

**Q1: Define what a sustainable community is. (1.1)** Communities are places where people live and work, and hopefully enjoy their family lives, living healthily and happily. A sustainable community is one which fulfils all the needs of the present population without affecting the ability of future generations to enjoy theirs and without damaging the environment. As with all sustainability issues we must SEE how communities can be sustainable. This means considering Social, Environmental and Economic issues and attempting to retain a balance between the three.

A socially sustainable community is one where people feel safe and free, culture is respected, people are well fed and educated and can lead happy, fulfilling lives. Environmentally sustainable communities do not damage their own or the surrounding environment, water and air are clean as pollution of air, land and water is controlled, enough energy is provided and waste controlled to preserve ecosystems. The Economic element is probably the most contentious as profit has for too long been the overriding consideration in economic activity. Growth and wealth must be maintained through a diverse economy that provides for a happy and fulfilled workforce and the local dimension should be favoured above regional, national or international systems. Sustainable communities encompass most if not all the UN sustainability goals ([sdg.un.org/goals](http://sdg.un.org/goals)), and in particular number 11, sustainable cities. Making communities sustainable will increasingly mean making urban areas and cities, and within them individual neighbourhoods, more sustainable. This is due to the fact that although people have always lived in communities, urban areas now contain over 50% of the total world population and millionaire and megacities (over 10million inhabitants) are now becoming more common particularly in the developing world.

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**Q2: Describe what a community needs to be sustainable by giving at least three examples. (1.2)** There are 8 so called pillars of community sustainability.

1. A complete community with mixed use including housing, employment, education and leisure.
2. Low impact transport that does not cause pollution.
3. Green buildings that conserve heat, use less energy, and create less overland flow.
4. A multi-tasked landscape supporting housing, employment, leisure and food production.
5. Innovative regenerative infrastructure conserving water and energy, and producing less waste.
6. Integrated food systems.
7. Social support systems.
8. A prosperous local economy.

These can be compressed into 3 main issues mentioned in the previous answer to make communities sustainable, social, environmental and economic sustainability. There are links and relationships between these three elements of sustainability.

Social

To attain social sustainability a community and the country it is part of need to address the UN sustainability goals which include:-

- reduction of poverty and hunger
- good education and training
- reduction in socio-economic inequalities and improving gender equality
- clean water and sanitation
- decent jobs
- peace, justice, freedom and the preservation of cultural heritage

Environmental

Sustainable communities must minimise pollution of the air, water and the land, this will protect the environment, maintain local ecosystems and protect biodiversity. This will bring health benefits to members of the community and mean uncontaminated water and safer food supplies which will also improve productivity. By reducing the use of energy fewer fossil fuels will need to be burnt to supply electricity and demand can more easily be met by installing microgeneration schemes using solar and wind power. Water conservation measures will need to be put in place to prevent water shortages and cut down on waste and pollution. A low impact transport system that moves away from cars in general and petrol cars in particular will need to be implemented, encouraging walking and cycling, and using electric powered buses or trams. Housing and other buildings need to be built using sustainably sourced materials and incorporating energy saving and energy producing features.

Economic

Economically a community needs to provide diverse employment opportunities that provide good working environments and a rewarding working life. The economic structure must be financially viable to be sustainable and resource efficient, re-using and recycling resources where possible to protect the environment. Local ownership and involvement are required to promote a community feel and education and training must be provided for employees and prospective employees.

Kelham Island in Sheffield ([welcometosheffield.co.uk/areas-to-exlore/kelham-island/](http://welcometosheffield.co.uk/areas-to-exlore/kelham-island/)) illustrates the ideas of economically sustainable communities well. Once the heart of the unsustainable iron and steel industry of Sheffield, the area has undergone regeneration to become a centre for high -tech industry, retail and leisure. Now a vibrant site it offers independent and locally owned shops, retail, a brewery, a software developer and eco-housing. There is also a museum that pays homage to the

industrial heritage of the area, this attracts visitors who also enjoy and patronise all the other facilities on offer.

