

11 tips to go green in the fresh fruit and vegetables sector

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Concerns about water resources, deforestation and supply chain transparency are increasing in the fresh fruit and vegetables (FFV) sector. These concerns affect the purchasing decisions of consumers in Europe, as well as the sourcing policies of importers and other actors in the supply chain.

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There are many ways the sector can become more environmentally friendly. This also benefits the farmers. Many farmers experience smaller harvests because of poorer soil quality. Employing more sustainable farming practices can improve the soil and lead to better harvests. Read more to find out what the opportunities are and how you can implement them to benefit the planet and your business.

1. Understand why going green is important

The FFV sector plays a crucial role in feeding the global population. However, like any industry, it also has an impact on the environment. As a farmer of fresh fruit and vegetables, you have the power to have a positive impact on the environment by implementing sustainable practices.

Global food system emissions account for [5.8 GtCO₂e, equating to 30% of the world's GHG emissions](#). Products of animal origin, like meat, dairy and animal feed, make up a large part of these emissions but fruit and vegetable crops contribute too.

The planet needs it

The fresh fruit and vegetable sector has a significant environmental impact. Becoming more sustainable can help reduce this impact and preserve natural resources for future generations.

There is growing evidence that climate change will affect the production of fresh fruit and vegetables. These

changes have consequences for fresh produce supply chains, due to its relatively short shelf-life, high-quality requirements and seasonality of supply.

The people need it

As the global population grows, there are concerns about the world’s ability to meet future demand for food. A more sustainable fresh fruit and vegetable sector could help ensure food security by preserving natural resources and supporting sustainable farming practices.

Fresh fruit and vegetables are essential components of a healthy and balanced diet. However, many conventional farming practices, such as the use of pesticides and fertilisers, can negatively affect human health. A more sustainable fresh fruit and vegetable sector could help ensure that these foods are grown in ways that are safe, healthy and nutritious.

Buyers and consumers increasingly require it

European consumers increasingly opt for organic and locally produced products. Some also avoid produce transported by air.

Supermarket chains are increasing their organic assortment and requiring importers and exporters to provide certification that demonstrates sustainability practices.

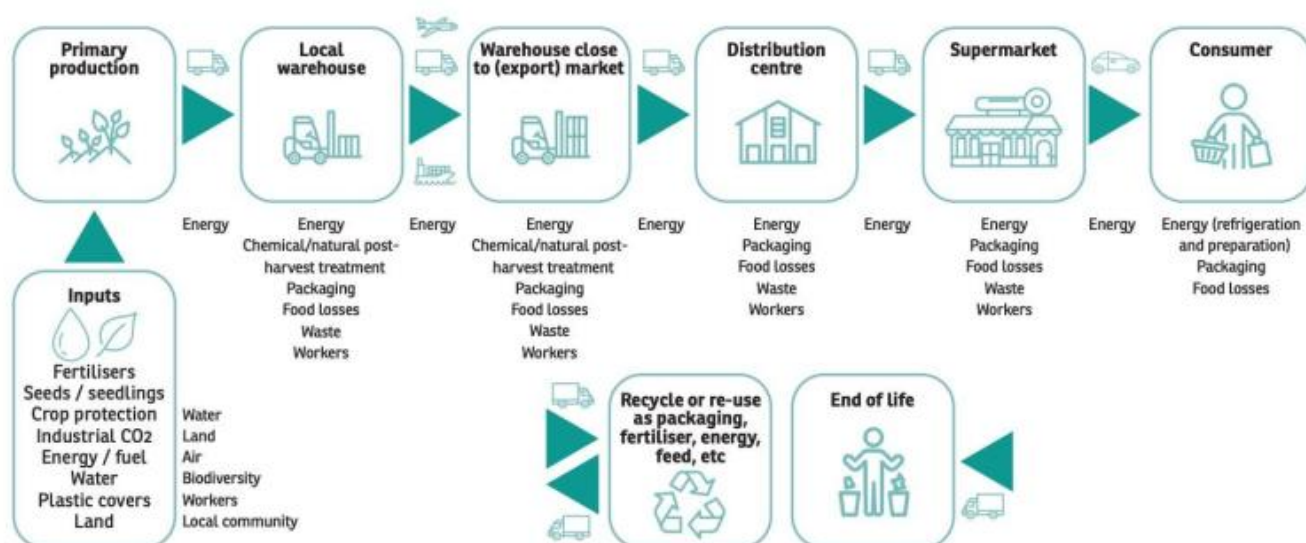
2. Find the key issues in your supply chain

