



C2 REVEALING GOOD PRACTICE

Developing urban home gardens

At a glance

- Is home gardening a good option for your urban context? Think about what space is available and where water for the garden will come from. Ensure the quality of water, air and soil is good enough, and explore whether there are any legal guidelines or restrictions.
- Decide on the purpose of the garden: nutrition, income or both?
- Decide which type of home garden is best. Consider sack/bag gardens, rooftop gardening, cultivating window sills/balconies, allotments by the side of the road and dairy or chicken farming.
- Select the right crops to ensure a variety of fruit and vegetables, and ones that are resilient to pests and environmental changes.
- Keep soil healthy. Consider using compost or mulch.
- Intercropping different crops together improves the soil condition and helps to increase harvests by saving space.
- Plant at the right time.
- Ensure the garden is cared for. It will need weeding and watering regularly.
- Consider whether the home garden can be used as a source of income.



Why use this tool?

People living in urban areas can be vulnerable to changes in food prices. Helping urban households to produce small amounts of food will mean better nutrition and extra income either from selling food or saving money otherwise used to buy food. If you are in a rural context, see **C2 – Developing rural home gardens**.



The words we use

Compost – a fertiliser made from vegetation waste and other natural materials.

Intercropping – growing two or more crops together to benefit each other.

Peri-urban – areas between cities and rural areas. They include a mix of urban and rural characteristics.

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A brief description

This tool introduces different ways of producing food in urban areas, and things to consider before getting started.



Time taken

It will take several months to cultivate the land, plant and manage the crops and then harvest the produce.



You will need

- **space** to cultivate, or a **container** in which to put soil and so create a small garden (eg a sack, tyre, hanging basket)
- **seeds or seedlings** for the types of crops to be grown in the garden
- **tools** to help prepare the soil, such as hoes or spades
- **sticks** to make a small hole in the ground to plant the seeds
- **water** for the crops
- **compost or fertiliser** (desirable if the soil is of poor quality)



Keys to success

- Ensure the quality of air, soil and water is good enough for growing food.
- Ensure there is a year-round supply of water available.
- Ensure that women are involved in planning and designing the garden – they are likely to be caring for the garden and preparing the food to be eaten.
- Be aware of any legal restrictions to urban agriculture in your area.
- If starting rooftop gardening, ensure the roof is strong enough to withhold the weight of the garden. Think also about safe access to the roof to tend the garden.
- If creating an allotment, ensure you have permission to use the land.
- Take care to decide upon the right crop selection and layout.
- Keep soil and plants healthy. Consider organic pest control and fertilisers.



Is urban agriculture suitable for your context?

- **What space is available?** Have a look around the home or at areas of communal land, such as by the roadside. Is there land that could be planted with crops? If space is limited, consider a sack garden (see below).
- **Is there a reliable water source?** Growing fruit or vegetables throughout the year involves watering plants when there is little or no rainfall. Some urban communities have to pay for water from local water points. This cost needs to be thought about before starting. Other water sources could include wastewater from the home or rainwater harvesting (see **Tool C2 - Rainwater harvesting**).
- **How good is the quality of air, soil and water?** Poor sanitation, polluted rivers and uncollected rubbish in some urban areas can lead to contamination of soil, air and water. This creates health hazards as well as reducing crop yields. Are there regulations in place to stop people dumping rubbish or polluting water and soil? Are the local authorities concerned about the safety of soil, water and air? If soil contamination is a risk, could clean and safe soil be transported from somewhere else instead?
- **Are there any legal restrictions to urban agriculture?** In some countries urban agriculture is illegal due to health and social concerns. This usually does not apply to small sack gardens. However, it is wise to check with local authorities whether there are any restrictions on, or regulations for, how land should be used.



What to do

Decide on the purpose

Home gardens have different purposes. These include providing food for the family or animals, and selling to make an income. If the purpose of the home garden is to provide food, what types of food are missing from local diets? A home garden can be an excellent way to make sure that families are eating a varied and nutritious diet.

- Roots and tubers such as cassava, yam and sweet potato are rich in energy.
- Legumes such as peas, beans and lentils provide protein, fat, iron and vitamins.
- Fruits and vegetables provide minerals and vitamins.

Ensure participation

Who should be involved in the design and planning of the garden? Ensure that the location, design and the choice of crops to be grown suits those who are likely to be caring for the garden and preparing the food to be eaten (usually women). Including children in this activity can be a good way of teaching them about healthy eating.

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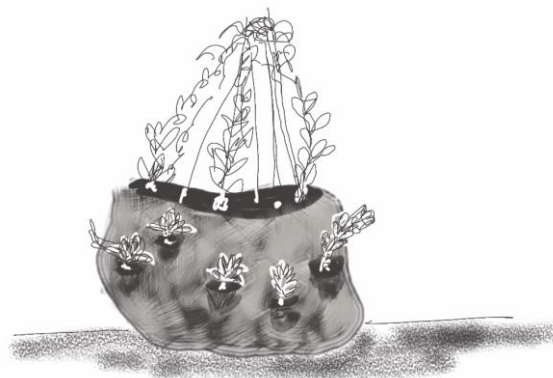
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Decide what type of garden is the most appropriate

There are many ways of doing urban agriculture depending on the amount of time, land, water and materials available. Here are a few examples:

- **Sack/bag gardens:** growing vegetables in earth-filled sacks outside the home.



