

GREEN RETAIL

A HANDBOOK FOR RETAILERS
IN MAURITIUS



Funded by
The European Union
(EU)



UNIVERSITY of
MAURITIUS



Food and Agricultural
Research and Extension
Institute



COLLABORATING CENTRE ON SUSTAINABLE
CONSUMPTION AND PRODUCTION

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About Switch Africa Green

African countries are actively engaged in the transition to an Inclusive Green Economy, and in promoting a shift to sustainable consumption and production (SCP) patterns, that together contribute to poverty eradication and sustainable development in the region.

The SWITCH Africa Green project is developed and funded by the European Union to support African countries in their transition to an inclusive green economy and in promoting a shift to Sustainable Consumption and Production (SCP) patterns and practices while generating growth, creating decent jobs and reducing poverty. The objective will be achieved through support to private sector led inclusive green growth. UNEP in collaboration with UNDP and UNOPS is implementing the SWITCH Africa Green Project covering 6 pilot countries Burkina Faso, Ghana, Kenya, Mauritius, South Africa, and Uganda. Other partners include the African Union Commission, the African Roundtable on SCP (ARSCP) and the African Development Bank (AfDB).

The Ministry of Environment, Sustainable Development, Disaster and Beach Management is responsible for the implementation and coordination of the project in Mauritius. The identified priority sectors are for the Switch Africa Green Programme in Mauritius are Agriculture, Manufacturing, Tourism with Energy, Water, Eco Innovation, Eco Labelling and Sustainable Trade as cross-cutting issues.

About the Project:

Promoting Sustainable Local Agriculture through Green Retail & Green Hospitality

This project is one of the country-specific projects of the SWITCH AFRICA GREEN (SAG) Programme in Mauritius aiming at supporting transformation towards an inclusive green economy by enabling MSMEs, including small planters, to start and develop resource efficient and green business based on sustainable production practices. Its foundation is fundamentally based on the growing concern for safe and healthy foods and the need to reduce environmental impacts related to fresh fruits and vegetables (FFV) production and distribution in Mauritius. Moreover, the Government of Mauritius is implementing a Green Agricultural Certification Scheme through the farm certification MauriGAP (MS184:2015), acronym for Mauritius Good Agricultural Practices, to promote sustainable agricultural practices and safe food. However, to support this government initiative and ensure small growers buy in, there is a need for greater pull from the market, especially retailers, wholesalers and hotels.

The aim of this project is to promote sustainable local food in Mauritius by leveraging channel power of retail & hotel sector to drive sustainable food consumption and production, add value to local food and improve livelihood of small holder farmers. The project shall complement the Green Agricultural Certification Scheme.

The partners in this project are the University of Mauritius (UoM), the Food and Agricultural Research Extension Institute (FAREI), and the Collaborating Centre on Sustainable Consumption and Production (CSCP) in Germany.

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Context handbook

This handbook has been developed under the SWITCH Africa project “Promoting Sustainable Local Agriculture through Green Retail and Green Hospitality” (SUS-AGRI). The SWITCH Africa Green programme supports 6 countries in Africa to achieve sustainable development by engaging in transition towards an inclusive green economy, based on sustainable consumption and production patterns, while generating growth, creating decent jobs and reducing poverty. This is to be achieved through support to private sector-led inclusive green growth. The overall objective of the SUS-AGRI project is to promote sustainable local food in Mauritius by leveraging the channel power of retail and hotel sectors to drive sustainable food consumption and production, add value to local food and improve livelihood of small holder farmers.

Two volumes of this handbook have been developed, one for retailer companies and a second one for hotels in Mauritius. This handbook targets retailer companies in Mauritius which sell FFV who are willing to assess sustainability risks and opportunities, instil green practices in their supply chains and engage consumers for more sustainable lifestyles.

Why this handbook?

Retailers are in a powerful position to influence patterns of Sustainable Consumption and Production (SCP) and improve their market position through sustainability activities. Furthermore, they can play a vital role in motivating the adoption of GAP (Good Agricultural Practices) by their suppliers and influencing sustainable consumption patterns with their customers. The tools provided will support retailers in Mauritius on their journey towards more sustainable business practices.

First of all, the Hot Spot Analysis is an easy-to-use tool that allows retailers to identify risks (social, health and environmental) and opportunities (green marketing) linked to products they sell. Knowing of most relevant risks and opportunities paves the way for further sustainability actions. Sustainable Supply Chain Management (SSCM) comprises diverse action areas and tools which can be used to work with supply chain actors towards improved and greener supply chains. On the consumer end, tools for marketing and consumer engagement aid to communicate benefits of more sustainable consumption to customers buying products (and in the current case GAP-certified) in retail stores and more generally demonstrate to them that the retailer has integrated sustainability into its business.

Scope of the handbook

The handbook provides a range of easy-to-use tools and systematic approach that guide you to become more sustainable and tap business opportunities related to corresponding actions. In particular, one of the goals is to improve procurement according to sustainability criteria. However, it needs to be acknowledged that this handbook follows the focus of the SUS-AGRI project by paying special attention to fresh fruits and vegetable products, although most of the tools described can also be used to analyse, improve and communicate other product groups and related practices. In addition, the handbook must be seen as a first entry point and detailed implementation of tools highlighted in this handbook might need further expert assistance.

Structure of the handbook

Following the introduction chapter, the handbook highlights sustainability tools under three different modules. The first module will provide the hot spot analysis, a tool that allows retailers to understand supply chains of FFV products, and assess and evaluate related risks and opportunities. The second module highlights several tools for Sustainable Supply Chain Management, all aiming to foster sustainability in your supply chains by improved ecological, social and economic performance of supply chain partners and practices. The third module deals with marketing and consumer engagement. This part will highlight tools and strategies that retailers can implement for helping consumer to recognise, engage with and be loyal to sustainable local produce. Throughout the handbook, examples of applications and case-studies illustrate the theoretical content.

Expected learning outcomes

- Learn how to use hot spot analysis in order to understand the sustainability perspective on product's life cycle
- Understand how to adopt life cycle thinking
- Discover how to identify and prioritise sustainability risks in product's life cycle
- Embark on finding solutions to identified sustainability risks

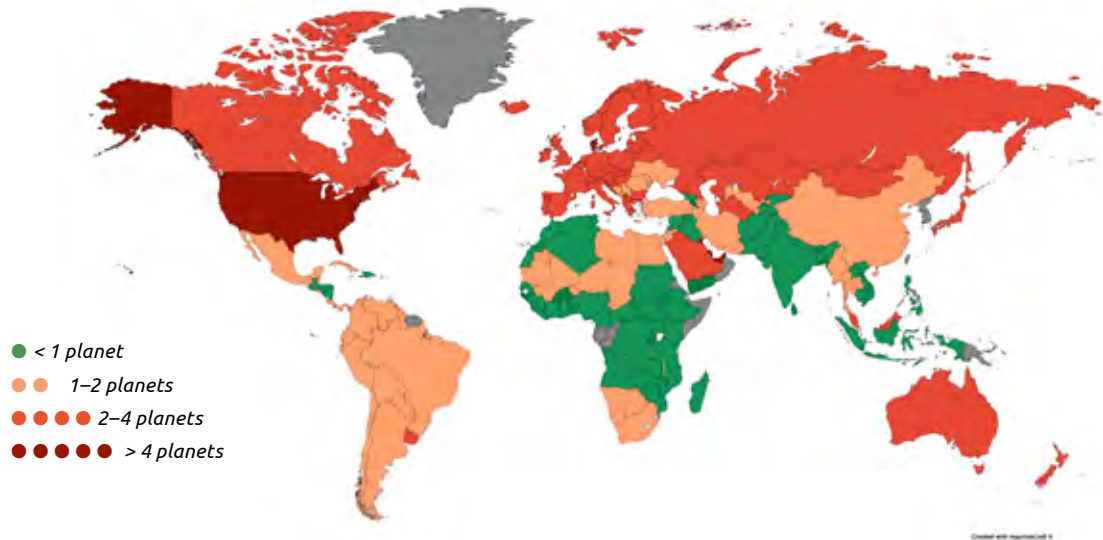
We only have one planet

Today the quantity of resources that we consume globally and the waste that we generate require the equivalent of 1.5 planets. This means that it takes the Earth one year and six months to regenerate what we use in a year (Global Footprint Network 2014).

Consumption patterns are not equal across the globe. The highly industrialised and developed countries (e.g. Europe, North America, and Australia) consume significantly more than transition and developing countries in South America, Africa and large parts of Asia.

Our ecological footprint has been consistently on a rise. Consumption patterns are increasing rapidly in transition economies due to the growing middle class consumers and associated demands for supporting services and infrastructure (e.g. China, India).

Figure 1:
Today's resource
consumption
created with
mapchart.net ©

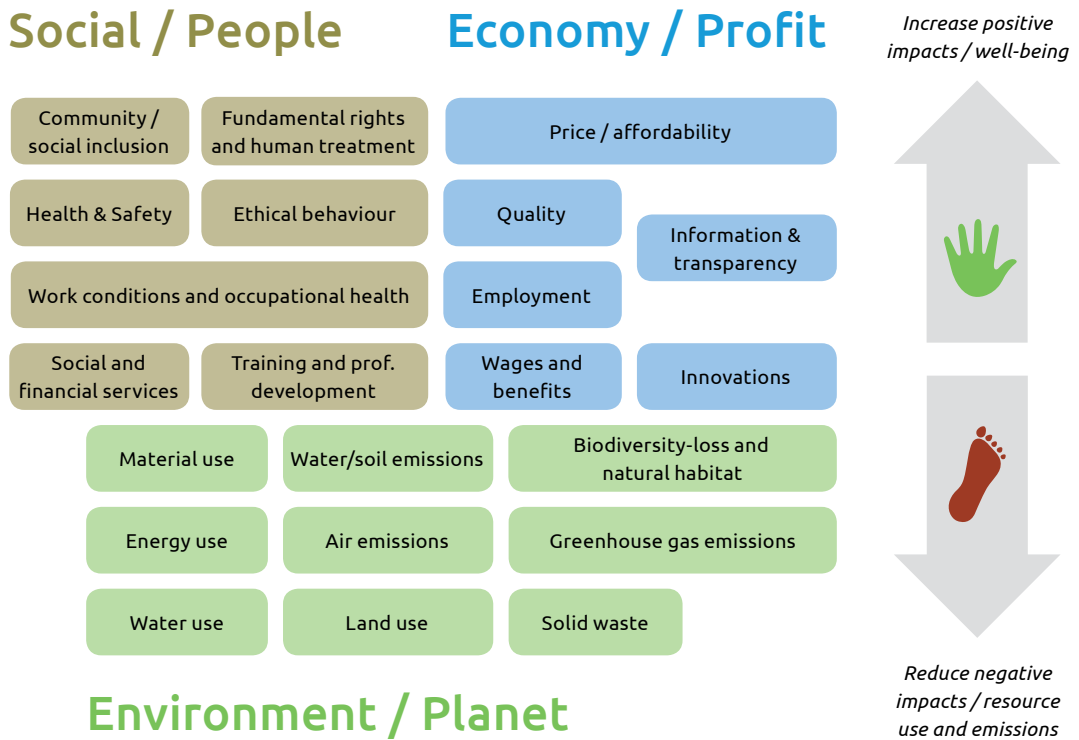


Private companies can play an important role in changing today's patterns of resource intensive consumption and production and embark on a pathway towards a sustainable development. Sustainable development is a "...development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland Report 1987). For achieving sustainable development, it needs action in economical, ecological and social dimension, which are interconnected and characterized by mutual interdependence. To the three dimensions of sustainable development is also often referred to as Planet, People, Profit.

The ecological dimension includes the adaptation of business practices in support of the protection of ecological sphere and preservation of biological carrying capacity of the planet and relates among others to environmental sound uses of resources and materials (input-dimension), and the reduction of emissions and solid waste (output-dimension). In the social dimension actions aim to achieve social stability and equitable distribution of welfare gains and chances of life. It deals with the distribution of basic commodities and rights such as

health, social security and working conditions. The economical dimension relates to preservation of material and immaterial sources of life, among others fair competition and share of benefits. Actions in all three dimensions aim to minimise negative impacts while maximising positive impacts and well-being. A combined socio-economic dimension is the improved livelihood of small business including farmers and smallholders.

Figure 2:
Action areas
of sustainable
development
Source: CSCP



Sustainability and Good Agricultural Practice (GAP)

Whereas the reader ought to refer to Annex I on MauriGAP, the introduction and application of GAP into the farming sector is a significant step towards sustainability. It draws attention to food safety and environmental aspects of food production.

Sustainability and retailers

Retailers depend on supply chains to deliver their promised produce to their customers. For this reason, managing the supply chain and dealing with supply chain risks and opportunities has always been an important task to restore reputation and market performance. Since sustainability has gained importance over the recent years, retailers have started to review their business practices from a sustainability angle and manage ecological, social and economical impacts. This includes responsible use of resources, limitation of emissions, management of hazardous substances, ensuring safe workplaces, no discrimination, fair payments, adequate benefits, fair pricing, green marketing and consumer education towards sustainable lifestyles. In this context, it is important to understand that retailers are positioned in a key position for sustainability.

Their position at the interface between production and consumption allows them to work upstream with their suppliers in order to improve their production practices. For instance, among others upstream practices they can assess sustainability opportunities and risks at their suppliers, implement green procurement practices, ask their suppliers to comply with sustainable production standards, initiate improvement projects with supply chain partners, demand for traceability and sustainable modes of transportation.

Retailers also can enable more sustainable consumption patterns by educating consumers through tailored communication and marketing. For instance, retailer can provide a more sustainable product portfolio, communicate at the point-of-sale on greener products and responsible consumption, or launch green advertising and marketing campaigns.

Figure 3:
Retailers in a key position for sustainability
Source: CSCP



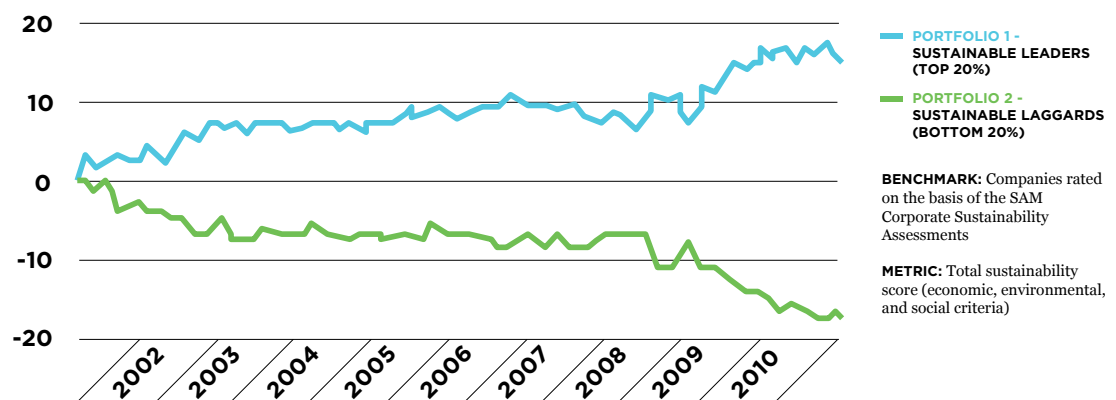
Why bother with sustainability?

Examples from retailer companies from Europe show that driving sustainable production practices and communicate related improvements to retailer customers is beneficial. Among others, retailers implement sustainability projects for ensuring compliance with upcoming laws and regulations, responding to stakeholder expectations or simply gaining through related business benefits. However, retailers have to know where to start their sustainability journey and how to invest their efforts in the most effective way. The focus is on improving production and supply-chain practices without impacting quality of the products and services.

Sustainable practices come with direct economical savings. More efficient use of resources and materials at your suppliers will allow them to sell on an improved price. Studies show a positive correlation between sustainability and financial performance with companies. Sustainability leaders are also financially more successful than sustainability laggards. Walmart earned \$231 million diverting 80% of its waste from landfill. It sold the material within this waste stream to earn a profit that is typically achieved by its 50 superstores. Walmart also worked directly with suppliers to turn £ 1.2 million of recovered cooking oil into biodiesel, soap or a supplement for cattle feed. Marks & Spencer launched Plan A a large sustainability programme in 2007. As result from the programme Marks & Spencer was able to save £50 m, £70 m and £105 million in the third, fourth and fifth year of programme implementation.