In conclusion a sustainable community must create respect and tolerance between residents of all ethnicities, religions, ages and sexual orientation, and provide equality of opportunity. It should be politically and economically stable while not negatively influencing the sustainability of other communities.

All of these ideas can be illustrated by looking at Mayfield, a planned brownfield development near the centre of Manchester adjacent to Piccadilly station ([manchester.gov.uk](http://manchester.gov.uk)). This initiative follows the UK government policy of 'brownfield first' to protect the environments found on greenfield sites and green belts around the city. A partnership between the private and the public sectors, it aims to help fix the housing shortage that exists in the Greater Manchester area while providing a healthy working, living and leisure environment for residents.

At the heart of the plans is a green space leisure and relaxation area and a re-wilded section of the river Medlock to enhance biodiversity and help prevent flooding. The development will be one of mixed usage including housing, some of it affordable to attract residents of differing socio-economic status, leisure, retail and work facilities, particularly in the tertiary and quaternary sectors required in a post-modern, post industrial city.

The sustainably built and well insulated housing and micro-generation of electricity by renewable methods will help the community address its zero waste and zero carbon targets. Car ownership and use will be discouraged by the provision of walkways and cycleways, and the excellent links to the rail and metro systems that exist in central Manchester. Some of the industrial heritage of the site will be preserved and it is hoped that residents will lead productive, happy, healthy and fulfilling lives.

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**Q3: Explain at least three local benefits of a sustainable community. (1.3) 1. Ecosystem protection.**

A sustainable community will have a positive impact on the local environment, ecosystem, habitats, flora and fauna.

Unsustainable communities damage local ecology, whereas sustainable communities will protect the ecology, preserve and enhance local biodiversity. The reduction in pollution, and re-using and recycling of waste with the associated reduction in toxic contamination of the surroundings will keep inhabitants healthy and give them access to healthy, wholesome food.

Building a truly sustainable community must involve integrating green spaces, planting trees and protecting existing woodlands and wetlands. The Mayfield proposal for a sustainable community in central Manchester integrates open space and also includes the re-wilding of a section of the river Medlock which means a re-introduction of aquatic habitats and the flora and fauna they accommodate.

Manchester is implementing other plans to produce sustainable communities by regeneration and redevelopment of other brownfield sites within the city. A disused landfill site in Salford ([salford.gov.uk/lp-biodiversity](http://salford.gov.uk/lp-biodiversity)) has been developed as a 'biodiversity bank' where habitat enhancement of grassland, woodland and wetland is part of a 10 year action plan for Salford which aims to embed biodiversity into any development proposals. A large green park, the River Park is also planned as part of the Victoria North Regeneration Scheme ([manchester.gov.uk](http://manchester.gov.uk)). It aims to provide 15,000 homes adjacent to a city river park that will have open spaces, will enhance existing habitats and create new ones.

Sustainable farming communities also have a beneficial impact on environment and ecology. They introduce farming practices that are environmentally friendly, often incorporating woodland and wildlife habitats, supporting biodiversity and the local community. Sustainable farming aims to stop the use of chemical fertilisers, pesticides and herbicides, some of which by definition harm ecosystems and reduce biodiversity. Moving away from chemical fertilisers requires more careful soil management, crop rotation and combining arable farming with pastoral activities to provide natural manure.

Excessive use of fertilisers in the past has led to them leaching into local streams and rivers, reducing oxygen levels, creating algal blooms, and causing eutrophication that increases organic matter in water, preventing sunlight from reaching the plants that fuel the whole aquatic ecosystem through photosynthesis.

