

2



AGRICULTURE - CROPS

2.1. Observe the pictures and discuss



- What are people in the picture doing? Which crop did they grow?
- State the different stages in the cultivation of the crop shown?
- Whose services are needed in the cultivation of this crop? What are the tools used for it?
- Where are the seedlings brought from? How are they processed?
- What is agriculture? What are things required for doing agriculture?

You are aware that the process of growing crops is called agriculture. There are different stages involved in agriculture, right from the ploughing of land to the final harvesting of crop. We have to till the land, arrange for water sources and services of different people. We also need to use different farm equipments in the different stages of cultivation.

Group work



- ◆ What happens if farmers stop cultivation?
- ◆ Who are the people dependent on agriculture? How?
- ◆ What are the different crops grown in your village/city?
- ◆ Do your villagers consume the entire crop yield produced in your village?
- ◆ What do the farmers do with their yield?

We all get our food because of farmers growing crops. People living in villages and cities depend on farmers for their food needs. People in cities can get the required food items because farmers are growing crops and sending them to cities. If people in villages do not export their crops to other places, then people in cities do not get food to eat. There are efforts of many people behind the food we eat. We must visit the farmers nearby to know how hard they work.

Collect and discuss...



- ◆ Visit nearby farm and get the following details:
 1. Name of the farmer
 2. Name of the crop he/she is cultivating at present
 3. What is the source of water?
 4. What are the different equipments/ tools they use?
 5. Where do they get the seedlings or seeds from?
 6. Name the different fertilisers they use
 7. What do they do with the yield?
 8. How many acres are being cultivated and what is the net income?
 9. Women's role in agriculture
- ◆ On the basis of the information collected by you, discuss in groups and display the information on charts.

2.2. Agricultural equipment/ tools

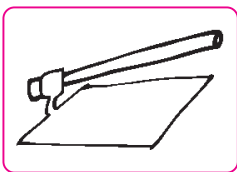
Equipment plays an important role in cultivation. Look at the pictures of some tools and machinery given below.



Plough



Harrow



Spade



Sickle



Crowbar



Plantation Machine



Harvesting Machine



Paddy Cutting Machine

Plough was used to till the field in the past. Now, tractors are used for tilling the land. Now-a-days farm machinery is available for land preparation, planting of seedlings, weeding and harvesting. The use of machinery helps farmers in reducing manual labour and speeding up the process of cultivation.

Group work



- ♦ Is it good or bad to use machinery for cultivation? Give reasons.
- ♦ Draw the pictures of other tools that farmers use in cultivation.
- ♦ List out the equipment/ tools that farmers used in the past and those being used presently.

Name of the agricultural activity	Equipment/ tools	
	In the past	In the present
Ploughing	Plough	Tractor
Levelling		
Sowing seeds / planting seedlings		
Drawing water from borewell / well		
Weeding / Harvesting		

2.3. Seeds

Ramulu went to the market to buy cotton seeds. He saw people standing in queues in front of the shops to buy seeds. He also joined one of the queues and purchased the seeds. He sowed them in his field. The crop was good but the yield was not.



Group work



- ♦ What could be the reason for Ramulu not getting a good yield?
- ♦ What is the reason for the crowding in the picture? Why did it happen?
- ♦ Why is there a shortage of seeds? What are the other problems that the farmers face?
- ♦ How did the farmers get the seeds in the past?
- ♦ Where do farmers of your village get seeds from?

Some of the seed companies are deceiving farmers by selling sub standard seeds which do not germinate or some times don't give a proper yield.

In olden days, farmers used to preserve certain good quality seeds from the yield to be used for the next crop. Today people are dependent on markets because High Yielding Varieties are available and discarded their traditional seed preservation practices. When all the farmers depend on market for the seeds, they are unable to get the required quantity of seeds. Farmers used to borrow seeds from their neighbours. After the yield, they used to return more seeds than they borrowed. This method is called "Nagulu".

Think and say...

- ♦ What can the farmers do to avoid dependence on the government or market for seeds?
- ♦ Name some varieties of rice you know
- ♦ Name the famous varieties of mango?

Do you know?

We had 5400 varieties of rice, 740 varieties of mango and 3500 varieties of brinjal in our state upto a few decades ago. As farmers discarded the traditional way of seed preservation and due to no market value, most of the traditional seeds have disappeared.

In our country "the National Bureau of Plant Genetics" collects and preserves genes of different plants.