Figure 4:
Positive correlation
between
sustainability and
financial
performance

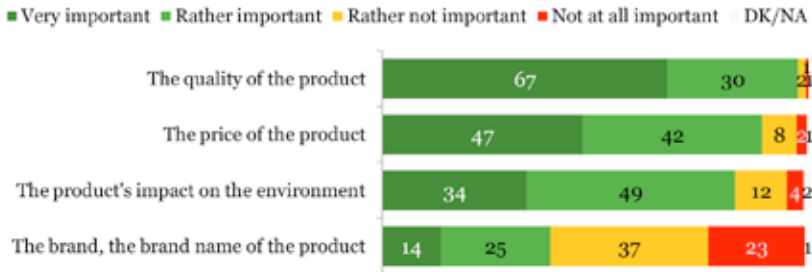
Source: PwC/SAM



An important factor is the rising consumer awareness for sustainability as this will allow retailers to opportunities to enter new markets. More and more consumers are willing to pay an additional price for products that prove to embody environmental and/or socially benefits. In Europe 40% of consumers are willing to pay extra for products and services from companies committed to positive social and environmental impacts, while in Africa even 63% of consumers state that they are willing to pay extra. On both continents it is a growing phenomena, in Europe the share of consumer willing to pay extra has been increasing by 8% and in Africa even by 10% over three years (Nielsen 2014). Although these figures differ across countries, product and consumer group they show how the general trend and the future market potential of sustainability.

Importance of various aspects of products when deciding which ones to buy

Figure 5:
Consumer care for the environment when buying products
Source: Eurobarometer ec.europa.eu/public_opinion/flash/fl_256_en.pdf, page 11



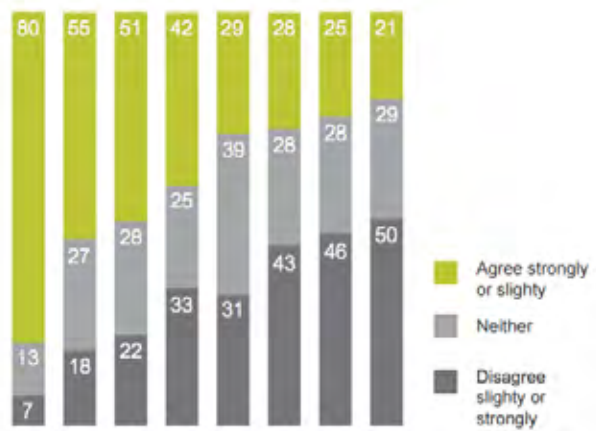
Q2. How important are the following aspects when making a decision on which products to buy? Very important, rather important, rather not important, not at all important?
Base: all respondents, % EU27

Sustainability actions will improve your risk management and prepare your business for changing regulations. Food scandals such as the meat adulteration scandal in 2013, the Chinese milk scandal in 2008 or the export restrictions on Indian Mangos show that business disruption from environmental and social grievances are an increasing challenge. Consumer surveys show that consumers especially expect companies to solve sustainability problems. Stricter regulations on environmental and social issues translate these expectations into policy instruments. If one knows potential risks and related improved practices, one can be a step ahead of upcoming regulations and scandals.

Figure 6:
Consumer expect companies to solve sustainability problems

Source: FSC Global Consumer Study 2013; conducted by GfK on behalf of FSC.
> please see our references for more information

80% OF CONSUMERS STRONGLY OR SLIGHTLY AGREE THAT COMPANIES SHOULD TAKE ENVIRONMENTALLY RESPONSIBLE ACTIONS



In Europe most retailers have understood that sustainable products and company action are important drivers for successful business of the future. They assess their product portfolio, improve energy efficiency, optimise logistics, advance socially responsible production and communicate benefits to their costumers. Just to name one example: The REWE Group international AG has introduced and communicated socially and environmentally improved products into their markets. All own-brand products which went through an improvement process show the Pro Planet label and clearly show to customers that they come with improved social or environmental performance. The Pro Planet label was launched with a few Pro Planet products in 2010. In 2012 the number of products reached 112 and in 2014 250 Pro Planet products in 36 product groups have been offered in REWE international stores. Next to this increase in numbers, revenues development underpins the success. The revenue related to Pro Planet products started from 36m Euros in 2011 and 58m in 2012 and reached 112m Euro in 2014. The revenues of the organic own-brand ja!Natürlich even generated a revenue of 355m Euros as more than 1.100 different organic products are sold (REWE Group). Ultimately and depending on the depth of implementation, sustainability can also constitute a differentiation strategy.

Figure 7:
Members of the
Retail-Forum for
Sustainability

Source:
[ec.europa.eu/
environment/
industry/retail/
members.htm](http://ec.europa.eu/environment/industry/retail/members.htm)



Hot Spot Analysis

Introduction

Hot Spot Analysis (HSA) is a rather simple-to-use tool to identify most relevant risks in the value chain of products you purchase for business. In the context of FFV, it helps you to select products that come with reduced product risks upstream and allow you to communicate product benefits to your clients downstream. The picture you get from the Hot Spot Analysis helps you to better understand the products you buy and what you can substantially communicate as greater value to your customers.

Unlike commonly used environmental or social Life Cycle Assessments (LCAs) its use is much easier and less resource intensive. Although it also covers the complete life cycle of a product, it rather focuses on the most relevant aspects without getting lost in small details, and for this reason reaches high levels of efficiency.

Hot Spot Analysis can provide the following benefits and features:

1. Comprehensive and credible

- Covers the entire product life cycle (sourcing, production, distribution/retail, consumption/end-of-life)
- Allows flexible integration of environmental, social and economic aspects
- Enables the identification of sustainability priorities and leverage points

2. Practical and efficient

- Semi-quantitative approach (thus fairly resource- and cost efficient)
- Applicable product category and product level
- Mass market feasibility
- Can be used for all kind of products and services

3. Integrative and compatible

- Combinable with existing criteria sets, standards and guidelines
- Applicable for all sizes of enterprises
- Basis for action plans and continuous improvement

4. Customized to your specific needs

- Framework is adaptable to respective purpose of retailer (i.e. assess risks/opportunities in the lifecycle of selected product or defined and prioritise actions for addressing risks/opportunities)

Hot Spot Analysis

Methodology description and principles

The Hot Spot Analysis is a tool to identify sustainability priorities along the entire life cycle of products. As such it is to be seen as part of a sustainability analysis toolbox covering the 3Ps (People, Planet, Profit). It seeks to identify most relevant impacts deriving from production and consumption of products in each phase of product life cycle and thereby helps to discover and priorities supply chain risks and opportunities for improvements. “Hot spots” are most relevant environmental and social-economical improvement areas that relate to high sustainability risks and opportunities throughout the life cycle of a product.

Once hot spots in product value chains have been identified buying companies can use this information to effectively minimise negative impacts and maximize positive impacts. Such measures can be e.g. supply chain projects with suppliers or improved selection of products and suppliers.

Practical and efficient
“Hot Spot Analysis allows for a holistic yet practical view on the supply chain, focusing on sustainability priorities.”

Hot Spot Analysis can be used to systematically discover most relevant sustainability issues of all kind of product categories. It has been successfully used for food and non-food products alike.

The analysis covers the whole life cycle of products (raw material/agriculture, production/processing, distribution and retail, consumption and end-of-life), searching in each phase of the life cycle for relevant sustainability impacts. Impacts can occur in the environmental, social and economic dimension of sustainability.

Literature research and, if necessary, expert interviews are conducted in order to generate information on potential sustainability impacts. In parallel specific software, e.g. CO₂ footprint calculators, may also be used. Researchers will evaluate generated information in order to classify impacts according to their relevance and identify the most relevant ones as “hot spots”. Findings will be pictures in a clear and easy-to-understand table showing all sustainability impacts of a product and their relevance, indicating sustainability priorities of each analysed product (see figure 8).

Hot Spot Analysis

Figure 8:
Exemplary results of
a Hot Spot Analysis

Total score:
occurrences
of Hotspots
(high impacts)

Source: REWE Group

- = high impact
(Hotspot)
- = medium impact
- = low impact



Application

The application of Hot Spot Analysis involves 3 steps as described below:

- 1) Preparing the frame
 - Define the product category / specific product
 - Specify the respective supply chain / product life cycle
 - Set the hotspots categories
- 2) Identifying sustainability Hot Spots
 - Analyse sustainability issues along the supply chain
 - Prioritise most relevant sustainability risks and opportunities (hot spots)
- 3) Identifying and prioritising actions to resolve hotspots
 - Identify potential measures and actions
 - Seize business opportunities
 - Integrate in overarching sustainability strategy

Hot Spot Analysis

Step 1 – Preparing the frame

The Hot Spot Analysis can be used for all kind of products. However, it is important to carefully define the product in scope as well as all relevant life cycle phases.

In order to define the product in a useful way it makes sense to decompose the product in its ingredients and raw materials and ask for the functional value it is offering to consumers. The product might be composed of only one or multiple raw materials that need to be considered under the analysis. Fresh fruits and vegetables are single ingredient products and therefore relatively easy to analyse compared to multi-ingredient products such as fruit yoghurt or a frozen pizza.

Next to the product itself, it is important to gain a clear idea about the different phases of the product's life cycle it goes through from raw material extraction to its end of life. It is important to understand that life cycle phases can not only differ between different products but also within the same product group due to different environmental and social-economic conditions. For instance, the life cycle of a tomato grown, sold and consumed in Germany will differ from a tomato grown, sold and consumed in Mauritius. With most products you can differentiate five life cycle phases (see figure 9).

*Figure 9:
Typical lifecycle
phases of a FFV in
a supermarket
supply chain
Source: CSCP*



In some cases, some life cycle phases are not relevant for a specific product. In other cases, you have to think about additional phases. However, it is important to understand that each phase of the life cycle is linked to certain practices performed by life cycle actors, such as supplier companies, consumers or disposal companies. The table below shows practices that usually will be performed for FFV products.

Hot Spot Analysis

Table 1:
Practices and
actors involved in
the life cycle of
FFV products

Lifecycle phases	Related practices	Actors
Farming	Planting, growing, harvesting or extraction of raw material	Farmers
Minimal processing	Processing of raw materials, production and packaging of product	Intermediary
Transportation	Distribution by truck	Intermediary
Retailing	Storage, in-store management (promotion/consumer communication, display)	Retailer
Consumption/ Usage	Preparation and consumption/use of products	Consumer
End-of-life	Disposal, recycling, reuse of product/packaging	Consumer Disposal contractor

Guiding questions to define product and life cycle

- What value is delivered by the product to your consumer?
- Which ingredients can be found in a product and which raw materials are relevant?
- Which are relevant supply chain steps, related actors and practices involved?

Hotspot categories

The Hot Spot Analysis focuses on ecological, social and economic impacts deriving from each phase of the product's lifecycle. These impacts are structures in a systematic way when using the analysing each life cycle step.

Life cycle impacts in the environmental dimension are grouped around ecological aspects such as raw material use, energy use, water use, emissions to air and soil or land use. The same is done for the social and economic dimension. The table below shows a common selection of sustainable aspects and exemplary impacts, based on the project's Supply-side mapping Report. Sustainability aspects and related impacts can be defined as needed with each Hot Spot Analysis depending on the product group and its related life cycle context. Retailers can adapt the list of aspects and add new depending on their relevance to the product in consideration.

Hot Spot Analysis

Table 2:
Ecological aspects
and exemplary
impacts/benefits

Ecological aspects	Exemplary impacts
(Raw) Material	e. g. All materials used along the life cycle of the product including agrochemicals and packaging/preservation materials
Energy	e. g. The energy used along the life cycle of the product, including electricity/fuel used in agriculture, transport, minimal processing and refrigeration
Greenhouse Gas Emission	e. g. GHG emissions, derived from agro-chemicals, machinery and transportation.
Water (efficiency)	e. g. The amount of water used including water used for FFV growing/cultivation/washing and also water used during processing. The impact of excessive water use during irrigation, resulting in soil degradation, is included in the "Land use/soil management" aspect and emissions to water such as nutrients is included in the "emissions to water" aspect.
Land Use/soil management	e. g. The area of land used and the quality of land after use. This aspect also includes soil degradation (and crop rotation) and use of agro-chemicals.
Emissions to water	e. g. Chemicals and nutrients released to water bodies, process efficiency in terms of use of fresh water.
Emissions to air	e. g. Chemicals released to the air including fine particulates, volatile organic compounds (spraying) or noise (excluding GHG emissions from energy generation, these are included in Energy).
Waste	e. g. Excess solid waste (empty containers, disposed packaging, obsolete tools and machinery), hazardous waste, harvest residues, unsaleable FFV etc.
Biodiversity	e. g. Damage and loss of biological diversity including choice of seeds (monoculture/"terminator seeds").

Hot Spot Analysis

Table 3:
Social/economical
aspects and
exemplary impacts/
benefits

Social / economical aspects	Exemplary impacts
Working Conditions	e. g. Labour conditions including topics like formal working conditions (incl. work contracts and job security), hygienic working conditions (access to water, toilet, etc.) and working hours.
Social Security	e. g. Contracts and obligatory social security provisions.
Training and Education	e. g. education on rights as employees and training on safe working conditions.
Occupational Health	e. g. Occupational safety and health in agriculture, logistics and warehousing.
Human Rights	e. g. Child labour and young workers, discrimination (equal pay/benefits/opportunities between temporary and permanent workers; between foreign/migrant and local workers and between men and women, sexual harassment), forced labour including discipline (harsh & inhumane treatment), lack of freedom of association.
Living wages	e. g. Minimum wages and Living wages.
Consumer Health	e. g. Health standards of products, product safety, information & transparency regarding health (allergens, nutritional value) and environmental issues, warnings if use is restricted or hazardous, declaration of control mechanisms for health and safety, phytosanitary residues and product traceability.
Product Quality	e. g. Longevity, use practicability (safe packaging, dosage and storing possibilities), transparency & information (reliable information, information adequate for main consumer group, voluntary information), fostering of social suppliers, ethical orientation of producers).
Monopoly situation	e.g. Only 1 supplier or buyer, dictating prices and/or flow of goods
Non-market competition	e.g. Distortion of competition via government intervention
Unfair pricing	Non internalisation of external costs or (cross-) subsidies

Hot Spot Analysis

Step 2 – Identifying hot spots

Research and collection of data on sustainability impacts along the life cycle begins once you have a clear understanding of the product, its life cycle phases and sustainability aspects in scope.

You can use all available and feasible data sources such as scientific studies, databases and expert knowledge from the field. Quantitative data are desirable but you can as well rely on semi-quantitative or qualitative data. In case there are no reliable studies to be found that provide quantitative and qualitative data, it is useful to generate primary data through involvement of experts from the field or conducting interviews with companies that actually are operating in the value chain in scope. If you are not successful with either the one or the other way, you have to work with assumptions or with certain gaps in your hot spots analysis. Remember that you do not necessarily need information on every single aspect to understand the whole picture.

Tips for credible and reliable data collection

- Involve product category manager and cross-functional teams in the assessment
- Build on practical experience with your specific value chains
- Consider dialogue across the value chain (in order to fill knowledge gaps)
- Consider external advice (e.g. from specialised research institutes)
- Use existing in-house information, e.g. studies, LCAs, expert evaluations, certifications, audits
- Consult external hotspots platforms, e.g. TSC, Wrap (see case examples below)
- Integrate information from suppliers and other value chain partners

Analysing all collected data and information will allow you to evaluate and identify those ecological, social and economic impacts along the life cycle that are most relevant to the sustainability performance of the product (hot spots). Discuss research results with your colleagues or, if necessary, consult scientists, experts and stakeholders on a specific issue in order to receive balanced and solid results. The most solid way towards sound evaluation and rating is to invite multiple stakeholders to comment and provide their views on sustainability challenges that have been identified in your analysis.

The rating scheme can be kept very simple. Just discuss all possible impacts related to each single sustainability aspect in each single life cycle phase of the product. Everybody who is involved in the rating will provide his/her views and rate impacts on a scale from 3 (high impact), 2 (medium impact) to 1 (low impact). Round-up the results if more than one rating is provided for one aspect. All sustainability impacts that have been rated as high (3) are your identified hot spots.

Hot Spot Analysis

If you do not use multi-stakeholder input for rating, it is advisable to have your rating verified by external such stakeholders as civil society organisations, associations and value chain actors such as your suppliers. This will increase the credibility of the process, might provide useful additional information and ensure that identified hotspots are meaningful.

Hot Spots Example: Mango

The following example will show the results of the hot spot analysis for Mango juice produced, sold and consumed in India. This example is to show how results of a hot spot analysis can be used to generate information on a product and show priorities and opportunities for product improvements. At the same time, it shows opportunity areas to communicate successful improvement activities by the product buying company.

As a **first step** of the hot spot analysis the life cycle phases, related practices and actors involved has been defined for mango juice (see figure below).