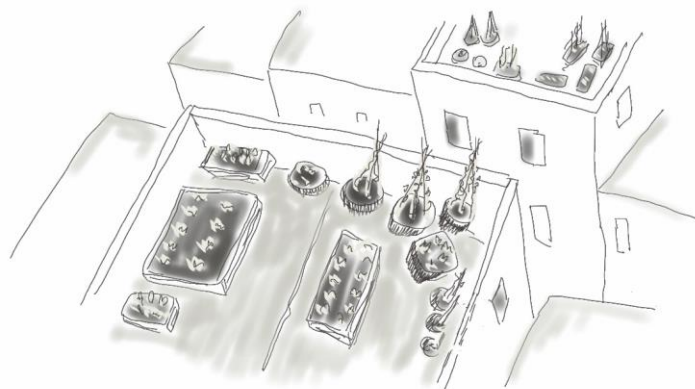
Creating a sack/bag garden

You will need: a sack or bag, soil mixed with compost, stones or rocks, a small cylindrical tin open at both ends, a trowel or shovel, seedlings and a knife. For more information on composting, see **Tool C2 – Composting**.

What to do:

- 1) Decide where to keep the sack garden - it will be hard to move once full of soil! Ideally it should be located near the home in an area which has both sun and shade.
- 2) Fill the bottom of the sack with soil, mixed with compost if available.
- 3) Put the tin in the centre of the sack and fill with stones.
- 4) Fill around the tin with more soil and compost.
- 5) Gently lift the tin up leaving the stones in a column in the centre of the sack. Put the tin back in the centre of the sack, and refill the tin with more stones.
- 6) Again, fill around the tin with soil and compost up to the edges.
- 7) Repeat with the tin, stones and soil until the sack is full. The stones will create a column in the centre of the sack which is used for water drainage.
- 8) Carefully, using a knife, cut small holes in the sides of the sack. Transplant seedlings into the holes in the sides of the sack and plant on the top. Seedlings can include cabbage, greens, onions and tomatoes.

- **Rooftop gardens:** soil is laid directly onto the roof of a building, or containers, pots or raised beds are placed on the roof. Before starting, it is important to check whether the roof is able to withstand the extra weight of soil, water and plants. A professional (such as an engineer working for the government or an NGO) should be asked to check this for you. It is also important to check with the landlord or building code whether there are any restrictions to growing plants on the roof of the building. You need to consider how people will access the roof and where water for the plants will come from.



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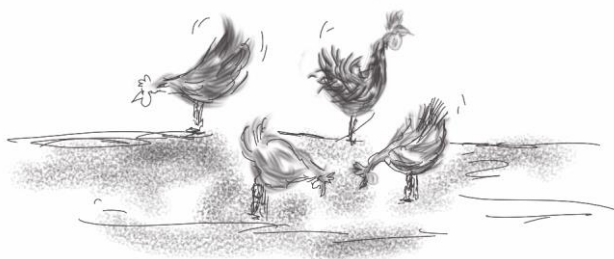
- **Windowsills or balconies:** an ideal location for growing small amounts of produce in containers or pots. These are often light and require smaller amounts of soil and water.



- **An allotment by the road or on other waste space:** using land that is not currently being used for productive purposes. Again it is important to check whether there are any restrictions to using the land for agriculture as some urban farmers have seen their land cleared or taken over by developers for new buildings. If a large piece of land is available, several households could come together to manage the land and share the load of watering, weeding and harvesting the produce.



- **Poultry keeping or dairy production** can be successful in many urban or peri-urban areas. Chickens are usually permitted in urban areas, but there might be limitations on the number and whether a rooster is allowed. There could be restrictions on other types of livestock, so check what is permitted before starting any project.



For more information see **Tool C2 – Keeping Livestock**, and **Tool C2 – Keeping Poultry**. However, there are additional considerations for urban areas such as where to access food and water for livestock or poultry and how to dispose of animal waste.

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Select the right crops

It is important to grow a variety of fruit and vegetables. It is also important to select a diverse variety of crops that are resistant to different pests and environmental changes. It is helpful if you select traditional local crops, but it may also be necessary to introduce new crops.

What crops grow well in the area? Are some varieties of fruit and vegetables more resilient to pests and diseases? What needs can be met through the home garden? For example, food, fodder, medicinal plants, shade etc? What are the soil conditions? What about the weather: is it changing? Is this knowledge within the community? Are there local experts you could ask for advice? Are there any home gardens already in the area that people could visit to learn from?