Every step of the fresh fruit and vegetables value chain has a carbon footprint. This includes the production, post-harvest processing, packaging and transportation stages. The impact of every step will depend on the product, production location, destination market and transportation methods used.

Tomatoes grown in heated greenhouses have higher emissions than tomatoes grown outdoors. On the other hand, if the tomatoes grown outdoors are sent to their market destination by plane, this will cause further greenhouse emissions.

While you may not be able to influence every part of the value chain, you can control your impact in key areas such as inputs, primary production, shipping and packaging.

Figure 1: Sustainability impacts along the fresh fruit and vegetables supply chain (not exhaustive)



Source: [Rabobank 2020](#)

Transport and fertilisers are the biggest polluting factors

While research findings differ greatly, experts believe that [carbon emissions from transporting food are about 6% of the global total, with fruit and vegetables being the largest contributor](#). Fruit and vegetables have the highest food miles emissions because they often need to be refrigerated, and consumers demand out-of-season food.

Packaging and food waste are also polluting factors in the supply chain, as is the use of energy.

Then there are factors that are not necessarily polluting but disruptive to the environment, like water management, deforestation and soil depletion.

3. Optimise your transport, logistics and packaging

Reducing transportation emissions is critical for reducing the environmental impact of the fresh fruit and vegetable sector. European buyers and supermarkets are also increasingly avoiding airfreight. As an exporter, you have to make conscious logistical choices.

In terms of transport and logistics, you can:

- Use more fuel-efficient vehicles;
- Consolidate shipments;
- Optimise routes;
- Find ways to use efficient sea freight logistics;
- Use ways to keep fruit and vegetables fresh (like innovative packaging);
- Choose varieties that allow international shipping by sea;
- Optimise your packaging for energy-efficient transport; and
- Follow your buyer's advice and needs

The energy used to pack the produce and the emissions produced by producing the packaging are important too. Using packaging material with lower emissions can help improve the balance of the supply chain.

Switching to more sustainable ways of packaging can be a risk because it is often more expensive than traditional packaging, but it can also be an opportunity. Many buyers appreciate more sustainable packaging.

Figure 2: Example of sustainable packaging



Source: Globally Cool

This is what can you do in terms of packaging:

- Use packaging material with a low carbon footprint like [cardboard instead of plastic](#).
- Search for innovative packaging methods. Visit packaging industry events to stay on top of trends and innovations in packaging.
- Try sourcing your packaging materials from local companies to reduce the transportation-related emissions.

4. Using sustainable farming practices

According to industry experts, the biggest wins can be achieved by investing in sustainability practises in the primary production process.

Sustainable farming refers to using resources, including land, fertile soil and wildlife, in a way that allows for renewal without depleting or polluting other resources. 2 key sustainable farming methods are organic farming and regenerative agriculture.

Implementing [regenerative agricultural practices](#) like inter-cropping (growing 2 or more crops in the same field), reducing or stopping tillage, crop rotation and precision agriculture (reducing chemical and biological input) improves soil health, fostering high productivity of high-quality food, and contributes to mitigating climate change and restoring biodiversity.

Organic agricultural practices can reduce the environmental impact of farming. These can include avoiding synthetic pesticides, crop rotation, composting and natural pest control. Additionally, using renewable energy

sources to power irrigation and farm equipment can help reduce the carbon footprint of farming operations.