Figure 10:
Practices and actors involved in the life cycle of the mango juice
Source: CSCP

Life Cycle Phase	Related Practices	Actors
Raw material / Agriculture	<ul style="list-style-type: none"> - Cultivation, irrigation - Use of fertilizers, pest control - Harvesting - Curing, washing, ripening, grading 	<ul style="list-style-type: none"> - Small farmers in Karnataka, Kerela & Andhra Pradesh, India
Processing / Packaging	<ul style="list-style-type: none"> - Washing, peeling and cutting - Extraction of mango pulp - Straining, filtration and clarification - Blending pasteurization - Filling, sealing and sterilization - Cooling, Packing in fruit juice carton 	<ul style="list-style-type: none"> - Large Indian processing company and bottler, Mumbai
Transport and Logistics	<ul style="list-style-type: none"> - Transport and distribution from Mumbai to Surat by truck (250km) 	<ul style="list-style-type: none"> - Logistic contractor, Mumbai
Retail	<ul style="list-style-type: none"> - Product offer in supermarket - No specific in-store communication 	<ul style="list-style-type: none"> - Retail company, Mumbai
Consumption & End-of-life	<ul style="list-style-type: none"> - Consumption by middle-class family - Ordinary disposal of packaging - Packaging goes to land fill 	<ul style="list-style-type: none"> - Consumer, Surat

Hot Spot Analysis

In a **second step** environmental, social and economical impact areas have been selected for analysing sustainability impacts along the life cycle of a mango juice.

Figure 11: Selected impact areas for mango juice from India

Source: CSCP

Environmental impact area		Social impacts area		Economical impacts area
(Raw) material input	Emissions to soil/water	General working conditions	Workers' health and safety	Monopoly situation
Water use	Waste	Social security	Human rights	Non-market competition
Energy use and air Emissions	Land use and Biodiversity	Training and education	Living wages	Unfair pricing
		Consumer health and product quality		

In a **third step** data on possible impacts have been collected and evaluated for each impact area in each life cycle phase (see figures below). Identified hot spots have been marked as red, medium impacts are highlighted in yellow and low impacts in green. Grey colour codes can be found for these areas where impact assessment was not applicable.

Figure 12: Environmental impacts of mango juice

Source: CSCP

Environmental impact area	Raw material/ Agriculture	Processing/ Packaging	Transport and Logistics	Retail	Consumption & End-of-life
(Raw) material input	- Use of pesticides - Early ripening agents	- Use of thick plastic bottles	- Use of old trucks	- N/A	- N/A
Water use	- Over-use of ground water bodies	- Water efficient cooling technology	- No significant water use	- No significant water use	- N/A
Energy use and air Emissions	- Use of pesticides - Burning of agric. waste	- Energy efficiency use of cooling technology	- Outdated truck fleet	- Energy management at stores	- N/A
Emissions to soil/water	- Misuse of fertilizer and pesticides	- Waste management in place	- Fuel from trucks to soil and water	- No significant emissions	- Emissions from land fill
Waste	- Spoilage - Pesticide container	- Post harvest losses (2-3%)	- N/A	- Waste management at store level	- Packaging as waste
Land use and Biodiversity	- Partly illegal use of land	- N/A	- Infrastructure needs	- N/A	- N/A

Hot Spot Analysis

Figure 13:
Social impacts of mango juice
Source: CSCP

Social impacts area	Raw material/ Agriculture	Production/ processing	Transport and Logistics	Retail	Consumption & End-of-life
General working conditions	- No contracts, working security	- Contracts for all workers, hygienic facilities in place	- Working hours, hygienic conditions	- Contracts, hygienic facilities in place	- Not relevant
Social security	- No social security	- Some social security (pension scheme)	- No social security	- Social security for retailer staff	- Not relevant
Training and education	- Low skill level - No trainings on farm practices	- Regular training of staff, security could be improved	- No training of staff	- Training of retailer staff	- Not relevant
Workers' health and safety	- Use of pesticides without gears - No health service	- Working accidents are likely (e.g. cutting)	- Dangerous road conditions	- Health and safety measures in place	- Not relevant
Human rights	- High risk of child labour - Discrimination	- No discrimination policy in place	- High risk of discrimination	- No discrimination policy in place	- Not relevant
Living wages	- Very poor wages	- Average wages paid	- Poor wages in logistic	- Average wages	- Not relevant
Consumer health and product quality	- N/A	- N/A	- N/A	- No information on producers	- Pesticides residues

Figure 14:
Economical impacts related to mango juice
Source: CSCP

Economical impacts area	Raw material/ Agriculture	Production/ processing	Transport and Logistics	Retail	Consumption & End-of-life
Monopoly situation	- No monopoly	- No monopoly	- No monopoly	- No monopoly	- No monopoly
Non-market competition	- Competition ensured by government	- Competition ensured by government	- Competition ensured by government	- Competition ensured by government	- Large choice for consumers
Unfair pricing	- Very low price for farmers	- Reasonable share of value	- Low price for logistic company	- Reasonable share of value	- Low value for money

The results from the hot spot analysis show that most “hot spots” occur in the phase of raw material extraction on farm level. There are serious challenges with the use of chemicals as pesticides and early ripening agents which among others pose a threat to soil and water resources, and embody a level of energy. Above that, the use of chemicals in the farms are a high risk for the health of farmers, especially as there are no suitable protective clothes available in the context of small-holder farmers. Working condition, social security, training

Hot Spot Analysis

and education, human rights and wages are more major challenges in the agriculture phase and partly with the logistic company. The life cycle phases production/processing and retail are less of a challenge as processing company and retailer have put adequate practices in place to secure decent working conditions and ensure a health and safe work environment for their employees. Another hot spot could be identified with the consumer health and quality of the product as pesticide residues can be found in the end-product due to misuse of pesticides and fertilizer on farm level. The analysis reveals that the economical dimension is less of a challenge. However, small-holder farmers have a very difficult market position and suffer from a very low price which threatens their living.

Self-Learning Exercise I

Hot Spot Identification

Think of any FFV product your company purchases and describe the product life-cycle of the product. Consider each lifecycle phase separately and analyse relevant activities and actors. Just use the general knowledge you have about the product, this is fair enough to understand the concept of the hot spot methodology.

1. Name each life cycle phase (e.g. production phase...)
2. Describe actors involved and their function in the life cycle (e.g. farmer grows crops...)
3. Explain each activity you are aware of in the life cycle of your imaginary product (e.g. irrigation of plants...)
4. Note down potential environmental or socio-economic impacts resulting from activities in each life cycle phase
5. Evaluate each impact on a scale from 1 to 3 (1=low impact, 2=medium impact, 3=high impact).
6. Involve a second person (a colleague or a family member), ask for his/her evaluation and discuss in order to achieve consensus.
7. Draw a hot spot map showing the life cycle phases and hot spots you identified (impact with high impact ratings)



Step 3 – Prioritising actions to resolve hotspots

This step is about exploring and identifying feasible measures (e.g. projects) to tackle identified impacts or tap potential benefits. Think about existing solutions in form of standards, sustainability initiatives, and adopting feasible management system or innovate new solutions.

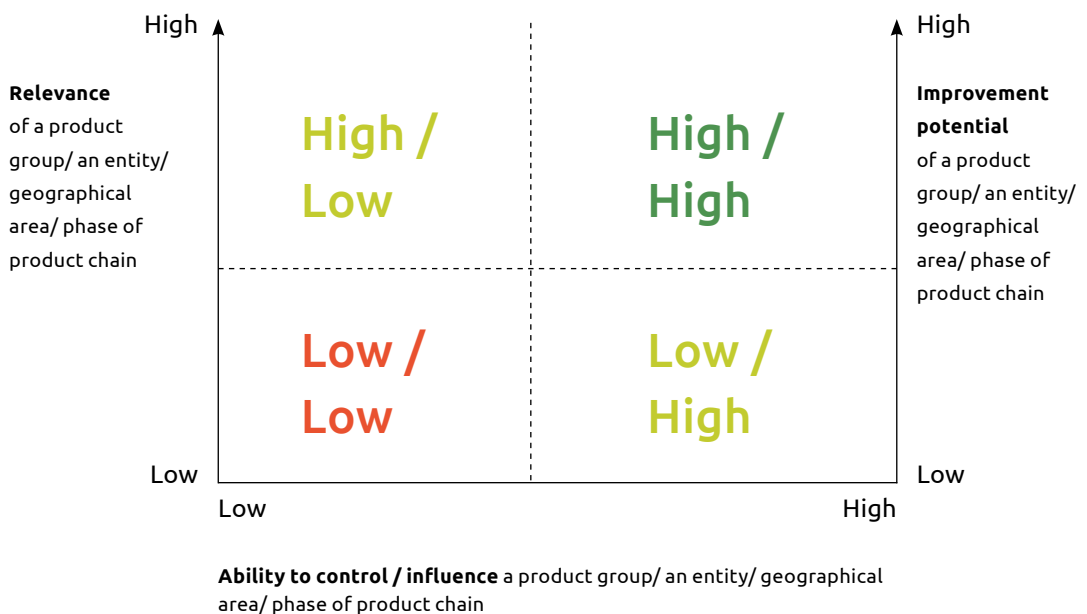
In the field of Fresh Fruits and Vegetable solutions are often offered by sustainable agricultural standards for the raw extraction phase. Adopting such a standard can dissolve many hot spots at once, as these standards are specifically designed to tackle environmental and social-economic problems at farm level.

Concerning the manufacturing, environmental management systems such as ISO 14001 can provide a feasible solution to hot spots identified. Beside this you find many other specific management systems that will help supply chain actors to improve on single sustainability aspects. For instance, ISO 50001 for energy management will show manufacturing companies ways to consume energy in a more efficient and smarter way.

If challenges seem too big to manage, forming alliances with industry partner, civil society or political actors might be an option to consider.

A feasibility assessment of feasible measures and actions should in any case consider (a) the relevance of the action in terms of improvements of negative impacts and benefits for your business or society as such (Hotspots), (b) your ability of control and influence (including barriers such as costs) and (c) your existing practices in place in order to determine effective improvement potentials (see figure 15).

Figure 15:
Prioritizing potential project/action
Source: CSCP



Tips for selecting measures to address hotspots

- Evaluate costs and benefits of action (high risks; low hanging fruits)
- Consider your own sphere of influence and how to expand it
- Use synergies between hotspots (e.g. material use, energy and emissions reduction; keep in mind trade-offs)
- Check best practices into account
- Join forces and form strategic partnerships for speed and scale
- Consider benefits of actions in terms of consumer communication
- Link to your company's sustainability strategy

Self-Learning Exercise II

Identify actions to resolve hot spots

Use your outcomes from the Self-Learning Exercise I

1. Think about any actions that could resolve an identified hot spot and describe them with a brief sentence
2. Estimate how realistic it is that such action can be implemented and nominate the top three actions, which seems to be most feasible to you.
3. Describe your top three actions in more detail and think about a) actors which have to be involved b) potential benefits of the actions c) potential barriers and d) the role and influence your company could play to implement the action, considering already existing activities
4. Establish an action plan for your most promising action that highlight a) goal of the action, b) how the goal will be accomplished, c) actors involved to reach the goal, d) necessary resources (time and materials), e) means of monitoring success, f) evidence that will indicate completion.

Hot Spot Analysis



Case Study: REWE Pro Planet

REWE Group is a German retail and tourism cooperative group based in Cologne, Germany. The Group is second largest supermarket chain in Germany after EDEKA. REWE Group is operating in 12 European countries with 333.000 employees and 15.000 stores. In 2016 REWE Group generated a turnover of more than 52 billion Euros.

Sustainability at the REWE Group

REWE Group is a progressive name when it comes to sustainability. Group's sustainability strategy is built on four pillars, "Green Products", "Energy", "Climate" and "Environment". The objective of REWE'S sustainability strategy is to realise long-term expansion and growth by conserving resources, treating employees and partners with fairness and contributing to society. As an integral part of its sustainability strategy the REWE Group launched the PRO Planet label in 2010. The PRO Planet label is a sustainability label that is offered on selected REWE products. The label ensures that relevant environmental and social impacts along the lifecycle of a labelled produce are adequately tackled.

Implementation of Hot Spot Analysis (HSA) at the REWE Group

Hot Spot Analysis is the first step in the process of awarding the Pro Planet Label to selected products/product group. REWE Group contracts a scientific institute for the Hot Spot Analysis of selected product group(s). The scientific institute analyses the environmental and social impacts across the lifecycle of respective product group(s). REWE's product portfolio covers the categories of both food and non-food products. Food category includes vegetables, fruits, processed food and dairy products. Experts conducting Hot Spots Analysis examine how the supply chain of a certain product group(s) is structured and identify and rate environmental and social impacts (hot spots) needing action along the entire value chain. Once the Hot Spots in a product groups' value chain (e.g. apple) are analysed, proposals are formulated to resolve these within in collaboration with suppliers and relevant civil society partners. The feasibility of different projects to resolve respective hot spots (e.g. biodiversity) is assessed the most practical project is selected for implementation. If the project resolves the target Hot Spot(s) in the product lifecycle successfully, respective product can be labelled as Pro Planet.

Example HSA Implementation: Insect-friendly farming

Insects such as bees are essential to the survival and yield of all types of fruits. In the lifecycle analysis of Apple, one of the Hot Spot that was found was the unhealthy habitat for insects at suppliers' farms. By partnering with the NGO Nature Conservation Association (NABU) e.V., REWE launched an Apple project in 2010. The project covers 147 partner Apple farms from different regions in Germany. With the Apple project, various insect friendly farming measures including hedge-plants, wood logs, bird nests and beehives have been introduced at these farms providing a healthy habitat for insects (REWE Group Sustainability Report, 2012).



Picture 1: Bee hedges
Source: Bodensee-Stiftung 2015



Hot Spot Analysis



Case Study: The Sustainability Consortium

The Sustainability Consortium (TSC) is a membership organization. The organization is headed by the University of Arkansas and Arizona State University. The members of TSC include more than 100 corporate and civil society organizational affiliates. The main objective of the consortium is to develop and promote tools to support decision-making on product sustainability throughout product life cycle in the consumer goods sector.

TSC offers three tools to its members: 1) category sustainability profile, 2) key performance indicators 3) sustainability snapshot. The category sustainability profiles (CSP) details knowledge of sustainability aspects of a products category in its entire lifecycle. The information on sustainability aspects is based on scientific research. This information is highlighted in a document called CSP. The CSP also lists key performance indicators (KPIs). KPIs represent indicators to measure performance of suppliers on key sustainability issues in the lifecycle of respective product category. Finally, the sustainability snapshot is a 1-page overview to relevant issues, hotspots, and improvement opportunities.

Hot Spot Analysis (HSA) and The Sustainability Consortium

TSC's methodology to identify hot spots is based on scientific research. Today, TSC has developed information and metrics for 110 comprehensive consumer product categories, representing over two thirds of the items typically sold in retail. TSC identifies materially significant environmental and social issues, or "hot spots," across the product life cycle mainly based on the findings of relevant LCA studies.

An activity at a specific life cycle stage is defined as a hot spot if the corresponding LCA study indicates that the activity contributes more than 10% of the total impact in one impact category or more than 5% in two or more impact categories (Dooley, K, Johnson, J, 2015). For example, water use accounts for the major impact in the agriculture and irrigation stage in all food products and energy use in use-phase stage in energy products so they are hot spots for the categories of food and energy-using products respectively.

Ahold uses TSC's knowledge products to identify hotspots and justify sustainability choices...



HSA profiles by TSC

TSC has developed category hot spots profiles for 110 comprehensive consumer product categories. The members can use TSC category profiles and KPIs as a basis for conversation and measurement of sustainability performance in the supply chains. TSC category survey assesses suppliers overall performance in a category. This information can be used to rank suppliers of members. They can develop KPIs and measure performance of suppliers on individual KPIs.

Picture 2: TSC supplier-buyer data exchange for greening supply chains (Source: Ahold)



Sustainable Supply Chain Management (SSCM)

Learning Outcomes

- Understand major tools and building blocks you might use to achieve sustainable production, distribution and sales of FFV products
- Learn how to develop a supplier code of conduct in order to commit your suppliers to fulfil basic social and environmental requirements
- Gain knowledge on the use of agriculture standards to increase sustainability along the value chain of produce offered to your clients.
- Respond to consumers demanding locally sourced FFV
- Use the power of multi-stakeholder dialogues involving suppliers, civil society and other actors about their preferences and opinion with regard to making the supply chain more sustainable
- Learn how to enact supply chain projects with supply chain partner to solve supply chain challenges and tap new business potentials
- Generate customer trust in your supply chains by realising supply chain transparency
- Optimize packaging, transportation and your storage facilities

Introduction

Sustainable Supply Chain Management emphasizes communication, collaboration, and coordination between your supply chain functions and those of your suppliers, customers, and other service provider. You may also build critical intangible assets such as product and service innovation, risk and opportunity management, alliances and networks, brand equity and reputation.

