GLOBAL ACTION PLAN

THE POWER OF GROWING OUR OWN

This project has been co-funded by Bridge 47 and The European Union

BRIDGE 47

INTRODUCTION

The Power of **Growing our Own**

Global Action Plan (GAP) Ireland is an award-winning not-for-profit organisation supporting schools, communities and businesses to take practical action to live as sustainably as possible. GAP is part of GAP International – a global network of organisations in over 27 countries that facilitate behaviour change to promote environmental sustainability.

Our mission is to support people to live more sustainable lifestyles by offering practical yet creative solutions that inspire people to act.

This resource - 'The Power of Growing our Own', has been designed to help community garden groups learn about organic and sustainable food production while promoting the United Nation's Sustainable Development Goals, also known as the 'Global Goals'. These were set up in 2015 and 193 countries committed to drastically improve conditions for people and planet by 2030.

The toolkit aims to bring Global Citizenship Education (GCE), Education for Sustainable Development (ESD), and Development Education (DevEd), already established in the formal education sector, to the non-formal adult education sector and community and voluntary sector. Our toolkit will upskill users in techniques for organic and sustainable food production, while promoting global sustainability issues and taking action. We don't believe that 'having knowledge for knowledge sake' is an efficient way to meet the Global Goals. That's why our toolkit encourages critical thinking, reflection, and direct action as a community. These are the factors that can truly make positive change. For the Global Goals to be reached, everyone needs to do their part; governments, the private sector, civil society, and you!

Through a multiplier effect we hope that this toolkit will continue to empower those within and beyond your community.

This resource has been written and edited by **Sharon Harvey** and **Áine Ferris** (Global Action Plan).

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FOREWORD

At GAP Ireland we believe that empowered individuals can make a difference!

The United Nation's Sustainable Development Goals (UN SDGs) have given us a universal set of global activities and a framework to build a better and more equal society for all. We all have a responsibility to become leaders and champions of these goals so that we can work towards ending poverty, protecting the planet, and ensuring equality and prosperity for all. In order to achieve these goals, GAP Ireland engages with different groups of Irish society and enables drivers of change to put the world on a more sustainable path.

This resource 'The Power of Growing our Own' introduces you to the benefits of organic methods of gardening, whereby through utilizing food waste to create compost (and other methods), we can explore how easy it is to integrate these sustainable tactics into your local community gardens. By aligning our work with the UN SDGs our local actions automatically create global connection, and this demonstrates the interconnectedness between the Goals and the impact local communities working together can have in tackling global issues. These are necessary steps to work towards, and achieve, a sustainable community, society and world for everyone, leaving no one behind.

We would like to thank and acknowledge the support of Bridge 47 and the European Union in developing GAP Ireland's resource 'The Power of Growing our Own'. The development of this resource would not have been possible without their support.

We hope this resource will empower gardeners, educators, and interested community members to grow into active global citizens and be the drivers of change to put the world on a sustainable path.

Eufemia Solinas
Chief Executive Officer

2 **INTRODUCTION**

4 **FOREWORD**

6 **CHAPTER 1:** KNOW YOUR SOIL

8 **CHAPTER 2:** COMPOST

10 **CHAPTER 3:** WATER WISE

12 **CHAPTER 4:** PLANTING FOR POLLINATORS

14 **CHAPTER 5:** LET'S START GROWING

16 **CHAPTER 6:** THE GLOBAL GOALS

01

Chapter 1:
Know Your Soil

Knowing your soil type is very important, as it determines which plants will thrive in your garden, which plants to choose, and what location is the best for your plant.

There are six main types of soil: chalky, clay, loamy, peaty, sandy and silt. One way to test your soil is to add water to it and then roll it in your hand; what does it feel and look like? Is it gritty, sticky, slimy or does it crumble?

Depending on the size of your garden, take samples from different areas as the soil can differ enormously across the site.

