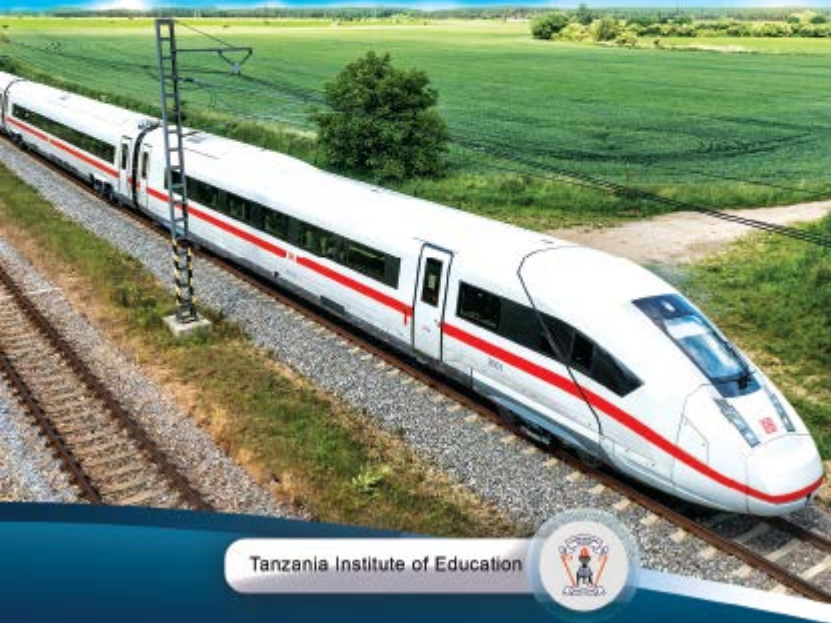
Geography

for Secondary Schools

Student's Book
Form Two



Tanzania Institute of Education

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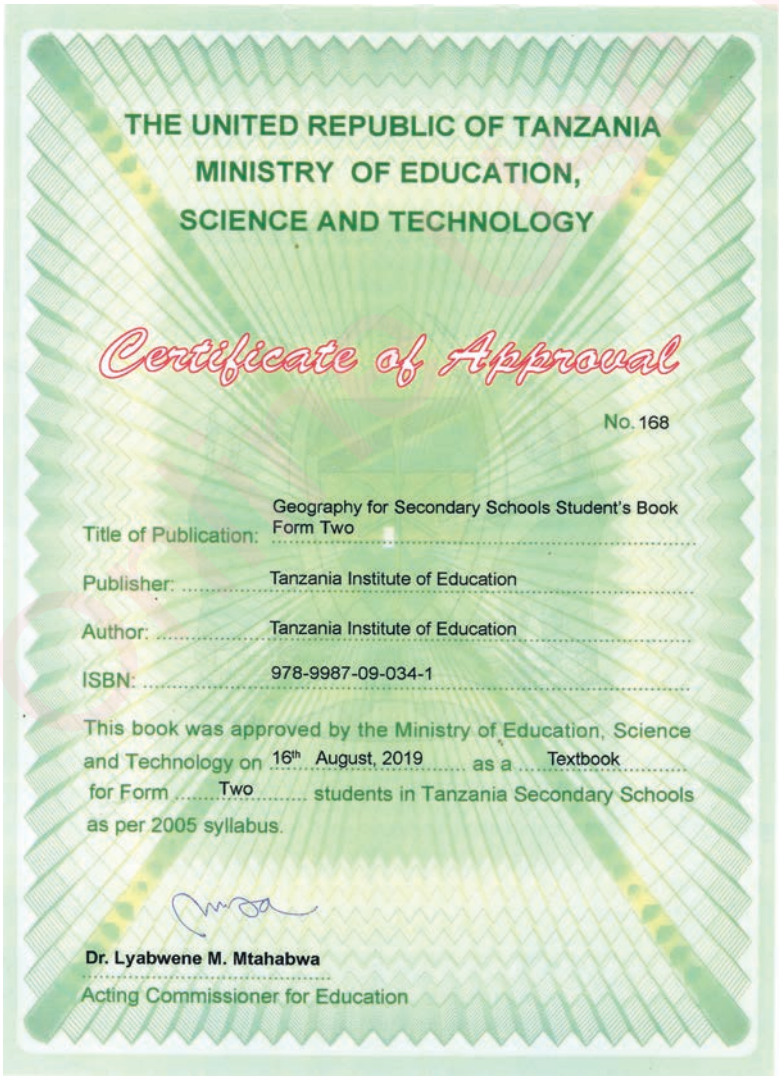

