - machines are used for planting
seeds, fanning and threshing (Combine harvester)
Fishing industry - using techniques such as echo sounder, sonar
system, satellites and GPS technology)
- Increase of mechanization in livestock farming.
- Introducing new methods in tapping rubber.

Trends in trade

- Processing agricultural products to attract consumers.
- Using new packaging methods.
(Eg :- as packets, canning and making attractive bags)
- Emergence of private companies in commercial production
(Eg :- Milco, Nestle, Kothmale)

Government patronage for agriculture

- Provision of export tax concessions.
- Expansion of market services.
- Provision of subsidies for fertilizer.
(Eg :- paddy, tea, rubber, minor export crops)
- Provision of subsidies to replant crops
(Eg :- tea, coconut, rubber, cinnamon)
- Establishment of training centers
(Eg :- Matale - for minor export crops
Gannoruwa, Bata Atha - Agro - Technological Park
Agunakolapellasa - For legumes (Mansha Boga)

- Introduction of pension schemes and insurance systems.
- Expansion of distribution services.
- Establishing export villages

Eg :- Paddy - Pollonnaruwa and Kurunegala

Cashew - Damabadeniya

Betel - Katugampola

Chillies - Rajangana

- Introducing programmes on landscaping based on agricultural crops to beautify home gardens and other lands.
- Introducing programmes such as, 'Divi Naguma' and 'Gami Diriya' to uplift agriculture.

Activities

1. a). Write four problems that can come up when using technology for paddy cultivation.
b). Present your suggestions to get those problems solved.
2. Fill in the following table with three pertaining and trends related to agriculture for each of the following crops cultivated.

Cultivation	Problems	Trends
Paddy		
Tea		
Coconut		
Rubber		
Minor export crops		

3. Write four suggestions to minimize the issues pertaining to dairy farming.

Assignment

Use magazines, news papers and other sources and prepare a report stating the steps taken by the government to solve problems related to agriculture.

Importance of agriculture in the Sri Lankan economy

Agriculture has an important place in the Sri Lankan economy. There are few reasons for this

- Agricultural sector contributes 11.1% to the Gross National Product.

- The Agricultural sector contributes 24% for the export income.
- 31% of the labour force is involved in employment in the agricultural sector
- A major portion of land utilization is used for agricultural crops in Sri Lanka.
- Provision of raw materials for industries and production of food.

The growth of agricultural sector is 5.8% in 2012

Source : (Central Bank Report - 2012)

Contribution to Gross National Product (GNP)

Contribution to Gross National Product by the agricultural sector is 11.1% in year 2012 .The composition is shown in Table 4.5

Table 4.5

Contribution to Gross National Product from the agricultural sector - 2012

Sector	Contribution to Gross National product (%)
Agricultural sector	11.1
1. Agriculture, Livestock resources and forest products like timber	9.8
• Tea	0.9
• Rubber	0.2
• Coconut	1.0
• Minor export crops	0.4
• Paddy	1.5
• Livestock	0.8
• Other food crops	3.7
• Estate development	0.3
• Timber and forest resources	0.6
• Other agricultural products	0.4
Fisheries industry	1.3

Source : Central Bank Report - 2012

Activities

1. Which sectors of Sri Lankan agriculture give the highest and the lowest contribution to the Gross National Product in Sri Lanka.
2. Write the steps taken by the Government at present to increase the income of agricultural sector.
3. Discuss two steps that can be taken further to develop the fisheries industry in Sri Lanka.

Contribution to the labour force

Sri Lanka is an agricultural country. By 2012, the labour force involved in agricultural activities was 31%. It is clear that 1/3 of the total labour force of Sri Lanka are engaged in employment under the agricultural sector. It is shown in Figure 4.6

Figure 4.6

Employment of Sri Lanka in 2012 (%)

Section	2012
Agriculture	31.0%
Industries	26.1%
Services	42.9%

Source - Central Bank Report 2012

Employment opportunities in the agricultural sector can be categorized as follows; those related to tea, coconut and rubber estates and paddy cultivation, in the production of rice flour, noodles and sweetmeats, in the processing industries related to minor export crops, in processing coconut products and in the fisheries industry. As new employment opportunities are created in the agricultural sector, much attention is paid on it by the Government too.

When considering contribution of the Sri Lankan agricultural sector to the export income, the importance of this sector becomes prominent. Table 4.7 shows the composition of agricultural export in year 2012. According to this table, 1/4 or 24% of the export income of Sri Lanka is earned by the agricultural sector. Tea, spices and coconut are among the major export crops.