Sustainable Supply Chain Management (SSCM) is the management of material, information and capital flows as well as cooperation among companies along the supply chain while integrating goals from all three dimensions of sustainability, which are derived from customer and stakeholder requirements

(Securing/Müller 2008)

Sustainable Supply Chain Management (SSCM)

Among others SSCM actions can lead to the following benefits:

1. Better risk allocation: as risks are redistributed to stakeholders with best competency to manage it
2. Improved resource efficiency: less resources use, recycling of materials, through optimised operations and logistics
3. Greater visibility of contracting opportunities: by evaluating products/services' whole-life-cycle costs
4. Better-defined procurement requirements: by engaging supply chain when shaping the technical specifications
5. Improved supplier performance: suppliers are monitored and have to comply with your sustainability requirements
6. Improved reputation: as company (and different actors in the supply-chain) takes responsibility for people and planet, goal delivery

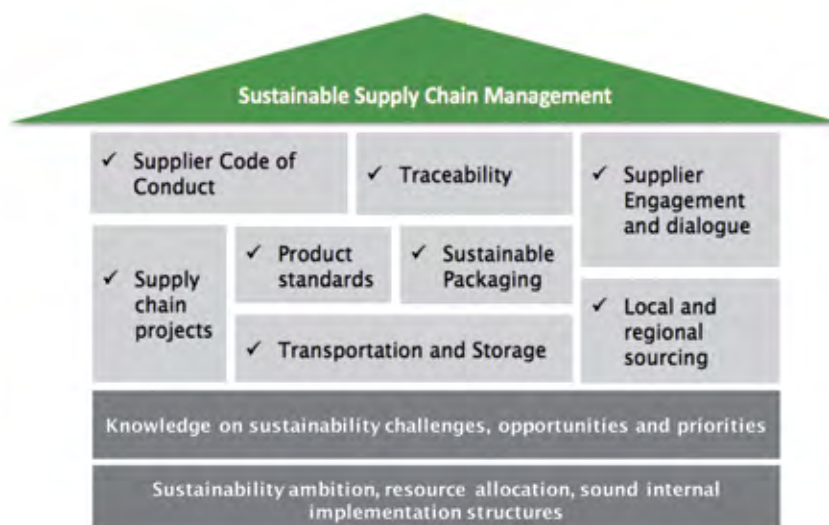
Potential barriers in the life cycle:

1. Competition (Cultivation/production)
2. Focus on company only (Cultivation/production)
3. Low consumer awareness on quality, health and environment (Consumption)
4. Complex products (End-of-Life)
5. Low cost of natural resources (End-of-Life)
6. Lack of resources, know-how, and information (all phases)
7. Complex and global supply chains including purchase of seeds and agro-chemicals (all phases)

This handbook highlights some important building blocks to manage more sustainable FFV supply (see Picture 3).

Picture 3:
Basement and building blocks for sustainable supply chain management covered by handbook

Source: CSCP



Sustainable Supply Chain Management (SSCM)

Code of Conduct (CoC)

As your retail company has identified key supply chain sustainability risks and opportunities and is aware of own business priorities, stakeholder expectations and the current market situation, it is important to translate these into a clear set of rules for your suppliers. A common practice to establish basic expectations, including sustainability criteria and pass them on to your suppliers, is to define a Code of Conduct (CoC).

A CoC is a set of rules about how to behave and do business with others. Retailers use a CoC to define and communicate basic requirements and expectations that apply to either all or a specific part of their suppliers. CoC often are one building block of SSCM activities of retailers and closely linked to sustainable sourcing or sustainable purchasing guidelines.

CoCs include basic requirements and expectation linked to common sustainability issues such as human rights, environmental management and anti-corruption. In contrast to commodity standards, requirements and expectations formulated are more universal and less technical in order to make them fit to various applications across suppliers, countries and product groups.

Developing and implementing CoC comes with initial cost for both retailers and suppliers, especially for monitoring and evaluation. To avoid duplication of efforts and reduce costs for implementation and audits, brands and retailers are advised to first explore existing standards that might be feasible to tackle risks in their supply chain. For this reason, there are several initiatives and meta-standards that have been designed for all types of companies and which can be referred to when developing a CoC for your own suppliers.

*Table 6:
Common social and environmental aspects relevant for sustainable sourcing
Source: UNGC, BSR 2010: Supply Chain Sustainability*

UNGC has listed common social and environmental aspects that should be considered when writing and adopting a code of conduct:

Human Rights and Labour

1. Forced labour
2. Child labour
3. Working hours
4. Wages and benefits
5. Humane treatment
6. Non-discrimination
7. Freedom of association and collective bargaining
8. Occupational safety
9. Emergency preparedness
10. Occupational injury and illness
11. Fire safety
12. Industrial hygiene
13. Physically demanding work
14. Machine safeguarding

Environment

15. Material toxicity and chemicals
16. Raw material use
17. Recyclability and end of life of products
18. Greenhouse gas emissions
19. Energy use
20. Water use and waste water treatment
21. Air pollution
22. Biodiversity

Anti-Corruption

23. Conflict of interest
24. Gifts, meals and entertainment
25. Bribery and kickbacks
26. Accounting and business records
27. Protecting information
28. Reporting misconduct

Sustainable Supply Chain Management (SSCM)

Retailers should decide on which of the above listed social and environmental aspects they would like to adopt and pass on to their suppliers. All aspects should be interpreted in a way that it fits the business context in which they operate.

To develop a CoC several internal departments need to be involved: procurement, finance and accounting, legal and marketing (and if processing occurs, production department); furthermore, external consultation may be useful to understand the inherent practices of the supplier group.

For suppliers adhering to procurement's CoC the benefits are usually in becoming an approved and qualified "listed-supplier" entity.



BSCI: Code of conduct for retail sector

The Business Social Compliance Initiative (BSCI) is a leading business-driven initiative supporting retailers, importers and brands to improve working conditions in supplying factories and farms worldwide. It follows the vision of a world of free trade and sustainable global supply chains, in which factories and farms are compliant with national labour legislation as well as with ILO Conventions protecting workers' rights.

BSCI was planned as initiative providing solutions to retail sector. Today more than 1000 retailers and importing companies have committed themselves to responsible sourcing using BSCI Code of Conduct as a basic standard. More than 5000 audits have been performed in 2012.

Source: BSCI 2016



Sustainable Supply Chain Management (SSCM)

Self-Learning Exercise III

Establishment of a Code of Conduct for your company

Use the table on common social and environmental aspects relevant for sustainable sourcing as basis for this exercise.

1. Reflect buying practices of your company and ask yourself whether sustainability elements are covered or not.
2. Note down all sustainability expectations you ask your suppliers either directly or indirectly by selecting a certain quality standard when your company purchases certain FFV produce
3. Compare your existing expectations with these aspects highlighted in table 6 on common social and environmental aspects.
4. Identify gaps between aspects of existing practices and aspects highlighted in table 6.
5. Reflect and note down benefits and barriers you would face when asking your suppliers of FFV produce to meet expectations related to social and environmental aspects highlighted in table 6.
6. Prioritise practices of which you think are most feasible to be asked from FFV suppliers of your company by rating each single aspects on a scale from 1 (not feasible) to 5 (highly feasible)
7. Taken into account potential benefits and barriers identified under 5 and 6, note down all aspects from table 6 of which you think could be pasted in a supplier code of conduct for your company.

Agricultural Production Standards

Some commodities have specific external standards for better quality or reduced environmental and social impact. Examples include internationally traded crops (e.g. palm oil, soy, sugar, cotton, coffee and cocoa), animal products (e.g. seafood) and paper products. Especially for FFV you can find various standards that focus on the farming level. They help farmers to manage common sustainability risks that are linked to farming practices and lead to higher product quality. Retailers can use these standards to mitigate and control risks specific to the supply chains of FFV. As doing so they can benefit from existing approaches to resolve commodity specific risks and profit from the positive image of the majority of sustainability standards and labels.

Most retailers use existing certification schemes to instil sustainable agricultural practices at the farms from their suppliers. Prominent examples for such sustainability certification schemes are Fair Trade, Rainforest Alliance or Global Gap.

These certification schemes provide standards for different agriculture products. For instance, you will find sustainability standards for cash-crops like coffee, tea and cocoa, but also fruits like pineapples, banana and vegetables. Producers have to comply with these

Sustainable Supply Chain Management (SSCM)

standards and go through the certification process to be allowed to sell products with the corresponding label.

While standards like Global G.A.P., Fair Trade and Rainforest Alliance aim to make production practices more sustainable by for instance reducing the use of synthetic fertilizer or improve water efficient use on the farms, various organic standards put the bare even higher. They all aim to restrict the use of synthetic inputs and switch to organic fertilizer and pesticides instead, avoid genetically modified seeds and prohibit chemical inputs in the farm.



Case Study: Agricultural standards of Global GAP

Global G.A.P. is a global organization with the objective: safe, sustainable agriculture worldwide. It sets voluntary standards for the certification of agricultural products around the globe—and more and more producers, suppliers and buyers are harmonizing their certification standards to match.

Members create private sector incentives for agricultural producers worldwide to adopt safe and sustainable practices to make this world a better place to live in for our children. Globally connecting farmers and brand owners in the production and marketing of safe food to provide reassurance for consumers. We lay the foundation for the protection of scarce resources by the implementation of Good Agricultural Practices with a promise for a sustainable future.

Source: Global G.A.P. 2016

Self-Learning Exercise IV

Identify feasible commodity standards for your use

1. Think of all commodity standards you are aware of, note them down and link them to product groups they cover
2. Describe what kind of impact these standards want to achieve
3. Reflect on benefits they deliver to the environment and in terms of social-economic aspects
4. Discuss barriers that need to be overcome to generate the benefits you have described before.

Sustainable Supply Chain Management (SSCM)

Local and regional sourcing

Local or regional sourcing is another building block of SSCM. Customers around the world appreciate regionally produced food products and pay increasingly attention to the produce's origin. Especially with FFV regional sourcing is beneficial.

In the environmental dimension sustainability benefits of local and regional FFV derive from shorter transportation distances. Mileages are reduced leading to higher level of resource efficiency and less emissions. Consumers perceive local and regional FFV as fresher and better tasting. In addition, regional sourcing will support family farms as well as local and regional food economy, most consumers are in favour of both arguments. For instance, 96 per cent of consumers in Austria would prefer a product from the region over a product from abroad if the price is the same and 78 per cent would even pay a higher price. The same survey states that 33 per cent of consumer questions are buying more products from the region than they did in the past, underlining the trend towards regional products. Local and regional sourcing also improves transparency in the supply chain. As suppliers are nearby, evaluation and monitoring of production practices are facilitated and consumers get the opportunity to visit farms and get an impression of farming practices.

For these reasons, many retailers in Europe and elsewhere have established product lines that exclusively highlight local or regional products with specific marketing. However, the definition of local or regional is difficult and you can find various approaches. Some retailer label products as regional if all raw materials and production is taking place in the same country. Others define regional products as products that come from not more than 200 kilometres of where it is sold. The definition of regional is often also linked to specific food or production traditions rooted in a specific region. As opportunities with local and regional sourcing are numerous it is important to provide a clear definition and communicate in a coherent manner to consumers in order to tap related business opportunities.



Case Study: BILLA regional shelf

There are more than 10.000 BILLA locations throughout Austria, with a staff numbering of 17.500 in 2014. BILLA, part of REWE Group International, offers a customer-oriented product range, offering nearly 7.000 products on an average selling space of about 1.000 m². Next to Europe's largest organic foods brand „Ja! Natürlich“, one feature BILLA is particularly proud of is its “Regional Shelf”, in which local farm shops began presenting their products in the local stores in 2013.

More than 200 local suppliers, family businesses for the most part, from more than 32 regions in Austria have thus become a part of Billa's business offering more than 1000 specific products from the regions. BILLA defines regional products as products that are regionally grown by regional suppliers.

Source: Delikatessa 2015

Sustainable Supply Chain Management (SSCM)

Supplier engagement and dialogue

A sustainable supply chain will only be achieved as you communicate and collaborate with all relevant supply chain actors towards common goals. In order to engage your suppliers for working towards sustainable value chains, you should establish an inclusive process to ensure communication with suppliers on a regular basis.

This is to provide necessary information and to sharpen their understanding of your supply chain goals and practices. This will facilitate acceptance and support and allow your suppliers to take decisions in line with your common goals. However, communication should not be one-way. You should give your suppliers also the opportunity to feedback and contribute to your supply chain strategy. This will even more generate commitment and ownership, and in addition provide you valuable information on their perceptions, their goals and potential barriers they might face when it comes to implementing your expectations. Supplier dialogue and engagement events provide space to receive feedback on your expectations from your suppliers and allow you to define and refine your supply chain strategy in a collaborative way.

However, retailers have to decide on who they want to work with and on which level of cooperation they want. Some of your suppliers you just want to keep informed on your activities while with others there might be attractive opportunities for deeper collaboration through projects or other means. Segmenting your suppliers allows your company to commit resources and prioritize your focus on the most critical parts and develop plans for continuous improvements.

Self-Learning Exercise V

Strategic supplier segmentation for improved sustainability performance

Answer the following questions for your company to gain an understanding about which suppliers are important to work with in order to achieve more sustainable products.

Level of control

- Tier: Which suppliers sell to your company directly, and which are sub-tier suppliers?
- Spend: Which suppliers does your company have the highest spend with, including direct and indirect spend, and potentially therefore the most influence with?
- Replicability: Are there alternative suppliers or substitutions?

Supplier sustainability risks

- Risks: Which suppliers have the biggest sustainability risks in your supply chain, such as risks to the environment, human rights, labour, and ethics?
- Category: Which suppliers, including suppliers for products and processes, are most business critical for your company?

Sustainable Supply Chain Management (SSCM)



Case Study: Stakeholder dialogues at REWE Group

Since several years, the German retailer REWE Group organises annual stakeholder dialogues around sustainability challenges and opportunities. Company's sustainability commitments and strategies are discussed together with about 300 participants from consumer groups, civil society organisations, political institutions and business partners. The event provides REWE the opportunity to reflect on strategic decisions and get feedback from stakeholders and business partners on which opportunities and challenges to tackle next.

Supply chain projects

Based on risk assessment and your supplier segmentation, companies might decide to initiate projects with supply chain partners. Supply chain projects range from functional improvements, for instance, on the IT level to large-scale improvement programmes and aim to optimise the coordination of material, information and financial flows between supply chain actors. In the scope of sustainability, such projects seek to improve on sustainability impacts that occur along the value chain and thereby improve overall sustainability performance in the value chain. For this reason, you have to have a clear understanding of which impacts occur in which phases of the supply chain and who are the actors in control of problematic practices or processes. A hot spots analysis provides you with this kind of information and therefore is an advisable first step prior to each supply chain project.

For instance, if you have identified sustainability risks related to the level of pesticides used in the farming phase of your supply chain, you have various options to improve this situation:

1. You might **switch the supplier** hoping or knowing that an alternative supplier uses less pesticides so that you can solve the identified hot spot.
2. A second option is to **communicate the problem** to the supplier and ask him to improve his practices, for instance by asking him to comply with respective standards or engaging in supplier dialogue (see above).
3. Another option is to start a **supply chain project** aiming to support your supplier to improve on the identified problem.

Such a supply chain project need to involve the supply chain actor controlling the problematic supply chain phase, but is not limited to these. For instance, if you want to solve the sustainability challenge concerning an overuse of pesticides on farm level, feasible supply chain projects could have the goal to enable farmers to join a certification programme or establish trainings focusing on responsible pesticide use. For both projects involving third parties such as a training institution or a certification body would be beneficial.



Sustainable Supply Chain Management (SSCM)

Supply chain projects can also be designed to establish a long term cooperation with suppliers. This will establish trust and can be beneficial for retailer and supplier. A long-term partnership allows to solve specific sustainability challenges, increase quality and benefits over time and become a competitive advantage in the market. Some retailers offer supplier platform that provide information and best practices but also space for interaction and trainings. These retailers can offer an additional service and improve the relationship to their suppliers.

However, specific sustainability challenges are too big to be solved in a single project and need further collaboration. One example is the palm oil production that causes multiple serious sustainability impacts ranging from deforestation to monocultures causing overuse of chemicals and soil degradation. In order to solve these supply chain problems commonly found in supply chains of products containing palm oil, retailers have been taking an active role in initiating roundtables that bring different stakeholders together to seek, define and implement feasible solutions. For instance, the council for sustainable palm oil comprises retailers and palm oil producers, civil society organisations and policy makers committed to making the palm oil supply chain more sustainable.



Case Study: Marks & Spencer's Farms for the Future

Founded in 1884, M&S has grown from a single market stall to an international, multi-channel retailer. M&S sells quality own brand food, clothing and home products through 1,382 stores worldwide.