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Preface

This book, *Geography for Secondary Schools* is written specifically for Form Two students in the United Republic of Tanzania. The book is prepared according to the 2005 Geography Syllabus for Secondary Schools, Form I-IV issued by the Ministry of Education and Vocational Training.

The book is divided into nine chapters, which are: Human activities, Agriculture, Water management for economic development, Sustainable use of forest resources, Mining industry, Tourism, Manufacturing industry, Sustainable use of power and energy resources, and Transport.

Besides the content, each chapter includes activities and exercises. Learners are encouraged to do all activities and answer all questions. These activities and questions will enhance the learners' acquisition of the intended knowledge, skills and competencies for the Form Two level.

Tanzania Institute of Education

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Chapter One

Human activities

Introduction

Human activities refer to things that people do or cause to happen. Human beings do such activities for social, economic, and political purposes. In this chapter, you will learn about human activities, types of human activities, and the importance of such activities.

The concept of human activities

Human activities are functions, tasks or works that human beings perform to earn a living. Different individuals or groups of people carry out different activities in different places. For example, the Maasai of Tanzania and Kenya practise nomadic pastoralism because of seasonal availability of pasture and water in an area. People in urban areas, on the other hand, engage in activities in industries and offices. Some people engage in providing services in education, administration, planning and health.

Types of human activities

There are three major categories of human activities. These are primary, secondary and tertiary activities.

Primary activities: Primary activities are done by people when they interact directly with the natural environment to obtain their essential needs. These activities include agriculture, forestry, mining and fishing.

Agriculture: Agriculture is an activity which involves crop cultivation and livestock-keeping. It is the oldest human activity which has been practised by all societies in the world. It provides food for households and raw materials for industries. The type of agriculture practised in a given place is determined by various conditions of the area including climate, water availability, soil characteristics and terrain. It is also influenced by financial resources, infrastructure, technology and conditions of the market.

Agriculture can be done by individual farmers, companies or co-operative societies. Crop farming is the type of agriculture that involves the cultivation of land to produce crops. Crop farming can be practised to produce food crops and cash crops.

Food crops include rice, beans, cassava, maize, wheat, bananas, and potatoes whereas cash crops include sisal, coffee, tea and cashew-nuts. Figure 1.1 shows a rice paddy.

Figure 1.1 Rice paddy

Source: *Mwakalinga 03 June 2016: ippmedia.com*

Besides crop farming, there is also livestock-keeping with animals domesticated or kept for meat, milk, wool, skins and hides. These domesticated animals include cattle, goats and sheep. Livestock-keeping is widely practised in Shinyanga, Mwanza, Mara and Arusha regions. Other regions famous for livestock-keeping include Kagera, Dodoma, Singida and Tabora. Ranching or commercial livestock-keeping is largely carried out by companies in Tanga, Iringa, Njombe, Kilimanjaro, Dodoma, Singida and Tabora. Figure 1.2 shows a herd of Ankole cattle as an example of domestic animals kept in Tanzania.

Figure 1.2 Herd of Ankole cattle found in Kagera

Source: *http://ilovekageratanzania.blogspot.com*

Mining: Mining is the process of extracting minerals from the crust of the Earth. Mining is done on both small and large-scales. Large-scale mining is done by companies using advanced technology and heavy equipment whereas small-scale mining is done by individuals who are known as artisanal miners using simple tools. Some of the minerals found in Tanzania include tanzanite, diamond, gold, coal, uranium, limestone, gemstones, salt, copper and gypsum. Figure 1.3 shows small-scale miners engaged in a mining activity.