Here's how to identify some of the main soil types:

CLAY SOIL

Clay soils warm up slowly in spring and then go hard and crack when dry. They also drain poorly. They are very high in nutrients but can be hard to dig. They feel lumpy and sticky when wet. If you roll the soil into a sausage shape and it stays in that shape, then it is clay. Adding organic matter to clay soil will improve its structure and aid drainage.

SANDY SOIL

Sandy soils are free draining, very easy to work with, and warm up quickly in spring. However, they also dry out quickly and leach nutrients when it rains, so they need plenty of organic matter added to them in order to retain moisture, and to feed the plants. They are gritty to the touch. A rolled sausage of sandy soil will crumble easily.

SILTY SOIL

Silty soil is made from very fine particles, hence it is free draining while also retaining some moisture. It is higher in nutrients than sandy soil and compacts easily. Silty soil is smooth to the touch. It rolls into a ball easily, but won't keep its shape as well as clay soil.

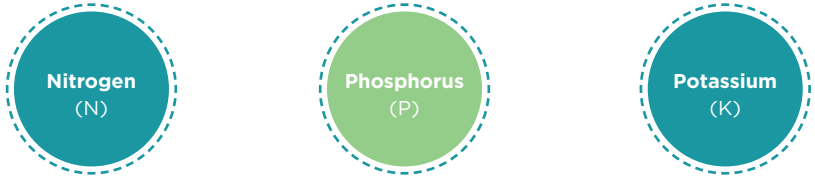
LOAM SOIL

Loam is the perfect soil type. It's easy to work with, is not too free draining or prone to waterlogging, and is packed with nutrients. It also warms up quickly in spring. Loam is made up of a mixture of clay, sand and silt, each of which have differently sized soil particles. It rolls into a ball easily, but won't keep its shape as well as clay soil.

DID YOU KNOW?

Most soils benefit from some help. You can do this by incorporating organic matter (e.g. manure or homemade compost).

THE BASIC NUTRIENTS REQUIRED BY PLANTS ARE:



For leaf and stem growth

For root growth and flower and fruit production

To maintain overall health of the plant

FERTILISERS

Well-rotted horse and cattle manure contain plenty of nutrients for plants. It can be added before planting or used as surface mulch around established plants.

FEEDING PLANTS

Use fertiliser granules such as seaweed or chicken manure pellets. Added to the base of planting holes of new plants will encourage good root establishment and growth in the first season. Balanced granular fertiliser can be applied around all established plants in spring, especially those growing in pots. Distribute it around the base of plants at the rate recommended on the packaging. Avoid getting granules on soft stems and leaves as it may scorch them.

LIQUID FEED

Fertilisers are also available that mix with water for liquid application. Liquid concentrates and ready-to-use liquid feeds are also available. These are quick acting as the plant roots can take in the dissolved nutrients with the water.

FOR VEGETABLE AND FRUIT GROWING

To ensure you are not depleting the soil of its fertility, feed plants according to those specific plant requirements with organic fertiliser pellets and liquid feeds.

This is only a very brief note on soils and fertilisers. There are many more factors at play when it comes to soils. Always read containers carefully and follow the instructions. Overfertilising is not recommended as too much of one element can prohibit the uptake of another in the plant.

FIND OUT MORE!

In addition to knowing your soil type (and fertility), you'll also need to check its pH. You can get information on how to check your soil's pH from the Teagasc website. If you have a large plot, it may be worthwhile getting your soil tested by a professional.

https://www.teagasc.ie/

02

Chapter 2: Compost

Compost is a nutrient-rich soil developed through a process called composting.

Composting speeds up the natural process by which things decompose. It does this by breaking down organic material that would otherwise end up in the bin. Naturally, these goods would be broken down through bacteria, fungi, worms, and centipedes. These decomposers consume decaying organic material and turn it into humus. This works as a conditioner for regular soil and helps your plants retain water and air better. Overall, compost is a great way to improve the quality of life in your garden.