Urban farms and allotments are increasingly being integrated into sustainable communities. This may be through community farms, community gardens, as well as commercial farming and farms attached to institutions such as schools and hospitals. The Millennium Village in Greenwich, London ([londonfarmsandgardens.org.uk](http://londonfarmsandgardens.org.uk)), itself a sustainable community, has been designed to form an environmentally friendly and energy saving community, and houses the Greenwich Ecology Park. Incorporated into this is an urban farm growing vegetables and flowers by organic methods, supplying local businesses.

**2. Microclimate and flood control.**

Urban areas produce their own microclimate. They are often warmer than the surrounding countryside, the heat island effect, caused by the way concrete and buildings react to solar radiation, and this can enhance the negative effects of heatwaves causing an increase in heat stroke, heat exhaustion and deaths. Sustainable communities in urban areas can combat this by whitening urban materials, surfaces and structures to increase the albedo effect, increasing vegetation cover and introducing more green roofs.

The air quality of urban areas is often poor due to pollution by industry and transport systems. This includes gases and particulates which can cause smogs and even photochemical smogs in cities such as Los Angeles and Mexico City which lead to breathing difficulties and increased mortality. Sustainable communities aim to reduce vehicle usage, promote walking and cycling and introduce sustainable urban transport systems which can go some way to solving the problem.

Urban areas also tend to have higher rainfall than rural areas, up to 25% more, and an increase in heavy storms and thunderstorms. This is due to the heat island effect that causes convergence of air and convection that produce cumulonimbus clouds, intense rainfall and more energetic thunderstorms. This leads to an increase in the frequency of flooding and the associated sewage leakage and contamination that occur in cities. Sustainable communities can reduce this by taking action to reduce the heat island effect and producing a cleaner environment that is less likely to stimulate condensation in the

atmosphere.

Urban environments in general produce more overland flow of water since little is intercepted by vegetation and infiltration is retarded by impermeable brick and concrete surfaces, meaning that urban streams and rivers exhibit a 'flashy' hydrograph, producing more flooding. Sustainable communities in urban areas will introduce Sustainable Urban Drainage Systems (SUDS) and 'sponge city' proposals ([therivertrust.org](http://therivertrust.org)) that attempt to reduce the frequency, intensity and negative impacts of flooding. This involves the introduction of permeable surfaces, grassed and wooded areas, which allows the percolation needed to lower the urban storm hydrograph. Swales and filter strips are built to slow down the movement of water into urban rivers and the rivers themselves can be restored and re-wilded to enable them to cope more effectively with excessive rainfall.

The Tame valley ([tamevalleywetlands.co.uk](http://tamevalleywetlands.co.uk)) in the Midlands area of the UK has seen these procedures implemented. The local council, the Environment Agency and the Severn Trent Water Authority have combined to re-introduce natural river features such as meandering and braiding, and dig out water retaining basins that have been planted to create nature reserves.

### 3. Social cohesion.

A sustainable community will develop social well-being, where individuals consider themselves to be part of a team and where teamwork and team spirit are important. The community spirit that develops enables each individual to be responsible, respected and valuable to the whole society. This community spirit involves engagement and cooperation with the society in general and all its individual members in particular, meaning that everyone is well motivated and has high self esteem. Everyone in the community, regardless of age, gender, sexual orientation, religion or ethnicity is embraced by the community and will be respected, in doing so the community reduces inequalities and produces a safe environment where culture and cultural differences are respected.

Within a sustainable community there is equality of opportunity. Education and training are first class and residents have good, future proofed employment which gives them a decent standard of living. Well-being and safety are paramount, health care is excellent for all and people feel safe from crime.

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#### **Q4: Explain at least three global benefits of sustainable communities. (1.4)**

1. Lower levels of atmospheric pollution  
Lower atmospheric emissions of gases such as carbon dioxide, sulphur dioxide, nitrous oxide and Chlorofluorocarbons (CFC's) can have a global impact. Introducing a cleaner environment by a reduction in vehicle usage, energy conservation and local microgeneration of electricity by renewable methods will have a positive effect on world atmospheric pollution levels. This may lower greenhouse gases and help reduce or slow down global warming, climate change, sea level rises and the detrimental impact of increasing drought, storminess and cyclones around the world.