Figure 1.3 Small-scale miners using simple tools in Tanzania

Source: *https://www.dailynews.co.tz/news/2019-02-195c6bb0690c91b.aspx*

Fishing: Fishing involves catching fish and other water creatures from oceans, lakes, seas, dams, rivers and ponds for domestic or commercial purposes. In Tanzania, fishing is done in the Indian Ocean and in lakes such as Victoria, Tanganyika, Rukwa and Nyasa. There is also fishing in rivers such as Ruvu, Kilombero and Rufiji. Fishing activities also take place in dams such as Mtera and Nyumba ya Mungu. Major fishing areas in the world are found in Norway, Namibia, Japan and Sweden.

Small-scale fishing relies on traditional methods such as the use of fish-nets or fish lines and hooks. Figure 1.4 shows small-scale fishing in the Indian ocean. Large-scale fishing is conducted in deep waters of the large seas and oceans where modern fishing methods such as fishing trawlers are used.

Figure 1.4 Small-scale fishing in the Indian Ocean

Source: https://www.worldfishing.net/news101/Comment/ben-yami/speaking-up-for-small-scale-fisheries

Forestry: Forestry is a set of practises that involve managing forests for ecological, social and economic purposes. There are two types of forests: natural and man-made (planted) forests.

Planted forests: Planted forests are those in which trees are planted by human beings. They are commonly known as grown trees. The trees may be obtained locally or from other countries. In Tanzania, mahogany and teak are examples of local species whereas pines and eucalyptus are species from other countries. Some examples of planted forests in Tanzania include The Sao Hill forest plantantion in Mafinga, Iringa Region and The West Kilimanjaro forest plantation in Kilimanjaro Region.

Natural forests: Natural forests are the forests that generated themselves naturally. Examples of natural forests include the Eastern Arc (Usambara) Mountains forests, Mdandu (Njombe and Ludewa), Mitarure (Kilwa, Lindi), Kikongoro and Minziro (Misenyi) and The Duru-Haitemba forest (Babati). Other examples of natural forests include The Congo rain-forest found in the Congo basin of the Democratic Republic of Congo and The Amazon forest in Latin America. Natural forests are also found in other countries such as Finland, Sweden, Canada and Russia. Forests offer many benefits to people living close to forested areas and even beyond. For example, charcoal is one of the largest industries in Tanzania, employing tens of thousands of rural people and supplying energy to millions

Figure 1.5 Forest products in Tanzania

Source: *http://wwf.panda.org/wwf_news/?103600*

of urban households. Figure 1.5 shows one of the products from forests. The forestry industry provides employment opportunities such as selling of timber, firewood and charcoal. Also some people are employed as forest guards and forest officers. Forests are also a source of employment for timber merchants and carpenters. Furthermore, the forestry industry is also a source of building materials such as wood, pulp and poles. In addition, forests serve as sites for recreation and research.

Secondary activities: Secondary activities are subsidiary as they are performed in addition to primary activities. They involve processing products obtained from primary activities. Occupations which produce finished goods using the products of primary activities as raw materials are included in secondary activities. These include for example manufacturing of cloth from cotton, production of sugar from sugarcane and steel casting from iron ore.

Tertiary activities: Tertiary activities belong to the service sector. These activities involve the provision of specialised services required for primary and secondary activities. Such activities include transport and communication, trading, administration, banking and insurance.

Transport and communication: Transportation is the action or process of moving people, goods and services from one place to another. This may be done by road, railway, air, pipeline and water.

Likewise, communication is the exchange of information between and among different people. Major means of communication include radio, television, newspapers, telephone and the internet.

Tourism: Tourism is the movement of people within a country or from one country to another for the purpose of leisure, pleasure, studies or trade. Tourism involves travelling to and staying in places outside the usual residence for a certain period. Tourists travel to see the beauty of wildlife, landscape and man-made features. These features include wildlife conservation areas such as national parks and game reserves, beaches, and historic (heritage) and cultural sites. Beaches in Tanzania are found along the coast of the Indian Ocean and on shores of lakes Victoria, Tanganyika and Nyasa.