2.4. Sustainable Farming

Mallesh is cultivating 10 acres of land. He is doing sustained farming without depending on others for seeds and fertilizers. He is cultivating mulberry in 5 acres, maize in half an acre and crops like ginger and turmeric in another half an acre as intercrops. He is growing green fodder in 3 acres. He is also cultivating vegetables like brinjal, tomato and flower varieties like, jasmine, marigold and roses in one acre. He is preparing compost and vermicompost with the help of earthworms. He is also preparing insecticides from neem oil and



Dairy Farm

other such products. He has raised his crop production by using organic fertilisers and organic insecticides. Panchagavya is a manure in a liquid form. It is not only a manure but also a pesticide. Panchagavya is prepared by using cow dung, urine, milk, curd, ghee, banana, coconut water and jaggery. All these are mixed with water and sprayed in the field. Along with panchagavya he is also using another manure called jivamruth, which is used as manure and also helps in increasing micro organisms that make the soil fertile. Jivamruth is made using cow dung, urine, soil, jaggery, pulses powder and water.

Further, he has a dairy farm with 10 cows, a poultry farm and also rears silk worms on his farm. In his poultry farm, he has been rearing layers for eggs and broilers for meat. There is a pond near the dairy farm in which he grows fish. He is also rearing ducks and country chickens in his farm. Mallesh's income has increased due to the cultivation of different crops in addition to dairy and poultry. Mallesh says that if we cultivate monocrops not only the fertility of the soil will reduce but also the yield. Due to his different practices, he earns more money, and also provides employment to others.

Do you know?

The growing of more than one crop in the same place and at the same time is called intercropping.



Poultry Farm

Group work



- ◆ How could Mallesh get more yield in his farm?
- ◆ What is he doing to protect the crops from insects?
- ◆ Why did he cultivate intercrops in his farm? Why did he rear ducks, poultry and cows in his farm?
- ◆ According to Mallesh, is farming a good or a bad profession? Why?
- ◆ What is your opinion on Mallesh's agricultural practices?

2.5. The Success Story of a Woman Farmer



Women also cultivate crops like men, do you know Gangawar Manemma, a successful human agriculturist. Now, read what she says about her farming.

My name is Gangawar Manemma. I belong to Gangawar village in Nyalkal Mandal of Sangareddy district. We have 3 acres of land. It is red soil and we left

it barren for many years. No crop grew in that land. When it rained we could grow jowar and millets. But my life changed ever since I joined the Deccan Development society (DDS) as a member.

We faced a lot of problems in buying seeds, cultivation and selling our farm products in the market. We could not understand anything about the process. We were always at loss growing some crop or the other. When we joined the society we could procure the required seeds for our crop. We minimised the expenditure in cultivation, preparing the manure required for our crops and yielded good quantity. Now we are following the conventional methods of cultivation. With limited water resources, we grow redgram, jowar, millets, greengram, horsegram, foxtail millet, mustard, sorghum, pigeonpea, cowpea, and groundnuts. These crops do not consume much water. We prepare bio fertilisers using cowdung, neem leaves and neem bark available in our fields. Due to these biofertilisers, we are able to reduce diseases and increase the soil fertility. We are able to produce food grains required for our family, in addition to preserving the seeds for the next crop. We are following the traditional methods in selection of seeds. We select the strong and well grown plants and preserve their seeds. We preserve the seeds by adding ash and neem leaves, so that they can be protected from insects. We follow mixed crop cultivation so that we can produce more and earn more. We exchange seeds with one another and treat our land as Mother Goddess. We spend most of our time in our farms rather than at home.

Like Manemma many people are now following the traditional way of farming by preserving their own seeds. The Deccan Development Society supports poor farmers in practising sustainable cultivation in the surroundings of Zaheerabad in Sangareddy district. They could revive a variety of traditional crops by following the conventional practices. Zaheerabad farmers say that biodiversity flourishes with the cultivation of millets.

Group work



- ◆ What good practices of cultivations did Manemma follow?
- ◆ Who helped Mannema? How did they help her?
- ◆ Should we appreciate Mannemma? Why?

2.6. Pesticides

Ramulu's daughter, Vasantha is in class-V. She went to the market along with her grandmother to buy fruits. Grandmother bought grapes for Vasantha. Vasantha started eating the grapes as soon as grandmother gave her. Grandma warned Vasantha not to eat any fruit without washing.