What can you do:

- Try to use green and organic input;
- Try sourcing your agricultural input from local companies to reduce transport-related emissions;
- Pay attention to measuring input and storing it properly to reduce waste and overapplication;
- Use technology that helps you optimise the use of input and reduce emissions and costs. For example, you can use [satellite data to make decisions about fertiliser application](#);
- Reduce your carbon footprint with renewable energy sources and low-emission/energy-efficient machinery;
- Optimise moving machinery across the farm to reduce energy use;
- Reduce soil disturbance like tillage. This might [work differently depending on the type of crop](#) and weed pressure, so you might want to start experimenting with the low-tillage variants;
- Educate yourself on the use of fertiliser. For example, you can read reports on [reducing emissions from fertiliser use](#).

Water management

Agriculture is a major water user, and inefficient water use can put pressure on limited water resources. Good water management can help increase crop yields and profitability while also protecting natural resources. Good practices include drip irrigation, which delivers water directly to the plant roots, rainwater collection, [diverting surplus water from fields](#) and using natural stream beds to control water flow.

Reducing food waste

A significant amount of fruit and vegetables go to waste due to factors such as spoilage, damage during transport and cosmetic imperfections. By implementing better inventory management and storage practices, as well as improved packaging and transport methods, food waste can be minimised, thereby reducing environmental impact.

Avoid deforestation

Deforestation is a major driver of biodiversity loss, soil erosion, reduction of carbon sequestration and ultimately [climate change](#). Companies should avoid clearing forest land for farming.

5. Optimise your soil quality

Soil optimisation is important in organic farming because healthy soil is essential for healthy plants. Organic farming relies on natural methods for fertilisation and pest control. The soil plays a critical role in providing nutrients and supporting plant growth. When soil quality is optimised, it is rich in organic matter, has a healthy balance of nutrients and is able to retain moisture.

Optimising soil in organic farming typically involves practices like [crop rotation](#), [cover cropping](#) and using [organic fertilisers and soil amendments](#). These practices help to maintain soil health, improve soil structure and promote the growth of beneficial microorganisms in the soil. By optimising soil, organic farmers can produce high-quality crops that are healthy and nutritious whilst also maintaining the long-term health of the soil and the environment.

In contrast, conventional farming often relies heavily on chemical fertilisers and pesticides that can degrade soil quality over time. Organic farming and soil optimisation are important for sustainable agriculture, which aims to support the long-term health of the environment, the soil and the people who rely on it.

Adopting [regenerative agriculture](#) practices is 1 way to optimise your soil quality. Regenerative agriculture is an outcome-based food production system that nurtures and restores soil health, protects the climate and water resources and biodiversity and enhances farms' productivity and profitability.

Tips:

[Organic Africa](#) has some interesting sources, like [this poster on how to prepare organic compost](#). They are also working on a poster about how to prepare liquid fertiliser. Keep an eye on their website to find out when it will be published. Read the many online examples about crop rotation for fresh fruit and vegetables, like this one about [crop rotation for melons](#), this one about [crop rotation for vegetables](#) or [worksheets on organic soil amendments and fertilisers](#).

Learn from the many online resources about [regenerative agriculture for fruit production](#), [regenerative agriculture for vegetable growers](#) and similar articles that share [the experiences of farmers who switched to regenerative agricultural practises](#).

6. Become a certified fresh producer

1 step in becoming a greener fresh producer is getting green certification. Complying with sustainable, green standards has become common for all fresh fruit and vegetables.

Becoming a green certified producer is a good idea because:

- It shows your commitment to environmentally responsible farming practices. This gives you a competitive advantage over growers that do not have this certification.
- Certification bodies take you through step-by-step processes. It is very likely that they will address issues that you have not thought of yourself.
- Certification can improve access to markets that prioritise sustainability, including retailers, food processors and exporters.

Organic

If you want to sell your products as organic in Europe, they must be grown using organic production methods that meet the [European legislation](#). Growing and processing facilities must be audited by an accredited certifier. You can only put the European Union's organic logo on your products after receiving certification. The same counts for logos (if you are applying for those as well), for example, of the [Soil Association](#) in the United Kingdom or [Naturland](#) in Germany.