Keep soil healthy

The soil can also be improved through using compost (see **Tool C2 – Composting**), and through adding mulch (see **Tool C2 – Conservation agriculture**). Other ways of improving the soil can include removing large stones, and digging sand, if available, into clayey soil.



Choose the right layout for the garden

How much of each type of crop is needed by the household every week? Crops can be planted in stages (a few each week) so that you can harvest and consume from one area of the garden while the other crops grow. This helps keep a supply of different crops.

Can the home garden be laid out so that different types of crops can be rotated in different locations each year? For example, the plants in different containers could be changed (rotated) each year? Different plants require different nutrients from the soil and harbour different diseases. They also give back different nutrients to the soil. Rotating the crops will help improve the condition of the soil.

Intercropping different crops together is another way of improving the soil condition and helping to increase harvests by saving space. For example, beans and peppers mature at different rates and can be grown together. However, it is important to be careful as not all crops benefit each other; some can compete with each other which can reduce crop yields. Are there local experts, farmers, or neighbours with experience that you can ask for advice?

Plant at the right time

It is important to find out the best time to plant different vegetables and plants, especially if access to water is an issue. Some vegetables and plants (for example, beans, peas and carrots) can be directly sown into the garden using seed. Other vegetables (such as peppers, tomatoes and onions) survive better if they are grown in a nursery and then transplanted into the garden.

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Ensure the garden is cared for

Before the home garden can be planted, the soil needs to be prepared by removing the weeds. Regular weeding is also needed to ensure that the crops are able to grow and do not face competition for water, sun or soil. Many plants will also need to be watered, especially if they are grown in the dry season. Where water is scarce, use wastewater or collect rainwater. Working in the garden regularly helps to monitor progress and identify problems early. It also spreads the workload so you're not working too hard all in one go.

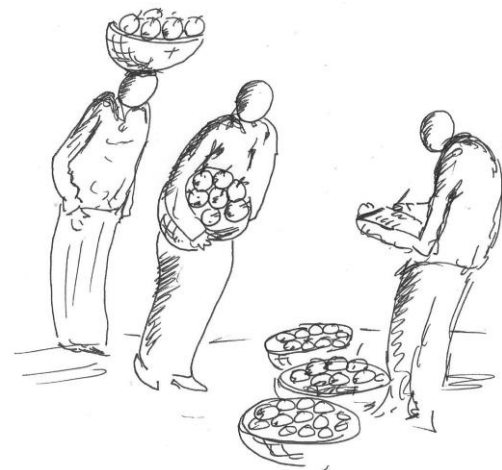


If plants in the home garden are affected by pests and disease, there are simple low-cost methods that many people say help with effective pest control. For example, a mixture of onion, garlic and water can be sprayed directly onto leaves, stems and fruit or applied to the soil around affected crops.

Can the home garden be used as a source of income?

Home gardens can provide a source of income for families when the surplus produce is sold. However, there are many important things to consider if this is part of the aim of home gardening.

You could also ask your neighbours if you could all work together. For example, you could each grow different crops and then share the produce with each other to feed your families and sell at market. This can reduce the workload and help build good relationships.



Please see **Tool C2 - Starting a business** for advice if you are planning on selling produce.

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Finding out more

For more on home gardening:

- Tearfund (1991) *Footsteps 7 -- Home gardens*
tilz.tearfund.org/en/resources/publications/footsteps/footsteps_1-10/footsteps_7/
- Tearfund (2002) *Footsteps 52 – Gardening for better nutrition*
tilz.tearfund.org/en/resources/publications/footsteps/footsteps_51-60/footsteps_52/gardening_for_better_nutrition/

For more information on nutrition:

- Tearfund (2003) *PILLARS Guide on Healthy eating*
tilz.tearfund.org/en/resources/publications/pillars/healthy_eating/

For more on managing pests and diseases:

- Tearfund (2014) *Footsteps 94 – Valuing food, Article on Natural pest management*
http://tilz.tearfund.org/en/resources/publications/footsteps/footsteps_91-100/footsteps_94

Related tools:

- A1 – Revealing environmental degradation: information for facilitators [*A1: Climate & environment-2*]
- A2 – Different ways of adapting to climate change [*A2: Climate & environment-1*]
- B – Caring for God's world (Bible study) [*B: Climate & environment-2*]
- B – Caring for our environment (Bible study) [*B: Climate & environment-3*]
- B – A wise choice of diet (Bible study) [*B: Food & livelihoods-1*]
- B – God's provision of healthy food (Bible study) [*B: Food & livelihoods-2*]
- C2 – Composting [*C2: Climate & environment-1*]
- C2 – Keeping livestock [*C2: Food & livelihoods-2*]
- C2 – Poultry keeping [*C2: Food & livelihoods-3*]
- C2 – Developing rural home gardens [*C2: Food & livelihoods-8*]
- C2 – Processing and preserving fresh produce [*C2: Food & livelihoods-11*]
- C2 – Rainwater harvesting [*C2: Water, sanitation & hygiene-1*]

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