THE BENEFITS OF COMPOSTING

You can purchase compost from a gardening shop, or you can make your own at home. Making compost at home takes a few months, and you will end up with a lovely pile of nutrients for your garden. You can use your food scraps or leftover food as the nutrient base for your compost. In doing so, you are turning what would be negative environmental and economic waste, e.g. food waste sent to landfill, into something beneficial. As a result, the choices you make in the supermarket go beyond helping your diet; they also help create a healthy growing environment for your garden.

1

LESS WASTE ENDS UP IN LANDFILLS

Food waste makes up 1/3 of household waste according to the EPA. When you use it to compost, you transform it from harmful to helpful for the environment. This means that 1/3 of the food that household's purchase is being thrown out. While there are parts of food such as certain skins, egg shells or leaves that are not typically eaten, this does not mean they need to end up in the bin. You can be proactive about your food scraps or waste by composting.

2

SAVE MONEY

Soil enricher costs start at €10 and go up depending on how much you need. Composting from home eliminates this upfront cost and provides as many nutrients. The average cost for brown bin removal is 23 cent per KG of waste + standing charges. So this means you PAY for food at the grocery store, PAY for it to be taken away and PAY AGAIN when you buy compost for your garden. That's paying three times for what you should only pay for once.

3

HEALTHY GARDEN, HAPPY PLANTS

Composting from home improves the soil structure of your garden.
If your garden has heavy soil, it helps improve drainage; if your garden has sandy soil, it adds organic matter and holding capacity.

HOW TO COMPOST

Composting from home is an easy process as you already have all of the ingredients. While everyone's compost will be a bit different as a result of the elements added to it, it is important to keep a good ratio between carbon-rich 'brown' compost materials and nitrogen-rich 'green' compost materiasl; the ideal ratio being 25/30 'brown' to 1 'green'.

CARBON-RICH 'BROWNS

- Plain cardboard
- Fruit waste
- Leaves
- Newspaper
- Sawdust
- Stems & twigs
- Straw

NITROGEN-RICH 'GREENS'

- Algae
- Kitchen food waste
- Coffee grounds
- Garden waste
- Grass clippings
- Hedge clippings
- Vegetable scraps
- Weeds (that have NOT gone to seed)

THINGS TO AVOID

- Meats
- Bones
- Fats/oils/grease
- Diseased plant material
- Coloured/dyed paper
- Coal/charcoal
- Pet waste

Once you have all of your ingredients, make sure to pile them together alternately: brown, green, brown, green, brown, green, etc. You can keep them in a big bin in the back of your house or have a pile set aside in your garden. Either way, make sure to flip or spin your compost every few months to maximise airflow and compost speed.

FIND OUT MORE!

For more information on composting check out: EPA: https://www.epa.ie/about/faq/

Stop Food Waste: https:/stopfoodwaste.ie/resource/composting-faq-2/

03

Chapter 3: Water Wise

HARVEST THE RAIN:

Take advantage of the water we get from nature.

Install water collection butts on any structure in your garden, they are not expensive and are easy to install.

Leave buckets and other containers around the garden to collect the rainfall.

MULCH:

Wind and heat evaporate the moisture from the soil around your plants. Mulching around the plants helps to keep moisture in the soil.

There are different types of mulch; use preferably organic mulches like bark or coir as they will break down and improve the soil structure as they are taken down into the soil by organisms such as worms. They need topping up each year.

GROUP PLANTS ACCORDING TO THEIR WATER REQUIREMENTS:

Group plants with similar water requirements together to make watering easier. This is the best way for your plants to thrive.

Bog plants like to sit in water-retentive soil, while herbs prefer well-drained sandy soil. Plants like succulents, for example, require little watering as they have the ability to hold water in their leaves for when it is needed. Water early in the morning or in the evening.