Importing organic products to Europe is only possible with an [electronic certificate](#) of inspection (e-COI). Each batch of organic products imported into the EU has to be accompanied by an electronic certificate.

GlobalG.A.P.

[GlobalG.A.P.](#) is third-party certification and is the standard for good agricultural practices. It has become a non-negotiable requirement for imported fresh produce sold in supermarket chains in Europe.

Other common certifications for FFV products are [BRCGS](#), [IFS](#) and similar HACCP-based food safety management systems for packing and processing facilities. Using management systems recognised by the [Global Food Safety Initiative \(GFSI\)](#) is highly recommended.

Retailer standards

Retailers can also impose individual sets of standards, like [Tesco Nurture](#). Larger retail chains in Northern Europe in particular will be more prepared to buy your product if your compliance with their social and sustainability standards is in order.

2 examples of companies from Latin America that have very strong sustainability policies are [Danper](#) and [Uniban](#).

Seek support, for example from SIFAV

[SIFAV](#) is an international multistakeholder platform where public and private parties commit to sustainability targets for 2025. To accelerate the progress towards achieving these targets, they have a budget for trying out new ideas through various projects, such as their project to reduce environmental impact. SIFAV is a gathering of different companies, both physical and online, that exchange their experiences and learn from each other.

[Their environmental programme focusses on 3 pillars of environmental sustainability for the fruit and vegetables sector](#): carbon footprint, water management, and food loss and waste reduction.

Tips:

Familiarise yourself with the [organic guidelines](#) and [organic farming in Europe](#) before getting into the organic trade.

Remember that certifications are not free. The costs for certification are charged to the producer (you).

Get the most out of your certification. Certification programmes that promote sustainable agriculture, such as Fairtrade or Rainforest Alliance, can provide access to markets and buyers interested in sustainably produced goods.

For more information on certification of specific fresh produce, refer to the specific documents (for example about mango, tropical fruit and avocado) on the [CBI's market information page](#).

Figure 3: Strawberries in a wooden crate



Source: Photo by [Johnny Martínez](#) on [Unsplash](#)

7. Stay on top of new green European legislation

It is important to stay on top of green European legislation. Governments in Europe are continuously working on new legislation for the fruit and vegetable sector. This legislation increasingly concerns sustainability practices.

The European Due Diligence Act and the European Green deal are 2 of the most important green legislations in the European Union.

European Due Diligence Act

Responsible and sustainable business and fair treatment of all people in the supply chain are becoming very important. To encourage companies to take action to ensure human rights and reduce environmental impacts in their supply chains, the European Union (EU) made [legislation on due diligence](#). This legislation ensures human rights and the environment are respected throughout the supply chain.

This law is not specifically aimed at fresh fruit and vegetable producers, but they may be affected if they sell their products to companies that are subject to the law.

Companies that are covered by the European Due Diligence Act will have to carry out checks along their supply chains to ensure that their products do not contribute to human rights abuses or environmental harm. This means that they may start to ask their suppliers (you), to provide more information about their farming practices and the impact of these practices on people and the environment.

In the long run, the European Due Diligence Act should encourage FFV producers to adopt more sustainable farming practices and to be more transparent about the impact of their activities. However, there may also be some costs associated with complying with the new requirements, and smaller farmers in particular may find it challenging to meet the demands of larger companies.

The European Green Deal

In the coming years, the [European Green Deal](#) will influence how resources are used and greenhouse gas emissions are reduced. The new EU policies on sustainability will prepare Europe to become the first climate-neutral continent by 2050.

The [Farm to Fork Strategy](#) is at the heart of the European Green Deal. It aims to make food systems fair, healthy and environmentally friendly. It will ensure sustainable food production. EU trade agreements, for example with Costa Rica ([Central America](#)), already include rules on trade and sustainable development. Other countries are expected to follow. For suppliers of fresh fruit and vegetables, it is important to look ahead to the increasing standards and try to be at the forefront of the developments.