Sustainability at the M&S

M&S is a leading name in sustainability. Retailer's has developed Plan A. Plan A lists retailers' sustainability commitments to be achieved 2020. The plan outlines sustainability sourcing plan, energy efficiency, waste reduction and social responsibility.

An important part of M&S's Plan A is 'Farming for the Future' program. Launched originally in 2010, the programme aims to support farmers in retailers' supply base throughout the world in addressing the challenges ahead by identifying opportunities to improve efficiency, environmental performance and ethical practice. Farmers for the future aims to make M&S supply chains resilient. M&S aims to continue innovation whilst reducing impacts on its farmers and the world around them.

Farming for the Future commit in Plan A states: "Through the M&S Farming for the Future programme we will define key sustainability hot spots by sector and develop plans to manage hot spots in each sector through producer and industry engagement. We will publish an annual report to report on progress and share our learning more widely." (M&S, 2015).



Sustainable Supply Chain Management (SSCM)



Hot spots in produce supply chain

In collaboration with Nora Conry, a Bord Bia Origin Green Ambassador and a number of industry advisors, M&S identifies hot spots in each food sector (e.g. produce, pigs, dairy etc.). In fresh produce sector for example the retailer identified following hot spots: Water Use, Energy Consumption, Pesticide and Fertiliser Use, Soil Management, Training / People.

Solving hot spots in fresh produce

M&S together with its indicator farms implements different projects to address sustainability hot spots. One example is pollinator plans. Projects are being undertaken to attract pollinators in M&S indicator farms. The findings are then shared across M&S supply base through grower meetings held each year.

One example of addressing challenges in fresh produce sector is Marshgate Farm – a M&S pear supplier from North Kent, United Kingdom. The supplier farm faced the issue of yield loss because of pear suckers. The previous solution to avoid these insects was to use more and more insecticides. But the problem was not solved. In 2011 the orchard was severely affected and 40% of yield was graded out due to misshapen and blackened fruit. In 2012 the grower was approached by the East Malling Research to trial different anti-pest activities. These include introducing Anthocoridae bugs to combat the pest problem.

Anthocoridae bugs can feed on plant material, but mostly feed on other small softly chitinised arthropods (such as pear sucker). They are very beneficial as biological control agents. This pest control strategy has led to reducing the amount of pear sucker and the yield has grown to an average of 28 t/ha (M&S, 2015).

Traceability

Traceability can be used as a tool to improve companies' supply chain sustainability and to advance sustainability objectives. It aims for identifying and tracking a product life cycle from the raw material extraction to the finished good. It allows to gain and convey information about components and materials of a product as well as about their transformation throughout the value chain.

What is traceability?

“Traceability is the ability to identify and trace the history, distribution, location and application of products, parts and materials, to ensure the reliability of sustainability claims, in the areas of human rights, labour (including health and safety), the environment and anti-corruption”

(BSR/UNGC 2016)



Sustainable Supply Chain Management (SSCM)

Only a rather small part of commodities is traceable on sustainability attributes today. If traceability is used by companies, it often is concerned with specific quality aspects to comply with laws and regulation, for instance, to ensure consumer safety. However, especially agriculture, food and beverage companies and retailers have been trying to assure even higher levels of security, safety and add sustainability attributes to the quality dimension of their food products offered to consumers. One reason is increasing demand of consumers and civil society organisations for greater transparency fuelled by scandals such as the meat European adulteration scandal in 2013, the Chinese milk scandal in 2008, the Thai seafood slavery scandal 2014 or reports on massive environmental destruction through agriculture systems or social grievances on and around farms. Scandals will lead to product recalls and business disruption, which comes with high costs and reputation damages. Against this background, retailers and other companies have put increasingly effort to reduce risks and position themselves positively in the market. Being able to trace the path of food from farm to fork can support such endeavours and requires working together with suppliers.

In order to establish traceability, it needs a system providing information about the components of products, parts and materials throughout the supply chain. Many companies collect data internally, but are only able to trace one step up and one step down in the value chain. In addition, data are often incomplete and/or not consistent. The challenge is complexity and costs involved to establish a consistent system that allows traceability in an efficient way. The good news is that innovative technology can support here and you do not have to do it all at once. You can use supplier dialogues and results from your hot spot analysis to talk to suppliers about sustainability challenges and learn about their capabilities and what information they have and what they trace. If you identify gaps you can, for instance, try to make your supplier improve quality systems and processes to check incoming products and get more information from their suppliers on sustainability risks you have identified. Special attention needs to be devoted to critical control points, as known within HACCP standards.

Use emerging technologies and traceability practices to improve the way how information is transferred at your transfer points in the value chain and convince value chain partners to do the same. Software and IT infrastructure provider increasingly offer integrated modules for traceability in their systems and digital solutions as barcodes and QR codes are available in the market. QR codes allow to link products directly to websites and social media and open new opportunities for consumer engagement and feedback mechanisms. Your customers can track origins, learn about farmers and practices, the story behind the product. In addition, using traceability technologies will help you to optimise warehousing and ordering processes. Most recent systems provide real time data on materials streams along the value chain, so you always know where your product is at the moment and when it will be in your store.

Traceability is especially important if you want to make specific sustainability claims. For this reason, most sustainability certification schemes provide means for traceability. For instance, UTZ certified offers a traceability system for certified cocoa and coffee products allowing fully automated and accurate traceability. Fair Trade is offering traceability schemes of some of their labelled commodities, while all organic certification schemes allow traceability to safeguard the organic product claim. In general, you can differentiate between different

Sustainable Supply Chain Management (SSCM)

types of traceability models. Product segregation ensures that certified materials are physically separated from non-certified materials, so that certified products only contain certified content. Identity preservation models make sure that materials are not only separated but additionally that certified materials are also not mixed, allowing to trace back raw materials of a product to a specific farm. In contrast the mass balance traceability models allow mixing of certified and non-certified materials but make ensure that the exact volume of certified material entering the chain will also leave the chain as the product is sold. Book and claim is the lightest traceability model as material is not traced at every step of the value chain. In this model it is sufficient that the amount of certified material entering the chain is equivalent with the amount being purchased in the end of the value chain. In this model companies can buy an amount of materials as certificate via a trading platform and claim this amount and related impacts at the final product, although the sold product does not contain the “booked” certified material.



Case Study: Farmforce (see appendix for lengthier presentation)

Farmforce has been created to help smallholders gain access to formal markets and improve the effectiveness of outgrower schemes. Farmforce not only increases small growers' chances of selling to new markets but also makes traceability and compliance to food safety standards easy and effective. It uses innovative mobile technology to redefine the relationship between growers, manufacturers and markets (i.e. moving from hierarchical to direct relationship). Farmforce is a user friendly software to efficiently manage outgrower schemes and contract farming programmes. It has been created by the Syngenta Foundation for Sustainable Agriculture with co-funding by the State Secretariat for Economic Affairs of Switzerland.

How does Farmforce work?

Farmforce is a mobile software that aims to make traceability of grower activities, harvest, financing of loans and audits easier.

The software simplifies the requirements of food sustainability and safety standards such as GLOBAL G.A.P. It provides growers recommendations on the dosage of fertilizer, seeds and chemicals to meet safety and sustainability standards. It enables growers to manage cropping cycles, harvesting, input usage and yield forecasts. The software alerts supply chain managers if the farmer exceeds the recommended levels of chemical use or does not comply with food safety standards.

Example of Farmforce implementation

Adisagua is a smallholder agricultural initiative in Guatemala, under the umbrella of parent company FairFruit. The company is a certified member of the farm assurance programme GLOBAL G.A.P. As a member it must comply with the guidelines of GLOBAL G.A.P on quality and pesticide use. The company signed up to use Farmforce in 2013 aiming to enhance its grower management capability. Before signing up to use Farmforce, company was collecting GLOBAL G.A.P data of farmers as far away as 70 KM.



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The auditors have been spending half a day every week collecting this data on papers and then sending them to headquarters. To make auditing more effective, the company decided to use Farmforce.

The software was rolled out across a 150 hectare area, covering 220 French bean smallholder farms. The information about farmers, field profile and harvested yield was collected and uploaded in real-time. Now the field auditor could spend less time processing data and could spend their saved time on more strategic activities.

Farmers could also be evaluated better and targeted training could be provided. As a result of the implementation of Farmforce the Adisagua could ensure compliance with GLOBAL G.A.P more easily, improving knowledge of farmers, personal profiles and locations, transfer information between field and head office quicker and save paper.

Source: SFSA 2016

— Packaging

All packaging of a product needs to be taken into consideration when discussing its overall sustainability performance. For this reason, it is not only important to improve sustainability impacts related to raw materials, value chain practice on the farm or during production processes, but also improve the product's packaging. There are various ways of how you can improve product packaging. However, it is important to understand the whole life cycle of packaging and to analyse its impacts in a holistic way.

First of all, whenever it is feasible to sell a product without any packaging, it will always be the first best solution in terms of sustainability. If packaging is needed for protection of the product, material selection and its end-of-life performance become important factors. Both dimensions have to be analysed carefully to weigh out benefits and disadvantages. In general, packaging materials from renewable sources have advantages over packaging sourced from non-renewable, thus finite resources.

However, it is important to ensure that renewable materials also have been extracted in a sustainable way. Paper from primary forest or harmful monoculture can have serious negative impacts which might be not preferable over impacts from the extraction of non-renewable materials. For instance, if you use cardboard as packaging materials you have to make sure that the cardboard is sourced in a sustainable way. It might have been recycled or as fresh fibre is used, a sustainability label such as FSC or PEFC can verify its sustainability sourcing. Next to material sourcing end-of-life use needs to be taken into consideration. Remember, between a quarter and a third of all domestic waste is packaging. In this context at least 3 R's can provide orientation for sustainability: reduce, recycle, reuse.



Sustainable Supply Chain Management (SSCM)

First of all, you should try to reduce the generation of waste by innovative products that do not need no or minimal amount of packaging. Second, packaging material you use should be designed in a way that it can be recycled easily. Purity of variety should be a priority to allow households to direct disposal into the right bin. If different layers such as plastics and cupboard are used within one packaging, end-consumers should be enabled to separate these layers in order to use the most environmental friendly waste stream. Third, reuse of packaging is very beneficial for the environment. Fresh fruits and vegetables which come in trays or crates that can be reused on retailer or household level reduce resource use as environmental impacts during resource extraction and processing will not occur as the packaging is reused.

Packaging policy – Metro Group

METRO GROUP continually strives for packaging solutions that:

- Leverage the 5R's principles- Remove, Reduce, Reuse, Renew and Recycle
- Are designed to use the fewest materials, generate the lowest volume and optimise efficiencies in transport and distribution
- Increase the use of recycled materials
- Increase the recyclability and compatibility
- Consider new packaging materials (e.g. bio-based raw materials) and processes that reduce the impact on the environment.
- Avoid the use of PVC (polyvinyl chloride) where viable technical alternative exist.
- Minimise post-industrial waste
- Communicate the correct recovery and disposal options to customer and consumer.

Source: Metro 2016

FFV are the most perishable food items, account for the highest share of food losses and are among the most wasted items (Parfitt, et al., 2010). Moving FFV from the production site to the table in the desired state of freshness poses the biggest challenge to the packaging sector. Knowing when and where the losses occur in the commodity chain helps to pinpoint, not only the food loss hot spots, but also their probable causes, which in turn will be crucial in determining the extent to which they can be avoided or not, and the packaging solutions to best address them. For instance, FFV are fragile and easily crushed, scratched, split or otherwise damaged during storage and distribution. Repair by the food cells to cuts, bruises etc., is not possible and so the effects are usually permanent. In the worst case, a weak spot for rotteness is created. As such, FFV require special treatment and precautions like control in acetylene gas production to delay ripening and maintaining low storage temperatures to extend their shelf life. The packaging material used for FFV is also especially crucial and in particular how permeable or breathable the material is because unlike most food products, they continue to 'breathe' or respire after they have been harvested, have a high water content and are intrinsically acidic. In addition, packaging for FFV should fulfil the following three basic functions: contain, protect and promote.

Sustainable Supply Chain Management (SSCM)

Contain: The package must contain and preserve a certain quantity of product as efficiently as possible. The quantity may be measured by volume, by weight or by number. The shape and dimensions of the package often have implications for the cost and strength. Compact packaging, with as little empty space inside as possible, withstands stacking pressure and handling stresses better than loose packaging. A loosely filled package also means a waste of packaging material and unnecessary transport costs. Minimum packaging minimizes disposal costs as well as resources used. Minimizing, however, should not put the safety and integrity of the product at risk.

Protect: The package must protect its contents from external threats including spoilage, breakage, damage from external environmental conditions, pilfering and theft. Primary, secondary and tertiary packaging must be designed so that the product stays in perfect condition until it reaches the end user. The package must be strong and durable enough to protect the product with a reasonable safety margin.

Promote: Packaging should act as a 'silent salesman' for the product, promoting the product at the point of sale. The package must identify and provide useful information about the produce. Visual and graphic design can only work if the package's technical and structural designs have done their job. The information on the label must be correct and conform to the legal and environmental requirements of the target market. Additional information – including the product quality and the way it was produced – can also be conveyed through the packaging. It is customary (and may be required in some cases) to provide information such as the produce name, brand, size, grade, variety, net weight, count, grower, shipper, and country of origin. It is also becoming more common to find included on the package, nutritional information, recipes, and other useful information directed specifically at the consumer.

Sustainable Supply Chain Management (SSCM)



Examples sustainable Packaging



photo © CSCP, 2016

1. Reusable foldable plastic crates

- Used mostly in Europe for transporting fresh produce
- Offers FFV optimal protection during transport
- Durable and reusable a number of times
- Has a higher initial cost than one-time use or limited use transport packaging because it is designed and manufactured with more durable, longer lasting materials.

2. Evap Environmental Packaging

- A packaging film with unique properties that extends the shelf life of fresh produce by 12-14 days
- Biodegradable and compostable
- Suitable for a variety of different applications.
- The film is a special blend of food substrates which is perforated to allow gases produced by the FFV to escape via a controlled filter system.

photo: pixabay.com/de/beerens-obst-früchte-gemischt-1546125/
license CC0 1.0



3. Paper pulp fruit trays

- Used in Asia and Europe for packing fruits as well as eggs.
- The trays are 100% biodegradable, recyclable and compostable.
- The pulp molding helps in absorbing excess moisture keeping the fruits fresh longer.

photo: pixabay.com/de/kaffeesäcke-kaffee-säcke-kaffeesack-1711812/
license CC0 1.0



4. Jute Bags

- Simple way of packaging vegetables
- Made of organic materials.
- Can be reused
- Biodegradable and recyclable
- Can be made in customized sizes to fit specific needs
- Guarantees good air circulation, keeps vegetables dry

Sustainable Supply Chain Management (SSCM)

— Transportation and storage

Transportation and storage play an important role in sustainable supply chain management. As all other products, FFV also need to get from the location of extraction to the retailer markets. As products travel from one to the other supplier along the value chain. Between each station in the supply chain, the product is moved by transportation or “go-activities”. However, at each station of the supply chain products are stored and/or processed in storage or “stop-activities” (Grandt et. Al. 2015).

Elizabeth Fretheim, Walmart’s director of business strategy and sustainability
“Within the transportation function, for example, we want to accomplish three goals: fill every trailer to capacity; drive those trailers the fewest miles possible; and use the most efficient equipment. All these efforts drive sustainability, as well as operational efficiency.”

Source: O’Reilly, Joseph (2013)

Sustainability management of “go-activities” or the transportation link in the supply chain involves fleet vehicle management and inbound and outbound transportation of goods. Whether operated in-house or by third parties, the way that a delivery fleet is managed contributes significantly to the cost and sustainability impacts of transporting goods. Effective management can reduce fuel use and vehicle emissions, reduce maintenance costs and enhance customer service. Reverse logistics offer great potentials for sustainability and business as it allows to send products or single components upstream for repairing, recycling or environmentally friendly disposal. In this regard, retailers can for instance offer facilities to their customers to return products and packaging.