WATER WELL NOT OFTEN:

If you water little and often, the roots of the plant move to the surface of the soil to reach the water. In dry spells, the roots can dry out and the plants can die. Water less frequently and for longer so the water travels down through the soil to where the roots are. Remember to water at the base of each plant.

As a guide, put mm and cm markings along the side of a clear container i.e. the bottom half of a soft drinks bottle. Leave out to collect the rain. When the rain stops, see how many cm of rainfall fell. Relate this to the depth of the roots of your plant to gauge how deep the rain travelled into the soil.In Ireland, we usually get enough rain to sustain our gardens. Plants in pots and containers however need watering more frequently as they can't draw the water from the soil.

REUSE WATER:

When water is scarce, it's fine to use bath water or water you washed your hair with. Don't only use this type of water, and remember to flush with clean water intermittently.

Don't use water you washed your dishes with as this will usually contain fat and/or dairy, which is not good for the soil.

04

Chapter 4: Planting For Pollinators

As gardeners, we have the freedom to purposely plant beneficial plants that we wish to share and consume ourselves. Gardens are shared spaces – so how does what you plant impact other species?

Our pollinators (birds, insects, butterflies, and bees to name a few), rely on a variety of plants for food and longevity.

It is therefore our responsibility to ensure that our seeds are supportive of a bio-diverse future.

1. **ENSURE THE SEEDS YOU SOURCE ARE ORGANIC.** Support organisations such as "Seed Saver's Ireland" in purchasing local, chemical-free, open-pollinated seeds. Investing in your seeds is an investment in yourself. A one time investment will provide you with seeds for next year's productions if you adapt the good practice of seed harvesting. Pay it forward by sharing your local, organic seeds with other growers.

2. **PLANT NATIVE TO YOUR ENVIRONMENT.** The best source of nourishment for our hungry pollinators are plants that are indigenous to their environment. Consider planting a wildflower mix to invite more pollinators to your garden.

3. **PLANT FLOWERS THAT OFFER BEES AND OTHER POLLINATORS FOOD AT ALL TIMES OF THE YEAR.** Read labels and seed packets to determine bloom times and always ensure that you have flowering plants in your garden.

4. **PLANT VARIETY: SHAPES, SIZES, AND COLOURS.** The more variation you have in your garden, the more biodiversity you will invite. Consider that herbs and fruit trees are great sources of cluster food sources allowing pollinators to find an abundant food source in one location.

5. **INCREASE NATURE'S FOOD SOURCE.** Adopt pollinator systems e.g reduce your mowing and leave sections of longer grass. This will increase wild flower access for pollinators and increase opportunities for shelter.

CREATING SHELTER AND SAFETY FOR OUR NATIVE BEES:

Ireland has 97 wild bee species and it is no secret that a number of these species are at threat of extinction. Along with providing food sources, consider other survival techniques you can implement in your garden space to protect our bees.

SHELTER:

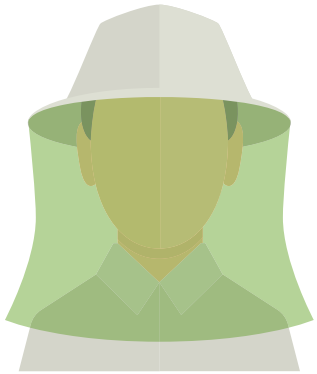
Not all bees house the same way! For instance, the Mining Bee requires bare ground to create holes in the earth for habitat.

Avoid woodchip cover on all of your beds as the woodchip is too thick for bees to break through to access the soil. Consider bare earth banks – the elevation adds further protection to the bee's habitat.

Other great alternatives are drilling holes in logs for cavity-nesting bees. And plant hedgerows as a safe location for Bumblebees to establish nesting.

SAFETY:

Elimate the use of pesticides (insecticides or herbicides). Consider the impact that chemical growing has on the environment, biodiversity, soil fertility and ultimately, our food and health. Take responsibility for manual weed control and appreciate the mindfulness of the moment to stop and care for your garden space.