Tips:

Read more about the European Green Deal and the Farm to Fork strategy in the CBI's study [The EU Green Deal - how will it impact my business?](#)

Read the CBI's article on [the European Due Diligence Act](#) for more information on that subject.

For more information on buyer requirements for fresh produce, read the document [Buyer Requirements for Fresh Fruit and Vegetables](#).

8. Be aware of the challenges

As a producer of fresh fruit and vegetables you will encounter challenges when switching to sustainable farming practices. You will need to find a new balance in your farming costs, yield and the price you receive for the sustainable products. How can you remain profitable?

Switching from conventional to regenerative agriculture can lead to initial yield reduction, depending on the crop and local conditions. However, many producers have found that after 1 or 2 years of transition, their [yields return to normal](#) or are even higher than before. On top of that, regenerative fields perform better in drought periods because the soil can absorb more water. In organic agriculture, [yields are lower](#) than in conventional agriculture. Nevertheless, as the market prices for organic products are higher, some companies that sell organic produce have higher incomes. Regenerative and organic farming tend to have higher labour requirements, but no or hardly any costs for pesticide and fertiliser. Depending on the crop, the yield is usually lower, but profitability is higher in comparison to conventional farming practices.

In order to get these higher prices for your sustainable or organic product, you need to meet buyers' requirements and invest in certification. This can be a challenge, especially if you are still in the phase of the initial yield reduction.

Farmers that want to change from conventional to sustainable farming practices have to gain new knowledge and skills, both for themselves and for the employees. Knowledge about soil, crop rotation and disease management is necessary for success. This is another challenge that needs time and investment.

Tips:

Check out the [overview of certifications](#) in the CBI's Buyer requirements study.

Read this [article about diversified crop rotations](#) about reducing pest pressure and balancing the soil ecosystem.

9. Make use of green innovations

Agriculture is a big industry, and new technologies are constantly hitting the market, offering solutions for farmers. As the relation between agriculture and climate change has become clearer, many new developments that target this issue have taken place, providing opportunities to be more sustainable. Precision agriculture that uses technology offers opportunities for better efficiency in terms of input use for resources like water and fertilisers. On the other hand, new sustainable methods for disease control are being researched to provide more environmentally friendly alternatives to farmers.

The [Alliance for a Green Revolution in Africa \(AGRA\)](#) and [CropIn](#) launched a project for smallholder farmers in Ghana, Nigeria, Burkina Faso, Mali, Tanzania and Mozambique. The project aimed to provide digital solutions promoting climate change mitigation and resilience. In the 6 countries where it was launched, CropIn's platform facilitated the digitalisation of end-to-end agricultural operations. This involved geotagging agricultural plots and digitising farm and farmer data, making this easily accessible through a centralised cloud platform. The platform also provided farmers with tailored support through a Package of Practice (PoP), which included agricultural input tracking, providing guidance on optimal sowing periods and issuing timely pest and disease alerts to prevent crop loss.

Tips:

Look at companies similar to yours that are already engaging in sustainability efforts. You can learn from their experiences. Perhaps you can help each other improve.

The [UDNP has a report about precision agriculture for smallholder farmers](#) that describe the current alternatives to implement precision farming.

When attending international trade shows, look for new solutions and ask the manufacturers for options for your type of crop. Very often, new developments are put on the spotlight in presentations, so pay attention to shows' academic programmes too.

For more information on how to use digital tools to achieve progress in precision agriculture (for example, how to use the right amount of chemicals), read the document on [tips to go digital in the fresh fruit and vegetable sector](#).

Figure 4: Packed green beans from Kenya



Source: Globally Cool

10. Incorporate green principles in your code of conduct

Codes of conduct (COC) are a set of guidelines adopted by an organisation to address what behaviours are expected and appropriate. Every company should have a code of conduct. By incorporating green principles into your code of conduct, you can demonstrate your commitment to sustainability and promote a more environmentally responsible industry. As such, it is a good idea to rewrite the COC of your organisation and add your new green principles.