- ensure the use of fuel and emission efficient vehicles for transportation of your products
- establish sustainability policies and target values for your vehicle procurement
- track vehicles and analyse environmental data such as fuel consumption and emission
- education drivers on eco-friendly driving
- reduce product miles by optimizing supplier locations and transportation routes
- optimise loads and make use of reversed logistics

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Post harvesting management is especially important with FFV. It is estimated that from 5 to 25% of fruits and vegetables leaving the farm is lost due to poor post harvest practices at viz. handling, transport and storage. In this regard appropriate storage infrastructure is critical in order to reduce food waste and ensure efficient resource use. Starting point for sustainability in storage facilities are eco-efficient technologies and practices. As the right temperature is important for shelf-life of FFV and need to be kept in storages to ensure product quality, energy management is an important pillar. Monitoring of energy consuming functions such as air-conditioning and ventilation, freezers and coolers, lighting and heating should be monitored on a continuous basis in order to identify potential room for improvements. Monitoring results should be compared to best available technologies (BAT) to estimate potential savings. Low-energy LED-lighting, HVAC systems and refrigeration equipment and their smart use can lead to significant savings. Consider also to hire energy service companies to realize energy savings and establish an energy management plan to continuously tap energy efficiency potentials. Procurement of energy from renewable sources will also reduce impacts to the environment. Use green building standards (e.g. LEED, BREEAM) to further improve on issues like water and waste use, building materials, solar orientation and natural ventilation or land use and pollution.



Case Study: Sustainable Transport at Tesco Ireland

Tesco Ireland aims to reduce CO₂ emissions in our distribution transport operations and some of the initiatives that Tesco have taken include:

- An improved centralised distribution network, reducing the number of journeys needed to take products to our stores.
- Use of route scheduling software to maximise delivery schedule with plan do review process to increase trailer fill and track planned miles versus actual travelled.
- 'Double Deck' trailers, were introduced during 2007 and are used to make deliveries to selected long-distance stores and carry almost 45% more cases of goods than conventional trailers.
- In 2011, we replaced 80 delivery vans, with the new vans being 20% more fuel efficient than their predecessors.
- Increased supplier collections: we are increasing the number of cases collected from our suppliers on Tesco vehicles by 25%. Instead of travelling back to distribution centres empty, our trucks - where possible - pick up goods from our suppliers en route, saving a journey and reducing the overall food-miles of our products.
- We have increased our local supplier base to reduce our food miles/carbon footprint.

Source: Tesco.ie



Marketing to foster consumer engagement

Expected learning outcomes

By following this handbook and the associated trainings retailers will be able to identify concrete measures to engage with customers on sustainable FFV, both through operational activities as well as customer-oriented communication.

Methodology description and principles

Obtaining some form of co-optation of the consumer is necessary to achieve an evolution of consumption habits and thereby long-term success towards a sustainable lifestyle. Thus the retailer needs to engage with the consumer so as to be able to nudge him towards sustainable consumption. From a retailer's point of view, there are a number of crucial elements in their marketing strategy to foster consumer engagement:

Brand: so that customers may better perceive the attributes of a product or commercial offering, these can be linked to a brand. A brand is the name given to a product, a family of products, or all products emanating from the same company. Unlike fresh food markets (bazaar) where the planters themselves may have a stand and thereby create visibility for their own produce (and de facto brand), in the context of FFV and supermarkets, little transparency as to the origin of the produce takes place. Branding therefore takes place at retailer-level: the quality, price, freshness, variety and other attributes of FFV will be associated with the retailer brand.

Consistency on the part of the retailer with regard to FFV attributes will help defining that retailer brand.

Customer Loyalty: one of the goals of fostering consumer engagement is to achieve customer loyalty. Indeed the greater the perceived benefits by the customer, the more loyal he or she will become. Part of the benefits perceived will occur via marketing (below) but also through transparency. There has been a noticeable trend over the last 30 years during which retailers have become ever more transparent about both content and sourcing of their offering.



Whether it be with regard to the nutritional information of packaged foods or the procurement standards of both packaged and fresh goods, retailers have been engaging with consumers through transparency. For example in the UK, the Assured Food Standards launched the Red Tractor logo in the year 2000. The flag in the Red Tractor logo assures the buyer that the food has been farmed, processed and packed in the United Kingdom and is fully traceable through every step of the supply chain. Similarly campaigns around responsible sourcing of coffee, palm oil and cocoa for example also demonstrate to the consumer that the retailer is an active stakeholder.

In the case of MauriGAP FFV, customer loyalty will be increased if the benefits of the scheme can be appropriately communicated.

Marketing to foster consumer engagement

Beyond mere communication, to achieve a successful commercial offering (and therefore benefit to both retailer and customer), the **marketing mix** needs to be coherent and convincing: hence the challenge is to get right the **5 Ps** (Product, Price, Place, Promotion, Publicity) of MauriGAP FFV. This all the more challenging due to the fresh nature of the produce sold and corresponding limited shelf life.

Retailers exercise control to a greater or lesser degree on these 5Ps:

- **Product:** procurement department can inspect and select produce conforming to their criteria and guidelines
- **Price:** they can decide on their margin bearing in mind they are in a competitive environment; retailers have the advantage of balancing margins through a wide-range of goods, also being able to cross-subsidise (which planters can rarely achieve when selling directly to the consumer)
- **Place:** retailers are limited to their own locations
- **Promotion:** this is where the retailer, although he is not the producer has great leverage and can be creative. Indeed PLV (Promotion sur Lieu de Vente)/in-store promotion is a major way to engage with the consumer. Through animations, demonstrations, samplings, tastings, the retailer can create a forum to interact with the customer. In the case of MauriGAP FFV, this would be ideal to both inform about the standard and sample labelled produce
- **Publicity:** retailers can advertise, produce leaflets, offer discounts around their offering in general and around certain products in particular. Moreover they can customise official MauriGAP documentation with their own marketing angle.

Another way for Retailers to look into their marketing strategy is by using the 4c's:

- **Customer value:** address needs and wants of customers while minimising solution costs (Benefits – cost = value)
- **Cost:** not only production costs play a role but rather the customer's willingness to pay
- **Convenience:** simplify how a customer does business with you (e.g. ordering, selection, payment, delivery, complaint)
- **Communications:** deliver meaningful content, try to personalise

Achievements around MauriGAP could provide a building block to the retailer's Corporate Social Responsibility strategy and feed into its annual CSR reporting.

Marketing to foster consumer engagement

Application

Retailers will need to reflect on their brand with respect to MauriGAP but also on the **marketing mix** surrounding MauriGAP FFV: e.g.

- sourcing *primarily* from MauriGAP planters
- procuring MauriGAP at a premium price (e.g. 10%)
- passing on the premium to the consumer (proportionally, under-, over-)
- publicising it
- promoting it in-store
- communicating it (“xx% of our FFV are MauriGAP certified”, “we back sustainable agriculture in Maurice”)

In-store promotions also enable to answer the reservations emerging from the Consumer Survey (April 2016), in which consumers were favourable about certification and MauriGAP but were sensitive to appearance of FFV. Indeed, in-store promotions of both raw and cooked FFV, which present cosmetic imperfections, could allay such reservations; all the more so if labelled/MauriGAP produce has better gustative qualities (flavour, texture, aroma).

In addition, the shelf-life aspect could also be emphasised. While it is known that the abuse of nitrogen-based fertilisers as well as poor harvest- and post-harvest practices can negatively impact shelf-life, then if MauriGAP-certified FFV can be demonstrated to have better food preservation attributes, then this can be actively communicated to the consumer in on-product/on-shelf labelling.

Appropriate product/supplier tracing is a pre-requisite (date harvested). This could also be a USP of MauriGAP FFV, i.e. that date of harvest is always documented (and displayed in-store), whereas non-certified may not be able to offer that.

Communication

As a complement to the core elements of the marketing mix, communication plays an important role.

Nowadays, the retailer’s website will be the central repository of communication materials: it will be both a source of data and of customer-facing interaction.

Information and advertising campaigns via posters, billboards and media planning are further channels which may be used. In the context of Mauritius, one could expect to target audiences more specifically

- e.g. for rural populations, large format billboards
- e.g. for the young as well as professionalised middle classes, making use of mobile apps / advertising

Marketing to foster consumer engagement

One could also consider “defensive” communication: e.g. how to wash out pesticides of non-MauriGAP labelled FFV.

The communication channels ought to be adapted to the timeframe of the product campaign and to the target groups:

1. initial product explanations through flyers and in-store information, retailer website and social media
2. “street marketing”: engaging with customers outside the retailer’s premises, e.g. forecourt, parking lot
3. marketing actions for certain target groups, e.g. leveraging the curiosity of children and youths through punctual actions in schools; could be coupled with an introduction to sustainability in the curriculum
4. “1-to-many” communication via radio, television and press, which reinforces the product messages delivered in the retailer context (1.)

Sustainability Communication as consumer education

An important social dimension of communicating on sustainable produce is that it may be seen as *educating the consumer*. Indeed, on MauriGAP FFV, explaining *upstream* issues such as

- welfare of farm workers
- environmental impact of water and soil management
- health and environmental impact of rational use of agro-chemicals
- economic aspects of sustaining small planters (rather than imports): Buy made in Mauritius
- economic and environmental impact of buying local (fewer “produce miles”, money stays in Mauritius)

would be expected to resonate with customers and educate them at the same time about the sustainability issues around something as banal as FFV which *prima facie* may otherwise appear trivial.

Furthermore, *downstream* issues, such as avoiding food and package waste, offers useful insights into household and community improvement:

- recipes for using excess or leftover food
- tips to re-use or recycle packaging (in the long-term, a take-back scheme could be envisaged, as with bottles)

Marketing to foster consumer engagement

Private Labels, i.e. a retail chain's own label, can offer specific positioning. Some European retailers even offer several labels, each with its own positioning, e.g. "luxury", "healthy", "value for money".



As a further engagement measure, retailers could initiate lifestyle or community-oriented partnerships: for example with nutrition specialists or schools, demonstrating the benefits of a MauriGAP-based FFV diet. A monthly plan (or seasonal to cover a harvesting schedule) could be drawn up to cover the nutritional requirements of a target population.

Elements of a marketing campaign

Whereas a complete description of a marketing campaign is available as a 20-page presentation in Annex III, including examples and suggestions, it is worth summarising here key elements:

1. Explain the product & context
2. Discover the product
3. Label the product
4. Communicate with the consumer

Self-learning exercise

- a) define your product; explain which customer value it generates, i.e. which needs/wants it fulfills
- b) determine the price, also as a function of competition and customer willingness to pay
- c) indicate where and how it is to be sold; explain the convenience aspect
- d) propose some communication messages around the product or the purchase

Marketing to foster consumer engagement

Marketing community

In the case of MauriGAP, establishing (and later identifying and animating) a community around MauriGAP, highlights the importance of the programme and offers transparency to all stakeholders. It becomes self-reinforcing as the number of members and actors in the community rises.

Hence, it would be recommended to use the notion of community member (or „partner“ or „associate“), for those who, downstream from farming, are actively supporting MauriGAP. For example, if a wholesaler or retailer commits to sourcing majoritarily its FFV from MauriGAP-certified planters, then that commercial player could be recognised as an „établissement partenaire“ of MauriGAP (or „programme member“). This accreditation would ideally be validated by an independent organisation and ought to have a fixed but renewal duration: 2 years initially would be appropriate.

Given the initial scarcity of MauriGAP-certified supply, procuring more than 50% of the wholesaler's or retailer's FFV may not be feasible but a definite undertaking on their part ought to be given. This ought to have the additional benefit of incentivising further planters to become MauriGAP-certified. All the more so, if beyond the retailing sector, the hospitality sector also commits to MauriGAP and becomes part of the MauriGAP community. Ultimately, in say 3-5 years, hotels and retailers which are not „établissement partenaire“, i.e. not members of the community, ought in fact to be the exception.

A useful additional feature of the community would be the provision of a contractual framework to manage the relationship between planter and off-taker: this offers not only transparency and contractual security but also efficiency for both sides, i.e. avoiding the negotiation of terms of trade. Indeed, this is a step towards professionalisation of the farming community which MauriGAP is seeking to encourage.

The community could be animated through events, presentations and the like. There could be an annual „Foire des planteurs MauriGAP“, during which not only planters could exhibit their wares, service providers (e.g. agricultural machinery) their innovations but also reach out to procurement and managers from the retail and hospitality sectors. Moreover, there could be an educational/employment dimension to this, as the event could promote farming as a career („MauriGAP planters adhere to social standards“, „MauriGAP planters achieve higher revenues“).

Marketing to foster consumer engagement



Case Study: SONAE (Retailer, Portugal)



Raise customer awareness of fishing sustainability issues

Target description

One of the primary goals of Sonae's Sustainable Fishing Policy is consumer awareness of the problems underlying non-sustainable fishing, in order to promote the sustainability of the business and planet.

Achievements

In the last three years, we reinforced the communication of the CCL label (Local Fishing Harbour Purchasing Certificate) in fresh fish stalls and launched the project (which aimed at raising awareness among customers concerning the purchase of products captured using sustainable fishing methods, which are controlled and local). The progress made during last year will be transmitted to customers in 2016.

In 2015, we have started the development of communication tools, in order to highlight products from sustainable fishing methods and we attached a Suppliers General Contract declaration from our suppliers on this issue.

Source: Sonae

Lessons learned

Similar to MauriGAP, double-pronged approach of working upstream on supply-side and downstream on demand-side. Moreover communication aspects used in terms of labelling and even Supplier Contracts, i.e. transparency for all stakeholders

Marketing to foster consumer engagement

FURTHER CASE STUDIES



Case Study: Sustainable Sourcing of high quality products, which are authentic and tasty

Carrefour has the objective to propose high quality products, which are authentic and tasty:

Through our brand « Filières Qualité Carrefour (FQC) » we established a unique partnership with our producers. This economical collaboration allows Carrefour and its partner producers to develop jointly innovation in agriculture. These agricultural channels of raw products are henceforth laboratories of the agro-ecology. We can make a focus on the eggs issued from chickens raised in France and feed with 100% French alimentation which allows to create a shorter loop and avoid the importation of soy with a possible risk of deforestation. The FQC beef is fed with grass in pasturelands and a part of the alimentation is issued from the exploitation. This model maintains meadows (which stock the carbon) issued from the agro-ecology.

Summary and geographic scope

Create innovation through Agro-Ecology with our partners in the agricultural channels
France & Company-wide

Source: Carrefour.fr



Case Study: Specialised wholesaler: Bimandiri in Indonesia

The Bimandiri company in Indonesia, which has changed from a traditional wholesaler to a supplier of vegetables and fruits mainly to Carrefour, is an example of a specialised intermediary. Bimandiri encourages farmers to cooperate in producer organisations and works with those groups on the basis of agreed quantities. The company has worked closely with its producer organisations, supplying technical assistance and credit, in order to assure quality standards and consistent volumes for its retailer client. Bimandiri has maintained preferred suppliers lists but moved away from a close extension role. It continues to implement transparent negotiated producer prices.

Source: FAO, 2016



Marketing to foster consumer engagement



Case Study: Normincorp in Mindanao, Philippines

Farmers of the Northern Mindanao Vegetable Producers' Association, NorminVeggies, are able to successfully participate in dynamic vegetable chains primarily because of the organisational structure they chose in order to respond to the market challenges. This involves a corporation, Normincorp, which gives them the agility needed for each development in the supply chain. Normincorp's formation signified a new development in marketing for small farmers.

While established as a stock corporation, Normincorp functions more like a cooperative and has a social enterprise character. It was a set up and operated with keen business sense but also with full empathy for the small farmers. As market facilitator, Normincorp saw to it that production was programmed by farmer clusters with their respective cluster leaders, according to marketing plans; that quality farm and post-harvest management could be done by each farmer in the cluster; and that coordination could be provided for the sequence of activities that include order taking, outshipment logistics, billing/charging, collection and remittance to the farmers. For these services, Normincorp earns a market facilitation fee based on the value of the sale and uses the income to cover the marketing management overhead.

Normincorp is not a trading company. Rather, it is a market facilitator linking the farmer through his or her cluster directly to the buyer. The farmer is given the buyer's price, and s/he is therefore accountable for the product and retains ownership of the product up to the point of sale. This encourages the farmer to supply the best quality since the price is given to him/her and all sales are remitted directly after deducting the market facilitation fee, which is based on the quantity of accepted vegetables. Conversely, all rejects are individually charged to the farmer concerned. Labelling of products per farm or farmer provides this traceability.

Source: FAO, 2016



Marketing to foster consumer engagement



Case Study: ASOFAIL Farmers Association, Intibucá, Honduras

ASOFAIL is a farmers' organization founded in 1997 in the district of Intibucá, Honduras. ASOFAIL has been supplying Walmart since 2010. It currently has 305 members, but not all of them participate in the chain. Members participating in the fresh vegetable chain receive technical assistance, inputs and training from the cooperative, which also coordinates them to ensure a stable and varied production all year round.