National parks are areas created and protected by law for the purpose of conservation of wildlife and its associated habitat. Examples of National Parks in Tanzania include Serengeti, Mikumi, Lake Manyara, Ruaha, Gombe, Mahale, Katavi, Kitulo, Saadani, Kilimanjaro, Mkomazi, Saanane Island, Rubondo, Nyerere Nationa Park at Selous (the upper part of Selous), Udzungwa and Tarangire. Game reserves include the lower part of Selous (which is the largest protected area in Tanzania), Rukwa, Ugalla and Maswa. Ngorongoro conservation area is the only protected area in Tanzania where humans, livestock and wildlife live together in the same environment.

Tourism industry creates employment and stimulates the growth of service sectors such as transport, hospitality, insurance, communications and tour guiding. Figure 1.6 shows tourists in a car observing lions, one of the wildlife attractions.

Figure 1.6 Tourists observe lions at Tarangire National Park

Source:*https://www.tanzaniawildcats.com/tanzania-safaris/6-days-african-lions-safari*

Trading: Trading is the process of buying and selling goods and services between people, organisations and countries. It takes place between producers and consumers. Some of the things involved in trading include machinery, clothing, food, medicine, cars and fuel. Trade may take place within a country or between countries. International trade allows countries to expand markets for both goods and services, which are not available in a particular country. Furthermore, international trade allows countries to participate in global economy hence encouraging opportunities for foreign investment.

Importance of human activities

Human activities are important in many ways. People are employed in different sectors depending on the kind of activities they can do. For example, in mining there are multi-national companies such as Williamson Diamonds and Barrick Gold (now known as Acacia), which employ many people. The companies also pay tax to the government. Moreover, employment in different human activities generate income which improves people's standards of living.

Exercise

Answer the following questions:

1. Define the following terms:
   (a) Human activity
   (b) Mining
   (c) Forestry

2. Mention human activities which are influenced by the weather of a particular area.

3. List four benefits of human activities in Tanzania.

4. Describe one activity that is done at home for increasing family income.

5. Write **True** or **False** for each of the following statements:

   (a) Tertiary activities provide services whereas secondary activities are done for processing and manufacturing goods.

   (b) Primary activities are associated with land degradation unlike secondary activities, which are associated with environmental pollution.

   (c) The distribution of different types of human activities is related to the types of human settlements.

   (d) Secondary activities are carried out without depending on primary and tertiary activities.

   (e) Types of human activities is related to the types of human settlements.

Chapter Two

Agriculture

Introduction

In this chapter, you will learn about the meaning and types of agriculture, the effects of rapid population growth on small-scale agriculture, characteristics of small-scale agriculture, advantages and disadvantages of small-scale agriculture, and ways of improving small-scale agriculture. You will also learn about types of large-scale agriculture in the world, major crops grown in each type of large-scale agriculture, characteristics of large-scale agriculture and problems facing large-scale agriculture in Tanzania and the USA. Finally, you will learn about the various types of livestock keeping practises as well as their benefits and constraints by focusing on Tanzania and Australia.

The concept of agriculture

Agriculture is a science which deals with crop cultivation and livestock keeping. It is the oldest human activity which has been practised by many societies in the world. Through agriculture, human beings grow crops for use by households and supply to industries. Factors influencing agriculture include climate, water availability, soil characteristics and terrain. Agriculture is also influenced by availability of financial resources, infrastructure, technology and markets.

Crop cultivation

Crop cultivation can be categorised into different types basing on factors such as size of farms, type of crops, motive of production and level of mechanisation. Based on size, crop cultivation is divided into two types: small-scale and large-scale crop cultivation.

Small-scale crop cultivation: Small-scale crop cultivation is the growing of crops on a small piece of land. It is also called subsistence farming. It aims to produce enough food for the wellbeing of families. In some instances, when the production is high, the surplus is sold. Individuals engaging in small-scale crop cultivation are known as peasants. They are also called subsistence farmers as they grow food crops to feed themselves and their families with little or no surplus for sale.