The level of benefit gained by this is tempered by the fact that developing sustainable communities in the developed nations usually involves the growth of the tertiary and quaternary sectors of employment which are generally non polluting. As part of the new international division of labour (NIDL) the secondary or manufacturing sector is growing in less economically developed and developing nations where regulations regarding pollution are generally less strict and less rigorously enforced.

This can be illustrated by looking at acid rain which can have a devastating impact on habitats, ecosystems, flora and fauna. It is primarily caused by the emission of sulphur dioxide and nitrous oxide, and globally this has decreased significantly by using scrubbers in smokestacks and reducing the use of petrol and diesel fuelled vehicles. Some nations such as the UK have significantly reduced their emissions, sulphur dioxide emissions in the UK peaked in 1964 and have fallen rapidly since then, and wet sulphate and nitrate deposition has fallen significantly. In rapidly industrialising countries in the NIDL system such as China and India ([ourworldindata.org](http://ourworldindata.org)) the picture is different. In China sulphur dioxide emissions peaked in 2006 and have fallen only slowly since then, and in India sulphur dioxide emissions are still growing and have quadrupled since 1990. The result of this is that both countries still suffer from frequent large scale smog and pollution events.

A better global picture is seen when we consider depletion of the ozone layer. Ozone is an important gas in the upper atmosphere cutting out some of the harmful elements of solar radiation which can cause skin cancers, damage eyes and increase immune deficiency in the population. By controlling the release of long lasting CFC's in refrigeration and air conditioning systems the so called 'ozone hole' over the southern hemisphere is beginning to shrink and 'heal'. The changes needed to reduce CFC emissions are more likely to take place in countries and communities which are more aware of their global sustainability responsibilities.

#### 2. Reduction in resource depletion

If sustainable communities become more common there will be more widespread action on resource depletion since each of the individual sustainable communities will be engaging in resource efficiency and sustainable waste management. This will mean that fewer resources need to be imported from other areas which will conserve global resources. This will also be achieved because enterprises in sustainable communities are more likely to engage in the reduce, re-use, recycle mantra which will drain fewer resources and help in itself produce less waste, some of which has traditionally been disposed of in the wider area in landfill sites that produce methane.

Of course as in the last section we must be aware that the NIDL means that many of the waste producing secondary and manufacturing enterprises are now being located in developing nations where resource efficiency and sustainable waste management are not so strictly overseen by governments and regulations.

In some cases the export of waste, notably plastics, to other countries has become commonplace. Germany, Japan, UK and the USA are leading exporters, in the case of the UK most of its plastic exports go to Turkey, Malaysia and Vietnam. This will become less of a problem as sustainable communities conserve resources and produce less plastic waste. Although some of the exported plastic is recycled it has been estimated that 5% of the total oceanic plastic pollution comes from mismanaged exports, much of it may simply be dumped in landfill producing extra methane, and the actual process of shipping the plastic abroad causes pollution. Sustainable communities are likely to contain companies, retail outlets and leisure facilities that attempt

to reduce plastic waste, plastic free communities may develop as councils, schools and other businesses implement sustainable procedures.

### 3. Spread of innovative ideas

Entrepreneurs and innovation are at the heart of business opportunities and development in sustainable communities. This can lead to the spread of ideas and initiatives from the local to the global. Sustainable communities encourage start-ups by locals aided by government and council grants and these start-up enterprises often relate to sustainable issues, emission and waste reduction.

Hydroponics, a way of growing crops without soil is actually an ancient technology, but the technology has recently been improved and re-established. Modern hydroponic schemes such as one in Clapham, London ([www.cam.ac.uk](http://www.cam.ac.uk)), has innovated the growing of crops underground, without soil and even without the sun. Plants are fed through organic food in water and low energy LED lighting provides the energy for photosynthesis.