For more information on specific bee pollinators, resources, and suggestions, visit: www.pollinators.ie

05

Chapter 5:
Let's Start Growing

The planning for a vegetable garden usually begins at the end of the previous year. So if you want to see vegetables in your garden next summer, you will need to prepare this coming winter.

HERE ARE SOME TIPS TO HELP YOU GET STARTED:

1. Cover the bare soil in your vegetable beds with cardboard, then cover it with a thick layer of mulch. When you leave this over winter, the card will break down and the mulch will get pulled into the soil by worms and other insects. What's left can be dug into the soil with organic fertilizer in spring. This protects the soil from erosion and rain and reduces weed germination. This means less weeding for you.

2. Order all the seeds you plan sowing in spring, or use seeds you have collected from your own crops in winter.

3. Plan your crop rotation (see chart below). This helps prevents the build up of pest and disease in the soil. Planting the same crop in the same soil year after year can deplete the soil of its fertility. Crop rotation can reduce the risk of this happening. There are many ways of growing vegetables to give your crops the best chance without using chemicals.

A. Polyculture: This is a way of growing crops in which more than one species is grown at the same time and place; it imitates the way plants grow in natural ecosystems. This is a sustainable form of growing because of its ability to control weeds and disease without the use of chemicals.

B. Companion planting: Companion planting in the garden is the planting of different crops in proximity for many different reasons such as pest control (i.e. planting carrots and garlic together). As the carrot root fly is attracted by the smell of the carrot, planting garlic (or other strongly scented plants like marigolds) can overpower the smell of the carrot preventing damage.

4. Plant families: There are thousands of plant families, but for starting a garden, the everyday crops listed below are the best to start with. You can design your vegetable bed for a 3 or 4-year rotation, however here we will explain a 4-year rotation. Start by dividing up the plot you intend to use into 4 equal parts for your crops. An example of plant families you can use are:

A. Brassicas: Brussels sprouts, cabbage, cauliflower, kale, kohl-rabi, radish, swede and turnips;

B. Legumes: Peas, broad beans. French and runner beans have fewer problems and can be grown wherever convenient;

C. Onion: Onion, garlic, shallot, leek;

D. Potato family: Potato, tomato, pepper and aubergine suffer from fewer problems and can be grown anywhere in rotation;

E. Roots: Beetroot, carrot, celeriac, celery, florence fennel, parsley, parsnip, and all other root crops.

THE BENEFITS OF CROP ROTATION:

Soil fertility: Crops have different nutrient requirements. Changing crops annually reduces the chance of particular soil deficiencies developing.

Weed control: Weed control: Some crops, like potatoes and squashes, that have dense foliage or large leaves, suppress weeds, reducing maintenance and weed problems.

Pest and disease control: Soil pests and diseases tend to attack specific plant families. By rotating crops the pests tend to decline in the period when their host plants are absent.

HOW TO DO CROP ROTATION:

Divide your vegetable garden or allotment into sections of equal size (depending on how much of each crop you want to grow). You can have an extra section for perennial crops such as rhubarb and asparagus.

Move each section of the plot a step forward every year so that, for example, brassicas follow legumes, onions and roots; legumes, onions and roots follow potatoes; and potatoes follow brassicas and Legumes.

A 4-YEAR CROP ROTATION CHART:

YEAR ONE	YEAR TWO	YEAR THREE	YEAR FOUR
Section one: Legumes	**Section one:** Brassicas	**Section one:** Potatoes	**Section one:** Onions and roots
Section two: Brassicas	**Section two:** Potatoes	**Section two:** Onions and roots	**Section two:** Legumes
Section three: Potatoes	**Section three:** Onions and roots	**Section three:** Legumes	**Section three:** Brassicas
Section four: Onions and roots	**Section four:** Legumes	**Section four:** Brassicas	**Section four:** Potatoes

06

Chapter 6:
The Global Goals

The UN Sustainable Development Goals have given us a universal set of global activities and an agreed framework within which to build a better and more equal society for all.