Table 4.7

Composition of Agricultural exports of Sri Lanka - 2012

Category	Value in Dollar Million	Contribution (%)
Tea	1411.9	14.4
Rubber	125.1	1.3
Coconut	208.9	2.1
Spices	256.1	2.6
Vegetables	13.3	0.1
Tobacco - unprocessed	42.2	0.4
Sea food	198.0	2.0
Agricultural exports	76.0	0.8
Total	2331.5	23.9

Source - Central Bank Report 2012

Activities

1. Complete the table including new employment opportunities related to agriculture.

Field	New Employment Opportunities
Paddy Cultivation Tea Coconut Fisheries	

2. What are the reasons for the reduction of the labour force related to agricultural sector in Sri Lanka?
3. Write two suggestions to overcome those reasons.
4. Explain with examples, the importance of the agricultural sector for the economy in Sri Lanka.

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Glossary

Cash crops	- වෙළෙඳ හෝග	- පණ්ඨාපයිර්කල්
By products	- අතුරු නිෂ්පාදන	- උප උත්පාදන
Organic fertilizer	- කාබනික පොහොර	- ජෛව උරුක
Terraced Cultivation	- හෙල්මළු වගාව	- පාදකුණු පායිර්සේශ්ක
Agro Ecological Zones	- කෘෂි පාරිසරික කලාප	- ව්‍යවසාය උපායිර්සේශ්ක වලයකල්
Agro Research Institute	- කෘෂි පර්යේෂණ ආයතනය	- ව්‍යවසාය ආරායිර්සේශ්ක නිරුක
Tea Board	- තේ මණ්ඩලය	- තේ ව්‍යවසාය
Concentration	- සංකේන්ද්‍රණය	- සේශ්ක

Small Tea Estate Development Authority	- කුඩා තේ වතු සංවර්ධන අධිකාරිය	- சிற்றுடமை பெருந்தோட்ட அபிவிருத்தி அதிகாரசபை
Quality	- ගුණාත්මකභාවය	- தரம்
Coconut Triangle	- පොල් ත්‍රිකෝණය	- தெங்கு முக்கோணம்
Minor Coconut Triangle	- සුළු පොල් ත්‍රිකෝණය	- சிறிய தெங்கு முக்கோணம்
Domestic consumption	- ගෘහස්ථ පරිභෝජනය	- உள்ளநாட்டு நுகர்வு
Research	- පර්යේෂණ	- ஆராய்ச்சி (பரிசோதனை)
Minor export	- සාම්ප්‍රදායික අපනයනය	- மரபுரீதியான ஏற்றுமதி
Minor export crops	- සුළු අපනයන හෝග	- சிறிய ஏற்றுமதிப் பயிர்கள்
Export Crops Diversification	- අපනයන හෝග විවිධාංගීකරණය	- ஏற்றுமதிப் பயிர்களின் பன்முகப்படுத்தல்
Agro Export Board	- කෘෂි අපනයන මණ්ඩලය	- விவசாய ஏற்றுமதிச்சபை
Dairy Farming	- කිරිපිටි පාලනය	- பாற்பண்ணை
Sterilized	- ජීවානුහරණය	- தொற்று நீக்கப்பட்ட
Dehydration	- විජලනය	- நீரகற்றல்
Currents	- දියවැල්	- நீரோட்டங்கள்/துடிப்புக்கள்
Exclusive Economic Zone	- අනන්‍ය ආර්ථික කලාපය	- தனித்துவமான பொருள்
Plankton	- ජලවාග	- பிளாங்க்டன் தாவர வலயம்
Aquaculture	- ජලජීවී වගාව	- மீன்வளர்ப்பு
Potential sources	- විභව සම්පත්	- உள்ளார்ந்த மூலங்கள்
Sea Water Fisheries	- කරදිය ධීවර කර්මාන්තය	- கடல்நீர் மீன்பிடிக்கைத்தொழில்
Fresh Water Fisheries	- මිරිදිය ධීවර කර්මාන්තය	- நன்னீர் மீன்பிடிக்கைத்தொழில்
Brackish Water Fisheries	- කිවුල් දිය ධීවර කර්මාන්තය	- உவர் நீர் மீன்பிடிக்கைத்தொழில்
Land utilization	- භූමි පරිභෝජනය	- நிலப் பயன்பாடு
Fixed price	- ස්ථාවර මිල	- நிலையான விலை
Price fluctuation	- මිල උච්චාවචනය	- விலைத்தளம்பல்
Labour force	- ශ්‍රම බලකාය	- தொழிலாளர் படை
Organic matter	- ඓතිහාසික ද්‍රව්‍ය	- சேதனத் துணிக்கைகள்