As noted earlier, the agricultural system at subsistence level falls under this category. A farmer owns a small piece of land for food crops cultivation. The produce is enough only for the family. It is hand to mouth existence which may lead to famine if the harvest is bad. In years with good harvest the farmer

may have surplus to sell to the local markets. The farms are small, about one to five hectares owned by the family. Application of machines is difficult as farms are small.

Small-scale crop cultivation is done by using different methods such as shifting cultivation, crop rotation and bush fallowing.

Shifting cultivation: This is a traditional system of cultivation used in tropical rainforest and miombo wooded savanna. It operates where population is sparse. People farm and move to another fresh area when the yields are low. The cultivator or farmer burns the forest and sows seeds in the intermixed ash and soil. Little attention is given to the crops until they ripen. If the harvest declines, the land is abandoned and a fresh area is cleared. The yields decline after three to five years. The cultivator may return to the original land after some years. The constant moves ensure fresh land with high yields, as the land is fertile. There is no serious soil erosion since only a small area is exposed which support many crops and therefore little bare earth is seen. Any soil washed is trapped by dense plant roots and at the forest edge. The system is less risky of diseases.

The methods used in shifting cultivation differ with people's culture and the varieties of crops they grow. Some use fire to clear the land. Such system results to wastage of valuable timber, which took over a hundred years to grow but destroyed in a few days. Green manure is ruined and soil profile is altered by the destruction of bacteria and humus. Areas practising this system include Malawi, Zambia, Liberia and Uganda. In Zambia this system is called 'slash and burn' agriculture or the 'Chitemene.' Shifting cultivation in Tanzania is commonly known in Kiswahili language as 'kilimo cha kuhamahama' (shifting agriculture), but also unofficially known as 'mahame' (shifted land) or 'malale' (fallow land). Regions practising shifting cultivation include Morogoro, Lindi, Rukwa, Mbeya, Iringa, Tabora, Dodoma and Tanga. In Tabora, for example, tobacco farming relies heavily on shifting cultivation.

Crop rotation: Crop rotation involves growing different crops on the same land at different times.

Bush fallowing: Bush fallowing is not different from shifting cultivation in that in bush fallowing people have permanent settlements. They clear the bush, burn the vegetation and sow seeds. Yield declines after three to five years. The farm is left to regain its fertility for nearly ten years. Another bush is cleared and cultivated. No movement is involved in bush fallowing. This is possible in areas with dense population.

Small-scale crop cultivation is advantageous to farmers. It allows them to grow varieties of food crops. Different crops grown in small farms make it easy to control pests and diseases.

Elementary tools such as pangas, hand hoes and axes lead to low cost of running the farms, hence low capital involved. Farmers depend on rainfall only which is unreliable hence, during droughts the farmers suffer from famine.

Characteristics of small-scale crop cultivation: Small-scale crop cultivation is characterised by the following features:

(a) The harvest from the farm is used for family consumption.

(b) It is practised on small pieces of land, often less than five acres in size.

(c) Peasants use simple tools such as hand-hoes and machetes for cultivation. In some cases, ox driven ploughs are used.

(d) Farmers often grow different types of crops on the same field. This technique is known as intercropping. The crops grown may include grains such as beans, maize and millet.

(e) It is associated with the use of organic manure to improve soil fertility.

(f) Farming activities are mainly done by family members.

Relationship between population growth and small-scale crop production

Population growth is an increase in the number of people in a particular area. Rapid population growth could be due to natural increase or in-migration. The rapid population growth puts more pressure on small-scale farmers. Yet, subsistence farmers are not likely to raise their output to feed the growing numbers because of lack of capital. Subsequently, land becomes overpopulated and resources overused. Also high population growth is associated with smaller farms and lower farm wages. As a result households in densely populated areas increasingly rely on off-farm income.

Effects of rapid population growth on small-scale crop cultivation

Overpopulation does not depend merely on the total number of people living in an area, or on the population density. It depends much on the available resources in a given area. When an area has more people than it can support to give them a reasonable standard of living, the area will suffer from *overpopulation* or *population pressure.* If the area has inhabitants who are too few to develop the resources available to improve living conditions, then the area suffers from under-population.