The chain is promising, selling an average 9,000 units of vegetables per week, but is based on an informal agreement and the cooperative struggles to cover Walmart's demand. In order to strengthen the cooperative and at the same time make it accessible to women and younger farmers, a joint project was launched by VECO, ASOFAIL and COMRURAL in 2013. The pilot project targets producers aged under 35 who want to be involved in the chain, offering them a viable business plan and finance to install irrigation systems and greenhouses. Nearly all of the farmers own the land they cultivate: only 4% rent it. About half of the farmers' revenues come from vegetable production. On average, they have 0.77 hectares per plot but only use half of it, so the opportunities for expansion are plentiful. Their farms are accessible by road and 80% are connected to some form of public transport. Most buildings have running water but no electricity. Most houses need to be secured because they are situated in a region vulnerable to landslides.

ASOFAIL applies the following strategies

- To solve the credit problem, it promotes the partnership between ASOFAIL and CACIL (a credit cooperative) so that farmers can acquire the funding necessary to invest and buy inputs.
- It works to strengthen the relationship between ASOFAIL and WALMART, while at the same time searching for other buyers.
- To increase productivity ASOFAIL organises training on Good Agricultural Practices for farmers.
- To prevent diseases and secure stable production, it promotes protective techniques such as greenhouses.
- It encourages the farmers to apply for a GAP certificate, explaining its importance for future contracts.
- To improve the post-harvest process it buys essential equipment for the warehouses and ensures it is correctly used by providing a Good Management Practices manual.
- Promotes the participation of women at all levels in the chain.
- Supports a pilot programme that helps producers under 35 to increase youth participation,
- Promotes drip irrigation to replace less efficient irrigation systems.

Source: VECO/Vredeseilanden, 2016



in Mauritius and the MauriGAP standard

Understanding the horticultural supply chains in Mauritius

Mauritius is a net food importer and imports all its staple food namely wheat and rice. It is however self-sufficient in its total vegetables production representing an average annual production of about 120,000 tonnes over an area of about 8,100 hectares on holdings averaging 0.25 ha. Fruit production which consists of mainly banana (24%), pineapple (31%), and seasonal fruits such as litchi (16%) and mangoes (6%) is estimated at 42,660 tonnes annually, over an equivalent of 3,065 ha. The FFV sector though not a major contributor to national production and wealth, still contribute to the economy in term of food security, sustainable development and the mitigation of climate change impacts.

Agricultural production activities are undertaken mainly by a large number of small producers (some 9,000) and also by a few companies in the corporate sector involving mainly sugar estates. Fruits are produced mainly in backyards. There is some corporate sector involvement in fruit production namely of pitaya, passion fruit, papaya, litchi, jujube and citrus for the fresh market or for processing.

Production of fruits and vegetables is production led and thereby economically sub-optimal to producers. Market-led farming would allow farmers to be closer to demand and revenue opportunities. Vertical integration by small growers into value added activities is limited and undertaken by agrosmes. The sector is highly vulnerable to climate extremes which affects small farmers' productivity and farm income. Post-harvest management is limited to grading and sorting and washing at field level.

Supply chains are weak in terms of regular supply of planting material, storage infrastructure and agri-service support; absence of product norms and standards. Small farmers though not having a high academic background are experienced while the private sector has shown interest in the sector further to reform of the EU sugar regime. The latter has the resources to further develop the sector both quantitatively and qualitatively.

The FFV sector has opportunities for development given the availability of abandoned sugarcane lands, emergence of agro investors, growing awareness for environment-friendly agriculture, and demand for healthy diets, nutritious food as well as convenience products in line with new lifestyle of the population and a growing tourism industry.

Small grower farms are characterized by relatively low farm productivity; an over-reliance on agro-chemicals; low level of investment/farm mechanisation, and unwillingness to take risks. Factors affecting the sector's development are high cost of labour, shortage of skilled and unskilled labour. The sector is considered unattractive to the youth and has an ageing farming community.

Production practices are not transparent with absence of norms and standards and there is at present no traceability of produce from farm to fork. Enforcement is limited with respect to use of agro chemicals.

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The market structure is weak and is production led with all economic actors having the same behaviour and stock and sell simultaneously. This result in seasonal gluts and unstable / low prices. Almost all operators of the production and marketing chain consider present marketing conditions at the national level of fruits and vegetables as unsatisfactory especially in Port Louis. The Ministry intends to strengthen the marketing sector with a new national wholesale market which will bring market efficiency, synergies and cost sharing between operators, better transparency, modern and adequate premises to the system. Over the years the market structure is evolving with the development of the country and emergence of supermarkets and dedicated outlets retailing FFV. The latter is gaining importance over established regional markets/fairs. Recently the emergence of short chain has also been noted where NGOs (Velo vert, Earth market) have entered in niche markets viz. 'bio' food circumventing intermediaries and selling directly to consumers.

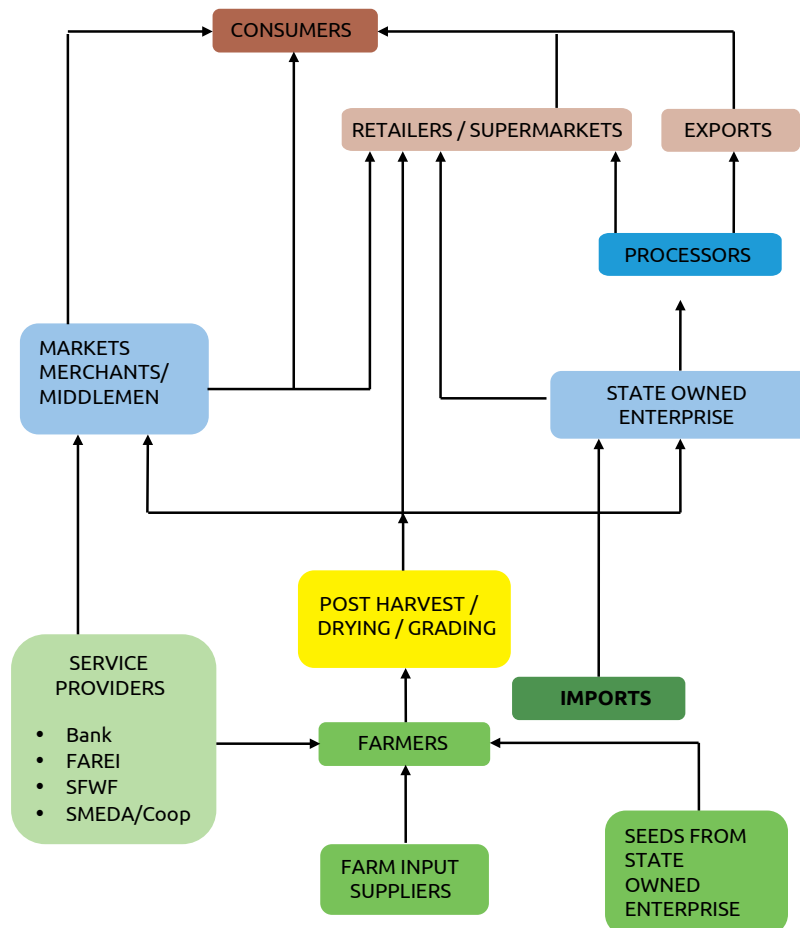
The Ministry of Agro Industry and Food Security along with the Food and Agricultural Research and Extension Institute is currently implementing a local Good Agricultural Practices (GAP) viz. MauriGAP basic level (MS184:2015) under the green Agricultural certification programme. The Standard establishes requirements for sustainable agriculture specifically for crop production, focusing on Good Agricultural Practices for food safety, environmental stewardship and farmer/worker welfare. It applies to open and protected field cultivation as well as hydroponics production.

Taking into account the demand for quality and safe food, implications of climate change, depleting resources and the need for sustainability, the Ministry's strategic plan 2016-2020 emphasize a fresh and innovative approach towards growth in agricultural production and food security and the economic empowerment of the farming community. It highlights the following strategic interventions for the sector's development:

1. Shift towards bio-farming for safe and quality food, with standards and norms; preferably in Clusters /Special Agricultural Production Areas;
2. Provision of incentives for the adoption of sustainable production practices; clustering; exploitation of abandoned land; agri-business ventures in processing food for local and export market;
3. R&D in new technologies to increase land productivity and sustainable production and ensure food and nutrition security; biotechnology and biological inputs in production systems;
4. Technology exchange, capacity building and effective information and communication management; Strengthening of marketing and market information services to the farming community;
5. Empowering the agricultural community economically and technically especially the younger, skilled generation by providing opportunities and appropriate support to enable them to emerge as agricultural entrepreneurs;
6. Promoting commodity value chain and agribusiness development

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Value chain for the vegetables production sector



The importance of good agricultural practices (GAP) in the horticultural supply chain

The GAP concept

The concept of GAP evolved recently as a result of the big concern about food safety and quality, and the environmental sustainability of agriculture. GAP offers benefits to farmers and consumers to meet specific objectives of food security, food quality, production efficiency, livelihood and environmental protection. In a broad sense GAP applies available knowledge in addressing environmental, economic and social sustainability for on-farm production and post-production processing, resulting in safe and healthy food and non-food agricultural products.

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The GAP has been developed by the FAO and adapted in different formats by FFV retail chains in developed countries. The best known international one is the GlobalGAP standard which covers export of horticultural produce to Europe. It aims to improve environmental, economic and social sustainability of farm production and results in safe and quality food. A GAP certification implies produce is not contaminated (physical, microbial and chemical) and addresses consumer/retail industry demand for safe food and that it has been produce using natural resources in a sustainable manner.

The GAP involves all stakeholders from the supply side (farmers, farmers' organizations, workers), the demand side (retailers, processors and consumers) and those support institutions and services working towards food security and quality, sustainable production and environmental conservation. Though GAP approach responded to the growing demands globalized market, it is also very important for national markets. It enables producers to meet increasing demand for quality food (includes information), produced safely and sustainably through formalized codes of practices and farm records. GAP farm certification is of high importance to a country's whose economy is based on tourism and where visitors are accustomed to high food standards.

Produce quality and safety

Product quality is defined as the totality of characteristics of a product that bears on its ability to satisfy stated or implied needs. In other words, good quality exists when the product complies with the requirements specified by the client. This means quality is a term defined by the consumer, buyer, grader or any other. Using these definitions, safety is a component of quality but safety is the most important component of quality, because a lack of safety can result in serious injury and even death for the consumer of the product.

What are the quality attributes of fresh produce?

One way is to observe its characteristics as the product is encountered and consumed. Using this system, quality attributes are often classified as external, internal or hidden.

The "hidden attributes" are more difficult for most consumers to measure or differentiate, but the perception of these contributes to the consumer's decision to accept or reject and to differentiate food products. Hidden quality attributes include wholesomeness, nutritional value and safety of a product.

Quality attributes		
External	Internal	Hidden
Appearance (size, colour, gloss)	Taste	Wholesomeness
Feel	Odour	Nutritive value
Defects	Texture	Safety

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Safety differs from many other quality attributes because it is a quality attribute that is difficult to observe. A product can appear to be of high quality, i.e. well coloured, appetizing, flavourful, and still be unsafe because it is contaminated with undetected pathogenic organisms, toxic chemicals or physical hazards. On the other hand, a product that seems to lack many of the visible quality attributes can be safe.

How can GAP promote food safety?

There are many activities that take place as food products move from the farm to the table. These include activities related to production, harvesting, post-harvest operations, packaging, transportation, and storage. Implementing programs such as the use of GAP are important steps in reducing possible hazards associated with the produce throughout the production and distribution chain. The food chain approach to food safety and quality recognizes that the responsibility for the supply of food that is safe, healthy and nutritious is shared along the entire food chain – by all the operators involved in production, processing, trade and consumption of food. Food safety is an obligation of all food sector operators (producers, processors, exporters, importers, etc.) to place on the market wholesome products that:

- comply with current requirements;
- do not have a harmful effect on consumer health;
- if defective, can be withdrawn from the market.

Consumers need to be assured through traceability regarding products they eat

In the horticultural supply chain, consumers and other clients require:

- information on production of the product: where, when, how, with what components;
- respect for the technical specifications: adeptness, control, audits;
- crisis management: competence to find and withdraw defective or dangerous products from sales points;
- assurance that the company produces in a socially responsible way.

Traceability is the ability to trace the history, application and location of any entity by means of recorded identification.

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The MauriGAP standards

Background

MauriGAP is an acronym for Mauritius Good Agricultural Practices and is a local farm production standard for fresh fruits and vegetables. It has been developed in a context of increasing demand for quality food, produced safely and sustainably. To meet this challenge, there is a need for farmers to adopt Good Agricultural Practices (GAP) and formalize farm production standards. The concept of Good Agricultural Practices is the application of available knowledge to the use of the natural resource base in a sustainable way for the production of safe, healthy food and non-food agricultural products, in a humane manner, while achieving economic viability and social stability. The underlying theme is one of knowing, understanding, planning, measuring, recording, and managing to achieve identified social, environmental and production goals.

Scope of the MauriGAP standard

The MAURIGAP standard has been developed with the Mauritius Standards Bureau with the participation of stakeholders and is offered as a stepping stone to GLOBAL GAP international recognised standards. It establishes requirements for sustainable crop production, focusing on Good Agricultural Practices for food safety, environmental stewardship and farmer/worker welfare. It will be offered at three levels namely basic, intermediate (under development) and advanced level with the latter to be pitched to international norms. It applies to open and protected field cultivation, as well as to hydroponics. It may be used for verification such as inspection and certification purposes of the production process. It is a voluntary standard. The certification body is the Mauritius Agricultural Standards Certification Body of the Ministry of Agro Industry and Food Security (MAIFS). Technical assistance and training in MauriGAP implementation is offered free by the Food and Agricultural Research and Extension Institute (FAREI).

MauriGAP (basic level)

The standard has been adapted from international standards of Good Agricultural Practices and takes into accounts local realities and provides a minimum achievable level of assurance and reliability acceptable to the local market. It provides transparency and accountability of production practices, cost effective solutions, will promote market access and help producers gain gradual recognition. It will assist FFV retailers to trace producers, monitor their practices and develop a network of reliable producer/suppliers. The standard is a prerequisite to benefit the MAIFS's Bio Farming Promotion Scheme.

The standard requirements covers:

- Soil and substrate management
- Environmentally sound practices for natural resources:
Rational and efficient use of farm resources (water)/ inputs
- Crop protection
- Harvest best practices /hygiene
- Workers' health, welfare and safety
- Agricultural waste recycling
- Records/traceability

in Mauritius and the MauriGAP standard

The following slides gives the main elements of the MauriGAP standards:

Background

- The Government is implementing a Green Agricultural Certification Scheme -**MAURIGAP**- to increase the supply of safe and high quality locally produced fresh food and vegetables (FFV) while promoting more sustainable crop production.
- The SAG project will complement the Green Agricultural Certification Scheme by extending the focus on the marketing pull, thus contributing to scaling up MAURIGAP.

MauriGAP standards (MS 184:2015- Basic level)

- Acronym for Mauritius Good Agricultural Practices
- A framework for Good Agricultural Practices (GAP) on horticultural local farms
- Adapted from international standards of Good Agricultural Practices (GlobalGAP).
- Offered at 3 levels (basic, intermediate and advance)
- Accounts for local realities
- Provides a minimum achievable level of assurance and reliability acceptable to the local market

MauriGAP standards

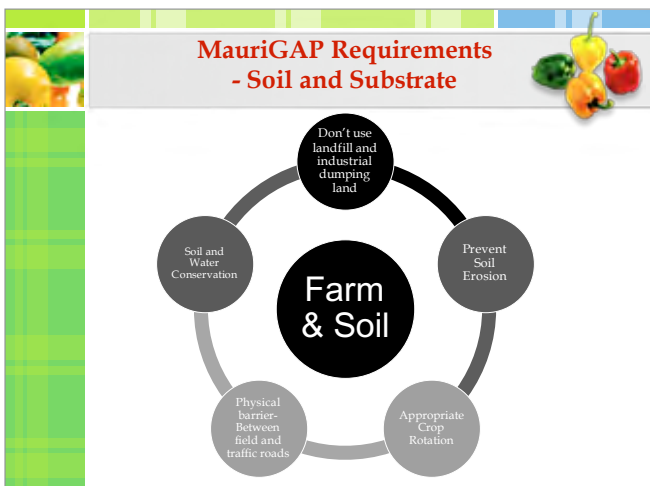
- Certification: Mauritius Agricultural Standards Certification Body (MAIFS)
- Validity: 1 years
- Microbial and chemical residue tests by institutions for level 1
- Test will be on a random basis

MauriGAP standards

SCOPE- Applies to open field FFV and covers:

- Efficient use of resources (soil, water, farm inputs)
- Adoption of environmentally sound practices
- Crop protection best practices for safer products and Biodiversity preservation
- Pre- and postharvest best practices
- Workers' health and safety
- Transparency and accountability (farm records)

49 control points at the farm
Implies risk analysis to prevent product contamination and accidents



MauriGAP- Fertilisers (Rational Use)

What fertilizer should I use and in what quantity?