Think and answer

- ◆ Why should we wash fruits? What are the other items we should wash before eating?

Farmers spray pesticides to protect crops from insects and to get a good yield. Due to the over use of pesticides, the insects are becoming resistant. This also leads to food poisoning. Eating food items which are exposed to excess pesticides may cause cancer and other diseases.

Instead of using chemical pesticides it would be better to use biopesticides which are made of different organic materials like green chilli, garlic and neem oil, tobacco decoctions, vitex, panchagavya etc.



Use of chemical pesticides may increase the crop production for sometime but it kills useful insects along with the harmful ones. Soil fertility decreases gradually with the usage of chemical fertilizers and pesticides. It also increases soil and atmospheric pollution.

Think and say...

- ♦ What are the other disadvantages of using chemical pesticides?
- ♦ What are bio-pesticides? Why should we use them?

2.7. Kinds of Crops

Different kinds of crops are grown in our state. Rice, wheat, jowar, maize, pulses, oilseeds, vegetables and fruits are some of the crops grown. They are called 'food crops'. Cotton, jute and mirchi are also grown. They are called 'commercial or cash crops'.

Group work



- ♦ Prepare a list of crops that are grown in your village/around your city.
- ♦ What crops are not grown in your village? What food items do you get from other places? Why are such items not grown locally? Say and write the reasons.
- ♦ What is the time duration for various crops to grow and yield?

We can see the same crop in different varieties. In jowar, we see yellow and white variety. Similarly, there are many varieties in paddy, chilli and redgram. Read the following table.

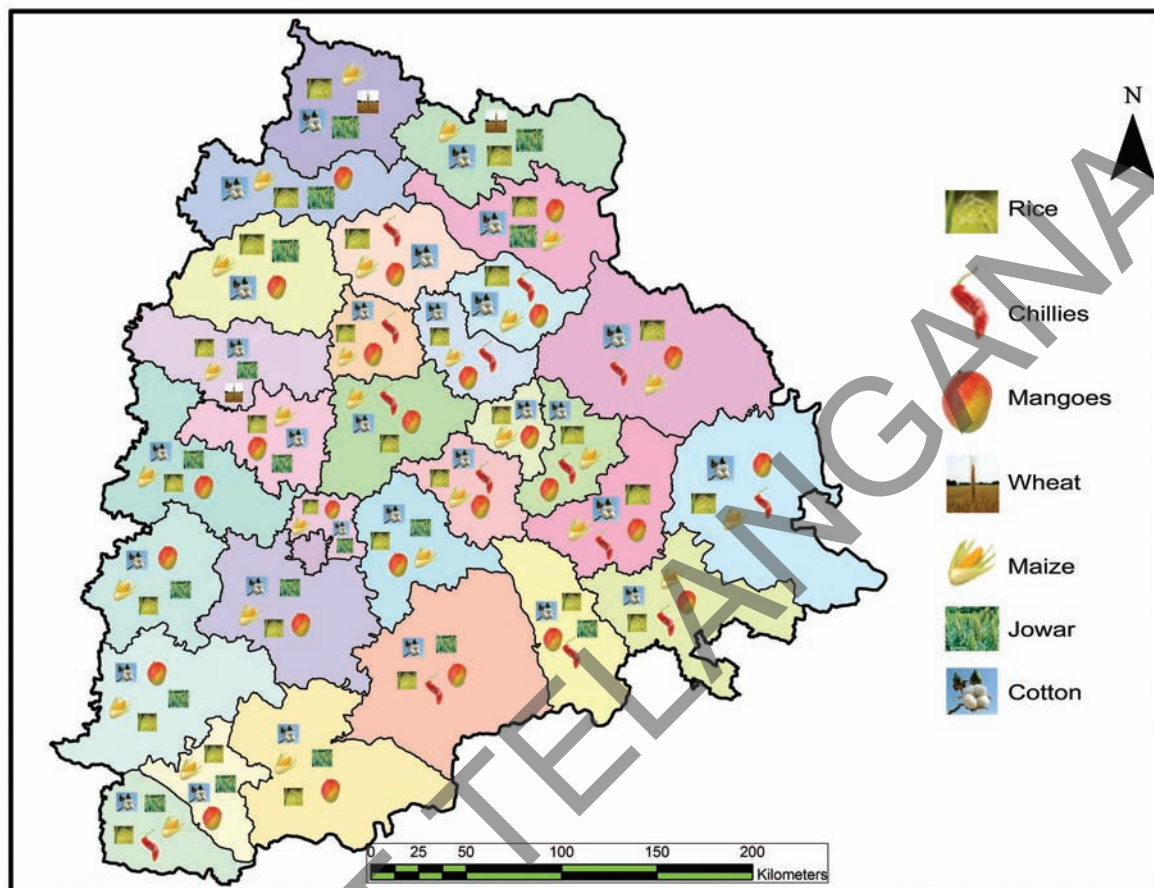
Sl.No.	Crop	Varieties
1	Paddy	IR20, Hamsa, Swarna, Masoori, Bangarutheega, Samba
2	Redgram	Redgram, Blackgram, Asha, Nadipi