SUSTAINABLE DEVELOPMENT

Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

The Brundtland Report

We all have a responsibility to become leaders and champions of these goals so that we can work towards:

- Ending poverty;
- Protecting the planet;
- Ensuring equality and prosperity for all by 2030.

The important thing to remember about the 17 Global Goals is that when you act on any one goal, you will have an impact on the other goals too.

This is because the goals have been designed to interconnect. Just like in our own communities we are all interconnected and interdependent. Therefore, working together is the way forward for achieving sustainable development.

THE LOCAL POWER OF COMMUNITY GARDENS

When starting a community garden it is important to consider the significant impacts your garden will have for the community around you.

WHO IS THIS GARDEN FOR?

WHAT TYPE OF GARDEN DO I WANT?

WHO CAN HELP ME SET THIS UP?

WHAT CHALLENGES MIGHT I FACE?

In order to create a sustainable garden, that will continue to thrive among the community and into the future, we must consider the three pillars of sustainable development.

Using our over-lapping circles model, consider the positive and negative factors you may face with your own community garden.

FOR EXAMPLE:

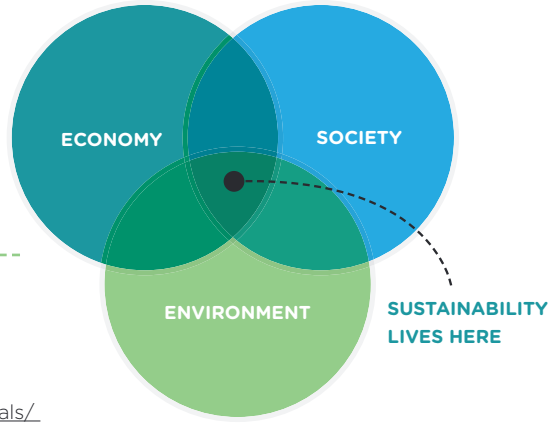
Economy: Where will I source the funding for the garden?

Society: Who will help me set up the garden?

Environment: How can I boost local biodiversity in my garden?

When you consider all these aspects in the planning stages of the garden, you will have considered the power local community gardens have to **transform society in a sustainable way.**

OVERLAPPING-CIRCLES MODEL



FIND OUT MORE!

https://www.iisd.org/topic/sustainable-development

http://globalactionplan.ie/about/un-sustainable-development-goals/

THE GLOBAL POWER OF COMMUNITY GARDENS

How can a local community garden impact the world globally?

At GAP Ireland, we believe that the small actions of many can lead to widespread impact for positive change. When we align our work with any of the Global Goals, we are immediately part of a global system working towards the betterment of our world.

A community garden can work towards the following indicators of these goals:

3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination

4.a Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all.

10.2 By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status.

11.5 By 2030, provide universal access to safe, inclusive and accessible green and public spaces, in particular for women and children, older persons and persons with disabilities.

12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses.

15.3 By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world.

OUR FAVOURITE WEBSITES

COMMUNITY GROWING NETWORKS

Dublin Community Growers

dublincommunitygrowers@gmail.com
www.dublincommunitygrowers.ie

HORTICULTURE EDUCATION CENTRES

Teagasc College of Amentity Horticulture

botanic.college@teagase.ie
www.teagase.ie

The Organic Centre

info@theorganiccentre.ie
www.theorganiccentre.ie

National Organic Training Skillset (NOTS)

info@nots.ie
www.nots.ie

BIODIVERSITY

All Ireland Pollinator Plan

pollinators@biodiversityireland.ie
www.pollinators.ie

National Biodiversity Data Centre

www.biodiversityireland.ie/contact-us/
www.biodiversity.ie

ORGANIC GROWING

Irish Organic Association

info@irishoa.ie
www.irishorganicassociation.ie

Irish Seed Savers

info@irishseedsavers.ie
www.irishseedsavers.ie

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