Your code of conduct should include information about:

- Your company's values;
- Behaviour guidelines;
- Day-to-day business practices; and
- How your employees should interact with external parties.

The company [Nature's Pride](#) supplies fresh produce to retailers and wholesalers in Europe. They have a [code of conduct](#) on their website that outlines their commitment to sustainability and social responsibility. The code covers areas like environmental management, working conditions and responsible sourcing, and it includes specific requirements for suppliers and growers.

It also includes a section on 'Green Initiatives', which highlights the company's efforts to reduce their environmental impact through measures like creating energy-efficient buildings, sustainable packaging and reducing food waste. The code is available in multiple languages and includes a reporting mechanism for any violations or concerns.

Tips:

Encourage sustainable behaviour among your employees and customers by promoting recycling, reducing waste, and conserving energy. This can be done through training, education and communication.

Engage with your suppliers to encourage sustainable practices throughout the supply chain. This includes promoting sustainable farming practices and reducing the use of harmful chemicals.

Monitor and report on your environmental performance regularly. It should include your greenhouse gas emissions, water usage and waste generation. This can help identify areas for improvement and demonstrate your commitment to sustainability.

Go to the Valamis website to read their article about [what to include in your code of conduct](#).

11. Find funding, investors and/or partners

As a farmer of fresh fruit and vegetables based in a developing country, it can be interesting to find funding, investors or partners to support your sustainability efforts. There are several approaches that may be of interest.

NGOs or non-profit organisations

NGOs or non-profits that work with farmers to promote sustainable agriculture often offer funding or technical assistance. Examples of organisations include the [World Bank](#), the [International Fund for Agricultural Development](#) (IFAD), [GIZ](#) and the [CBI](#). They provide funding and technical support to SMEs in developing countries. This usually happens as part of projects that involve funding, training and technical assistance, but are limited in terms of time. Because of this, SMEs have to research what new projects are being launched in their regions.

You can strengthen your network around organisations supporting farming, development and exports. These are often selected by international NGOs to implement projects that can include grants and other types of business support. Make sure to look for new project openings and to register in their databases so they can contact you for upcoming opportunities.

You can find support from agricultural and national development banks. Agricultural banks are specialised in giving loans to companies in the agricultural sector. [The Agricultural Bank of Egypt](#), for example, provides special loan types and services for agricultural activities and has branches in rural areas in Egypt. Start looking in your country's agricultural or development bank. These institutions often have special schemes for the agricultural sector.

Look for government programmes or grants that promote sustainable agriculture and offer funding or technical assistance to farmers. The [Vosieda programme in west Africa](#), for example, offers funding for fresh fruit and vegetables.

[The Rural Entrepreneurs in Agri-Food \(REAF\) programme](#), funded by the GIZ and implemented by Berytech in Lebanon, aims to enhance the business and product viability of innovative start-ups that focus on sustainable rural economic development in South Mount Lebanon, as well as Central and West Bekaa. This project includes financial grants for the participating start-ups.

Seek out investors or partners who are interested in supporting sustainable agriculture projects. This could include impact investors, socially responsible investors or companies that have sustainability goals. You can also collaborate with other farmers or cooperatives to pool resources and expertise to implement sustainable agriculture practices.

Consider crowdfunding to raise money from a community of individuals passionate about sustainable agriculture.

Tips:

Attend sustainability-focused events or conferences to network with potential partners or investors and learn about funding opportunities.

Consider partnering with universities or research institutions to access funding or technical expertise to implement sustainable agriculture practices.

Consider becoming a member of [IFOAM](#). You can also use their website (free of charge) to find a comprehensive and detailed database of third-party certification bodies, foundations, cooperatives, charities, umbrella organisations, farmer associations, NGOs, business associations and research institutes.

[Globally Cool B.V.](#) carried out this study in collaboration with [ICI Business](#) on behalf of CBI.

Please review our [market information disclaimer](#).