Different crops need different climatic conditions to grow. The duration also differs from crop to crop. In some cases it takes two or three months, in others it takes 6 months. Rice, Jowar, groundnut take 4 months. Rice needs more water, where as jowar and groundnut need less water. Jowar and groundnut are rain fed crops. Crop period for redgram is 6 months. It is also a rainfed crop. What are the different crops grown in your village/around your city. Collect the details and fill the following table.

Sl.No.	Name of the crop	Crop period	Water facility/ rainfed crops / crops requiring more water

2.8. Places where different crops are cultivated in Telangana

You have read about the different crops that are grown in our state. The details of the different crops grown in different districts are given below.



Group work



◆ List out the district wise crops on the basis of the above map.

Sl.No.	Crops	District where the crops are grown
1.	Rice	
2.	Jowar	
3.	Cotton	
4.	Mirchi	
5.	Mango	
6.	Coconut	
7.	Wheat	
8.	Maize	

Keywords

agriculture

seeds

poultry farm

stages in cultivation

shortage of seeds

dairy farm

agricultural equipment

crop production

agricultural practices

water facility

sustainable agriculture

pesticides



What have we learnt?



1. Conceptual Understanding

- What is cultivation?
- What are the modern equipments that are used in cultivation?
- Give examples for crops that need less water.
- It's not good to use chemical fertilisers. Why?
- What are bio-fertilisers? Why should we use only them?
- What are the advantages of preserving seeds?
- Agriculture is a good profession. Justify.

2. Questioning and Hypothesis

- What questions would you ask a farmer to know details about a crop grown in your village?
- Frame few questions on the usage of machinery in farming.

3. Experiments - Field Observations

- Buy some fruits from the market. Wash the fruits in a bowl and observe the water. Tell your observation points.
- Sow the seeds of jowar, millets, red gram and ground nut in a broken pot / flowerpot. Observe the growth of the plants. Find out the height of each plant and write in your notebook.

4. Information Skills, Projects

- Meet farmers in your locality and collect the following information and fill the table

Sl.No.	Name of the farmer	Crops Grown	Fertilisers used	Chemicals sprayed	Farm equipment used	Farmers opinion on the crop

- What crops did they grow more?
 - What fertilisers did they use more?
 - Name the equipment used by more number of farmers.
 - Name the pesticides that are used less by farmers.
 - Collect the opinions of farmers on cultivation.
- b) Meet the farmers in your locality and prepare a report on the problems they are facing in agriculture.

5. Communication through Mapping Skills, Drawing Pictures and Making Models

Answer the following questions on crops with reference to the T.S map.

- What are the crops mentioned in the map?
- Name the crop which is cultivated in more districts. Name the crop which is cultivated in few districts
- Which district cultivates more varieties of crops? What are they?
- Identify the crops grown in your district.

6. Appreciation, Values and creating Awareness towards Bio-diversity

- a) Farmers labour is hidden in the food we eat. What is your opinion on this.
- b) How do you feel when you look at the green fields?
- c) Where do you want to spend more time - at school; at home; or in the green fields. Why?
- d) How would you contribute in keeping the earth green?

I can do this

- | | |
|--|----------|
| 1. I can explain the different stages in cultivation, the equipment, the pesticides and the seeds used in cultivation. | Yes / No |
| 2. I can explain what is ideal cultivation. | Yes / No |
| 3. I can collect information related to cultivation and write it down in tables. | Yes / No |
| 4. I can explain details of the crops grown with the help of our state map. | Yes / No |
| 5. I appreciate the hard work of farmers in cultivation. | Yes / No |