Population pressure is caused by rapid increase of population. In Third World countries, population is growing rapidly and food demand is high whereas food production is low. As the population increases, shortage of land in the productive areas becomes a source of serious concern. In some parts of regions such as Kilimanjaro, Mara, Kigoma, Shinyanga, Mbeya, Manyara and Morogoro, where a high population increase has occurred, land shortage has

become a serious problem. In fact, the land available has been over cultivated and exhausted, hence paving way to soil erosion. Over the years, many people have been migrating from their homelands to other regions in search of fertile land for cultivation.

The resulting population growth affects land use patterns. This may cause shortage of food and poor living standards. The solution to this problem is to improve small-scale crop cultivation. The government and other organisations should help farmers by providing them with education and capital to make subsistence agriculture more intensive and more productive. Moreover, the government, non-governmental organisations (NGOs) and co-operative societies should help the farmers to select better seeds, use proper insecticides, pesticides, and apply fertilisers properly. In addition, they should help in providing transport to make sure the products reach proper storage places and markets. Furthermore, the government should emphasise and support the opening of joint agriculture ventures, finding of markets for surplus products and establishing good storage facilities. Additionally, deliberate efforts should be made to provide education on good farming practises, for example, the use of simple but improved farming technology.

Advantages of small-scale crop cultivation: Small-scale crop production is cheap to operate since it involves the use of simple farming tools such as hand hoes and machetes. It is also cheap because the sources of labour are family members and, hence, easy to manage. In addition, small-scale agriculture needs small capital since it operates on small pieces of land.

This type of agriculture when intergrated with livestock-keeping provides biomass which is useful in the production of biogas energy. This energy is commonly used for cooking. Another advantage of small-scale crop cultivation is that farmers get fresh food such as vegetables and fruits. Therefore, small-scale agriculture contributes to the development of local communities.

Disadvantages of small-scale crop cultivation: Small-scale crop cultivation is associated with loss of soil fertility due to overuse of the same plots of land. Moreover, the practise of burning vegetation during farm preparation tends to destroy soil nutrients, hence lower its fertility. As a result, subsistence or peasant farmers' yields tend to fall. Such low yields are also contributed by low use of fertilisers and pesticides. Therefore, various ways are needed to reduce the challenges of small-scale crop cultivation.

Ways of improving small-scale crop cultivation: Small-scale farmers need training on the best cultivation practises such as the application of manure and proper use of chemical fertilisers. Farmers should also be educated on the use of hybrid seeds and irrigation schemes. Furthermore, the establishment of co-operative unions can help small-scale farmers to get soft loans, access markets, undergo training and benefit from extension services.

Exercise 2.1

Answer the following questions:

1. Define agriculture.
2. Name two types of agriculture.
3. Explain any four characteristics of small-scale crop cultivation.
   (a) List any three advantages of small-scale crop cultivation.
   (b) List any three disadvantages of small-scale crop cultivation.
4. Mention the effects of rapid population growth on small-scale crop cultivation.

Large-scale crop cultivation: Large-scale crop cultivation is a farming system that covers a large area of land to produce one type of crop for commercial purposes. This type of large-scale farming is also known as commercial agriculture.

In large-scale crop cultivation, the type of farming practise is mostly monoculture, in which a single crop is produced in large quantities. In developing countries monoculture is associated with tropical and sub-tropical plantation which were established through European colonisation. After independence of individual countries, the plantations were owned by government and others were allocated to individuals as small holders and peasant farmers. These plantations also known as estates are large and found in sparsely populated arears.

Crops from the plantations for example sisal and tobacco are processed before leaving the plantation and further processed right after harvesting to raise the value of the product per unit weight, and reduce its weight for long distance transferring. Mechanisation and irrigation are applicable on this kind of agriculture, hence weather change is not a problem. Poor people cannot manage this type of farming because it needs very big capital.

***Characteristics of large-scale crop cultivation*:** Large-scale crop cultivation is characterised by cultivation of a large area with the application of high level of technology. The technology involves the use of tractors, combine harvesters, and processing machines. As large-scale farming is highly mechanised, it employs few skilled people because machines carry out agricultural activities that otherwise could have been done manually by humans.