The Clapham scheme is a first attempt at underground farming and has been monitored and assisted by research at Cambridge University to produce salad crops with higher yields, in less time and space and producing less waste than traditional glasshouse cultivation.

These ideas have already started to spread, the sustainable community found at Kelham Island in Sheffield now has its own hydroponic eco-farm in underground tunnels producing organic products, green vegetables and herbs. Supported by Launchpad ([launchpadsouthyorkshire.org.uk](http://launchpadsouthyorkshire.org.uk)), an organisation that helps Sheffield entrepreneurs, it uses paper, coffee and food waste provided by local restaurants and hotels to create organic food supplied to local businesses and reduce food miles.

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## Q5: Complete the questions below.

**a) When you are developing a sustainable community proposal, name three different resources that can be used to help and support. (2.1)** Three resources that can be used to help and support a sustainable community proposal.

1. Local council
2. Local business
3. Local MP / MP's

**b) For each resource, write a short description of at least two ways they can support your proposal. (2.1)** How resources can support proposals.

1. Local council.

Local councils are involved with all aspects of community life, they maintain services and regulate by overseeing and monitoring with policies and procedures, some of which are imposed by the government. They can direct people to Non-Governmental Organisations (NGO's) that may be of help and advice to anyone trying to introduce a new scheme or proposal, and other community projects taking place in similar areas.

The North East Lincolnshire Council (NELC) has developed a Sustainability Appraisal scheme as part of plans to become carbon neutral by 2030 or as soon as possible thereafter. Along with the NELC Environmental Vision, and Create (N E Lincs) which has produced a useful resource hub, the council aim to create opportunities and support local initiatives and give access to grants.

Examples of local sustainable initiatives are, 'Greening Up Our Place' involving locals and schools, support for local clean-ups with the CLEAR IT campaign, and an initiative to transform underutilised allotment spaces.

2. Local business.

When setting up any local sustainability initiative it is essential to include local businesses from the outset of the planning phase. As part of the community their insight is important and they may have or give access to people and professionals with knowledge that can support the proposal. They may be able to aid the scheme financially by providing resources or direct funding through sponsorships. This will also help the proposal by providing free advertising that will increase local awareness and involvement while helping the business itself through the 'good press' it receives. Local businesses such as cafes can help by providing premises for group meetings outside business hours.

Within the NELC area local businesses are encouraged by the council to invest and become involved in local sustainability schemes and help 'green up' the local environment. The local Green Influencers, a volunteer environmental action group of young people has been involved in clean up campaigns such as litter picks and river cleans. Although most of the funding for the group comes through national organisations the local group is helped by being allowed to hold regular meetings at a local cafe.

3. Local MP / MP's

The local MP can be a help in setting up and running a sustainable community project, however, the degree of and quality of the help offered very much depends on the quality of the MP and their particular interests. They should be very involved and concerned with community issues and will usually reply constructively to letters and most make themselves available periodically in constituency surgeries. They are then able bring up relevant issues in Parliament and during parliamentary debate, can ask questions of ministers and perhaps give you contact with relevant ministers. As a figurehead of the local community they can mobilise opinion on sustainable subjects and enable local initiatives to link with other organisations.

In N E Lincolnshire and Grimsby the East Marsh ward is recognised as one of the most deprived in the whole country. Various community initiatives have been set up such as the East Marsh Community Research Network which has recently been awarded nearly £1m to help combat the social, environmental, economic and health challenges that exist in the ward. Lia Nici the local MP from 2019 to 2024 is recorded as meeting with relevant East Marsh councillors and a group called East Marsh United, set up to transform lives for the better, look for solutions to problems and give local people a voice, and her involvement

may have inspired some local 'green' activists and given the group a higher profile which would help projects such as their tree planting 'Greening the Marsh' initiative aimed at enhancing biodiversity, building climate change resilience, preventing flooding and helping people feel better and have more pride in their local environment.

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**Q6: Complete the questions below.**

**a) When you are implementing a sustainable community proposal, name three different potential sources of help and support. (3.1)** Potential sources of help and support for sustainable community proposals

1. Crowdfunding
2. Grants
3. Government

**b) For each potential source of help, write a short description of at least one thing they can do to help you implement your sustainability proposal. (3.1)**

1. Crowdfunding

Crowdfunding is a recent innovation, based on the ubiquitous nature of the internet, of fundraising to support sustainability initiatives. It appears that it may be increasingly filling the role of traditional sources of venture capital. Entrepreneurs are increasingly looking to crowdfunding as a fundraising mechanism for sustainability proposals and research shows that programmes are 70% more likely to succeed in the long term after crowdfunding. Females, in particular, are finding that their entrepreneurship is enhanced by crowdfunding schemes that do more than raise funds, they also advertise to and engage with people through social media making success more likely.

2. Grants

A valuable source of funding are grants that can be accessed through the local council who often act as a conduit for government money.

The NELC has secured funding through Financing Green Ambitions and the Green Finance Guide and administers it through the Community Renewal Fund (CRF) and the Shared prosperity Fund (SPF). The CRF includes support for sustainable proposals including sustainable employment and the 'green' economy, and the SPF has secured £5.2m for the period 2022-25, some of which has been invested in sustainable Community and Place initiatives.

Private businesses are increasingly aware of their responsibility for environmental issues and many have developed a Corporate Social Responsibility policy which invests in local sustainable programmes while also giving the company a valuable positive image locally. Forrester Boyd ([forresterboyd.co.uk](http://forresterboyd.co.uk)) a grimsby based firm of chartered accountants is committed to making a positive impact and involves itself in local charities and community initiatives. It has its own charitable trust, the Bradbury Foundation, which aims to empower communities across Lincolnshire and East Yorkshire to improve social welfare and well-being.

3. Government

The government ([www.gov.uk](http://www.gov.uk)) sets the rules and regulations, dictates the national targets, and makes funds available to local authorities and community proposals. In doing so it sets the scene for proposals and explains government ambitions by stressing the areas that need to be addressed such as air, water and land pollution, biodiversity and the decline in nature, and waste and recycling. These ideas are enshrined in the Environment Act of 2021, but the government has little immediate contact with individuals and local groups putting forward sustainable community proposals, however, part of the Act has introduced a 'barrier' busting procedure through which they can contact the government directly for help, guidance and funding. The earlier UK government eco-towns policy document published in 2007, illustrated in an eco-towns prospectus ([portal.exfordshire.gov.uk](http://portal.exfordshire.gov.uk)) sets out the government objectives in urban sustainability. Intended to oversee new developments and council planning policies, it was increasingly used in improving sustainability in existing settlements, but individual and groups can still use this as a backdrop for their proposals.

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**Q7: Describe how to engage with potential sources of support for development proposals. (3.2)** When developing proposals for sustainable development initiatives there is an established procedure that should be followed; establishing the issue that needs to be addressed, considering the positive impacts it will have, deciding how it will work and how much it will cost, and assessing what resources you already have and what new resources you will need.

Engaging with sources of support is essential, including government agencies and NGO's, to offer guidance through the process and help the access of necessary resources. This will ensure that the proposal has clear goals, achievable targets, is able to define the role of participants, illustrate ways in which collaboration and communication including networking will take place, and educate and train the participants. Engagement and communication must be key elements of any proposal.

The Heritage Fund ([heritagefund.org.uk](http://heritagefund.org.uk)) offers advice and good practice in setting up a sustainability project proposal and gaining their support as long as the proposal supports nature conservation, reduces negative environmental impacts, and helps adaptation to climate change. The extensive advice sets out a step by step guide to help applications for funding which helps people setting up a programme to help environmental sustainability, and protect and enhance the environment.

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