Consult your technician to know your fertility status.

Use only safe and approved fertiliser and use according to the quality of the soil.

How and where should I keep fertilizers?

Fertilizers should be stored in a safe place.

Fertilizers should be stored in a secure place away from children, animals, and water sources.

The place must be covered, secure, and well-ventilated.

Approved fertilizers with the following safety labels: "KAP" or "KAP" (KAP) or "KAP" (KAP).

The place must be well-ventilated, and the ground must be covered.


Picture Source: Guidelines "Good Agricultural Practices for Family Agriculture", 2007 URL: <http://www.fao.org/3/a-a1193e.pdf>

in Mauritius and the MauriGAP standard

MauriGAP- Irrigation (Water efficiency)


How must water and irrigation be used?

The Use of irrigation- Drip, sprinkler and Micro irrigation increase the amount of production

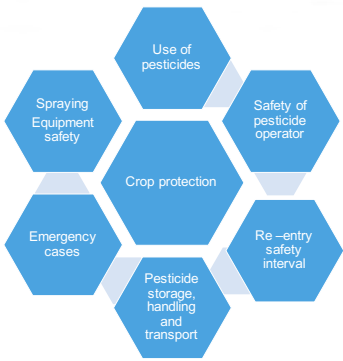


- Identify the water sources used for irrigation and with the assistance of the technician verify that they are not contaminated.

Remember - **Treated/ Untreated water must never be used for irrigation**




MauriGAP- Crop Protection (minimising impact)



MauriGAP- Harvesting (Reduce PH losses and contamination risks)

Best Harvesting Practices


Workers Hygiene



- ✓ Observe-Pre harvest safety interval
- ✓ Harvest-at optimum maturity –early in the morning or late in the evening
- ✓ Use clean tools, handled carefully and placed in clean containers
- ✓ Field shelters for shade of harvest pending collection
- ✓ Precautions shall be taken to prevent contamination from physical and microbial hazards

MauriGAP- Waste and Pollution management and re-cycling

Wastes: Dispose of waste properly. e.g. Use of Bin



- Agriculture waste shall not be dumped or allowed to accumulate in the packing area, field
- Such waste shall preferably be composted or recycled as appropriate

MauriGAP- Worker's welfare & safety

Worker health and hygiene program



- First aid kit
- Emergency phones (fire brigade, police, hospital)
- Make a checkup for you and your family and workers.
- Participate in health sessions carried out by the hospital or health centers.
- Protective Equipments

MauriGAP- Records (Transparency and traceability)

Advantages of the registry

- Get a better knowledge of your field and crop
- Save money in production
- Identify where the problems, pests and diseases are located
- Improve the quality of the product

Registry must be done every day once the work is over (date of sowing, harvest, application of agro-chemicals, etc.)

Registries serve to keep track of the history of the product, hence they must be filed for at least three years.



Picture Source:
 Guidelines "Good Agricultural Practices for Family Agriculture", 2007
 URL: <http://www.fao.org/3/a-a1193e.pdf>

in Mauritius and the MauriGAP standard

MauriGAP- Records

Following records shall be maintained by the farmer:

- . Field/Plot history
- . Nutrient application
- . Planting
- . Irrigation
- . Equipment maintenance and calibration
- . Pesticide use
- . Produce harvest
- . Worker training
- . Traceability
- . Analysis
- . Inspections/verifications and related recommendations/complaints/corrective actions

MauriGAP Standards check points

Check Point	MauriGAP standard	Major/Minor	Standard compliance Yes/No	Remarks
4.1 Farm and Soil				
	Has the cultivated land been previously used as landfill or industrial dumping?	Major		
	Are measures been taken to conserve soil and water? (Where applicable) example: Mechanical/ Agronomical/ soil management	Minor		
	Does farmer follow crop rotation practices to reduce the pest and diseases and to improve soil fertility? List last three previous crop and following crop.	Major		
	Is there a physical barrier maintained by farmer (for fields beside major roads)? (Impermeable to semi permeable barrier to minimize contamination)	Major		
	Type of physical barrier and width set up by farmer			

Check Point	MauriGAP standard	Major/Minor	Standard compliance Yes/No	Remarks
4.2 Crop Varieties				
	Source of seed/ Planting Material:	Major		
	<input type="checkbox"/> Own planting material			
	<input type="checkbox"/> Seeds from previous crops approved QDS			
	<input type="checkbox"/> FAREI recommended varieties			
	<input type="checkbox"/> Purchased from approved suppliers			
	<input type="checkbox"/> If Imported, approved by NPPO			
4.3 Fertilizers				
	Are fertilizers, manure and compost used as per FAREI recommendations?	Major		
	Is the manure fully composted before use and is it stockpiled away from water courses and documented?			
4.3.1 Fertilizer Application				
	Are fertilizers applied in split applications? (super humid regions)	Minor		
	Is it applied at a distance closer than 6 m to land bordering water courses, rives, steam and lakes?	Major		
	Are all nitrogenous fertilizers applied according to soil pH?	Minor		
	Are they applied during heavy rains?			

MauriGAP standards check points

Check Point	MauriGAP standard	Major/Minor	Standard compliance Yes/No	Remarks
4.3.2 Dosage and frequency of fertilizer				
	Which type of fertilizer are used and what is the quantity used and timing of application?	Minor		
4.3.3 Storage				
	Are fertilizers stored in a dry and secured area?	Minor		
4.4 Irrigation				
	Source of Irrigation:	Minor		
	Methods of irrigation used			
	Are treated /untreated sewage water and waste water used?	Major		
	Is water source identifiable and protected from pollutants and surface run off (Bore hore water)?	Major		
	Is the irrigation network maintained to ensure uniform application and to reduce leakage?	Minor		
	Does farmer calculate water intake details for crop prior to irrigation?	Minor		
	Is it appropriate as per FAREI Guidelines?			

MauriGAP standards check points

Check Point	MauriGAP standard	Major/Minor	Standard compliance Yes/No	Remarks
4.5 Crop Protection				
	Integrated Pest management: Which methods are used for crop protection?	Minor		
	<ul style="list-style-type: none"> ▪ Preventive strategy ▪ Monitoring ▪ Control (biological) ▪ Chemical Control-use of pesticides 			
4.5.1 Use of Pesticide				
	Are recommended pesticides being used as per national legal requirement?	Major		
	Are mixtures of pesticides used? If yes then, is it recommended by FAREI?	Major		
	Is same group of pesticide being used repeatedly?	Major		
	Is clean water used for the preparation of spray mix on food crops to be consumed raw and fresh?	Major		
	Is pre-harvest interval being followed? Which pesticide was applied and at what dosage? Confirm the PHI by crosschecking and if needed take crop sample as per the risk	Major		

Check Point	MauriGAP standard	Major/Minor	Standard compliance Yes/No	Remarks
4.5.2 Spraying				
	Does farmer plan spray volumes in order to minimize any surplus of pesticide?	Minor		
	In case of surplus, how is it managed?	Major		
	Is spraying undertaken during windy and/or rainy weather?	Minor		
4.5.3 Safety of pesticide operator				
	How old is the pesticide operator?	Major		
	Is he trained? if yes check the records			
	Does operator wear recommended protective clothing and equipment while spraying?	Major		
	Does he change the protective clothing immediately after spraying?			
	Is there adequate facility to keep protective clothing and equipment?	Minor		
	Is there adequate facility like clean water, soap and towels?	Major		
	Does operator clean/wash spray equipment, protective equipment and clothing after use?	Minor		
	Are telephone for appropriate emergency services available on site?	Minor		
	For how many hours is the operator employed on a schedule operation for pesticide spraying?	Major		

in Mauritius and the MauriGAP standard

Check Point	MauriGAP standard	Major/Minor	Standard compliance Yes/No	Remarks
4.5.4 Emergency Cases: Are documented, defined emergency procedures communicated to workers?		Minor		
4.5.5 Re-entry safety interval				
Is farmer aware about re-entry safety interval period as indicated on the label of the pesticide containers?		Major		
Are warning signs appropriately placed in sprayed field to prevent re-entry?		Major		
4.5.6 Equipment safety and efficiency measures				
Are all spraying apparatus regularly verified, maintained and calibrated?		Major		
4.5.8 Pesticides storage and handling				
a) Large quantities: Is the pesticide store located away from any water source and from residential buildings?		Major		
b) Is the store well ventilated and secured?				
b) Small quantities: Are pesticides kept in a well ventilated and secured box or cupboard?		Major		
Is pesticide stored and handled carefully to protect environment?		Minor		
Are all pesticides kept in their original container or package with their label?		Major		
Are safety signs displayed inside and outside of pesticide store?		Minor		
4.5.9 Transport of pesticide				
Are pesticides adequately secured during transport?		Minor		
Are empty containers of pesticides being reused?		Major		
How are empty pesticide containers disposed of?		Major		

Check Point	MauriGAP standard	Major/Minor	Standard compliance Yes/No	Remarks
4.6 Harvesting				
Is the produce being harvested early in the morning or late in the afternoon?		Minor		
Is it placed under shade when awaiting collection?				
Are produce harvested using clean tools; handled carefully and placed in clean containers?		Major		
Are precautions being taken to prevent contamination of harvested produce from physical and microbial hazards?		Major		
4.7 Produce handling				
Is clean potable water used for washing of containers and harvested produce?		Major		
Do workers wash their hands with clean water and soap before harvesting and handling the harvested produce?		Major		
Is produce handled in a clean and hygienic environment?		Minor		
4.8 Waste and pollution management and re-cycling				
Is waste accumulated in the packing area (where applicable)?		Minor		
If no, is it composted or recycled?				
4.9 worker welfare				
Are workers trained to use the machinery/equipment which they are required to operate?		Major		
4.10 Records				
Are all records maintained up to date?		Major		
Is the farm diary filled appropriately?				

Integration of Farmers along the Value Chain

(Adapted from: 1. Horticultural Chain management for Eastern and Southern Africa-Theoretical manual, FAO & Commonwealth Secretariat(2008); 2. Contract farming- Partnership for growth; FAO Agricultural Services Bulletin No. 145(2001); 3.

Many small-scale farmers in Mauritius are unable to satisfy market requirements for horticultural produce for supermarkets or packing house. This is owing to the small size of their operations, poor organization, use of low technologies, dependence on unskilled labour, lack of capital and poor support services. For many commercial entities (such as packing houses and supermarkets, the prospect of working with a multitude of individual small farmers raises concerns about communication, management, quality, reliability of supply and transaction costs.

Farmers are constrained by a multitude of factors that prevent them to supply fruits and vegetables to stakeholders higher up along the value chain. These factors include:

- Lack of financial capacity to attain economies of scale and address the exigencies of the hotel industry and hypermarkets.
- Lack of logistics for adequate storage and implementation capacity of quality standards.
- Lack of market intelligence for optimized marketing of agricultural produce.
- Traceability issues and inability for timely supply of fruits and vegetables in the desired amount and quality.
- Limited capacity in supply both quantitatively and variety wise.
- Limited working capital (.credit squeeze from retailers).

in Mauritius and the MauriGAP standard

The following above issues have acted as major bottlenecks for farmers to increase their marketability towards increasing their return on investment to established marketing outlets. With a view to integrate the farming community along the value chain, the following measures are being proposed;

- Regrouping of farmers into clusters for economies for scale and development of financial capacity to meet the exigencies of the market structure.
- Sensitization towards the need for traceability which is an important component of quality standards.
- Training and capacity building on business plan preparation and knowledge of market requirements.
- The development of a whole sale market which will give equal chance to farmers for optimised marketing of their produce.
- The adoption of fair pricing policy by retailers to encourage the farmers to adopt market norms and for the provision of a sustainable revenue to small producers (policy of Corporate Social Responsibility).
- Long term contracts to farmers to efficient and effective long term production planning.
- Improving their competitiveness (both yield and produce quality wise)
- Providing an enabling environment to strengthen linkage between planter-suppliers and market actors (new models of partnership), better value chain infrastructure/logistics
- Promoting sustainable production practices

Horizontal coordination through the formation of farmer groups (association or cooperative)

Horizontal coordination of farmers entails the formation of a group, association or other collaborative structure through which information, inputs, technical and quality assistance, and various other needs may be accessed. As an organized group, small-scale farmers can work together to function such as larger businesses and thus offer many of the advantages of a larger operation. These advantages include:

- improved access to credit, training and business services;
- improved access to technology and equipment through shared resources;
- increased efficiencies and economies of scale through collaborative production and marketing, reduced transaction costs, and bulk purchases of raw materials and contracted services;
- collective knowledge of markets, production standards and customer requirements;
- pooled creativity for developing innovative products and services;
- reduced costs/risks for the development of new products and services;
- improved ability to avoid oversupply and a resulting decline in prices;
- collective efforts to overcome shared obstacles; an improved market position, with increased production capacity, a broader range of produce offerings and a more diversified skill set.

Horizontal linkages are not limited to farmer groups. They can be formed, and are beneficial, at all levels of the supply chain. Small packing house operations in a given setting could, for example, form such a group. Horizontal linkages may emerge because of collaboration among concerned parties (e.g. participating farmers) or may be fostered by an external party (e.g. an NGO).

in Mauritius and the MauriGAP standard

Vertical coordination through contract farming

One vertical coordination option that is suited to the integration of small-scale farmers into horticultural supply chains is contract farming. Well-managed contract farming is an effective way to coordinate and promote production and marketing in agriculture.

Nevertheless, it is essentially an agreement between unequal parties: companies, individual entrepreneurs on the one hand and economically weaker farmers on the other. It is, however, an approach that can contribute to both increased income for farmers and higher profitability for sponsors. When efficiently organized and managed, contract farming reduces risk and uncertainty for both parties as compared to buying and selling crops on the open market.

The prime advantage of a contractual agreement for farmers is that the sponsor will normally undertake to purchase all produce grown, within specified quality and quantity parameters. Contracts can also provide farmers with access to a wide range of managerial, technical and extension services that otherwise may be unobtainable. Farmers can use the contract agreement as collateral to arrange credit with a commercial bank in order to fund inputs. Thus, the main potential advantages for farmers are:

- provision of inputs and production services;
- access to credit;
- introduction of appropriate technology;
- skill transfer;
- guaranteed and fixed pricing structures; and
- access to reliable markets.

A well-organized contract farming scheme can therefore provide the right incentives and forward and backward linkages required for small farmers in developing countries to participate in modern horticultural supply chains successfully.

Models of contract farming

Some of the most widely used contract farming models includes:

- Centralized model or “outgrower scheme”: This model involves a centralized packing house exporter buying from a large number of small farmers.
- Nucleus estate model: This model is similar to that of the centralized model, except for the fact that the company also manages a central estate or plantation.
- Multiparty model: This model involves statutory bodies and private companies jointly participating with farmers.
- Informal model: This model applies to individual entrepreneurs or small companies, which normally make simple, informal production contracts with farmers on a seasonal basis.

Combining vertical and horizontal coordination: contract farming involving farmer groups

Vertical coordination through contract farming and horizontal coordination through the formation of farmer groups often work best together, with farmer groups contracting with companies that supply them with a range of services, within a suitable framework such as an out-grower model. Contract farming involving farmer groups increases access to new market opportunities. When dealing with a purchasing company, the negotiating strength of a farmer group is greater than that of its constituent individual members.

in Mauritius and the MauriGAP standard

Companies prefer working with farmer groups because group liability for credit reduces lending risks, while economies of scale reduce transaction costs. Our Swtich Africa Green project expects to promote and pilot such a scheme.

Generalized model for contract farming involving farmer groups

In order for a company to contract small-scale fruit and vegetable growers in a particular setting, extension agencies, NGOs, development agencies or the company itself should assist growers in forming a group if one does not exist or assist in improving the cohesiveness of existing groups (e.g. by training growers on group forming skills, formally registering the group and providing literacy and numeracy training). Small-scale growers are better placed to deal with exporters, supermarkets and other larger companies when they coordinate among themselves within such a group. A group can better comply with contractual requirements of the company than its individual members, and serves as a convenient organizational unit around which the company can coordinate procurement of produce and provide inputs, credit and technical assistance to the growers.

FOOD SAFETY REGULATORY SYSTEM IN MAURITIUS

Introduction

The present review pertains to food safety of fresh fruits and vegetables marketed by retailers. Processed fresh produce, including fresh-cut/ minimally-processed produce are hereby excluded. The review is presented with an extract from the food regulations and/or the relevant sections of the regulations and a brief expose on what is required and/ or prohibited by law. Food safety of fresh fruits and vegetables is mainly regulated by the Food Act 1998/ Food Regulations 1999 in Mauritius. The Dangerous Drug and Chemical Act and Occupational Health and Safety Act are other regulations that relate to food safety of fresh produce. It is worthy to mention that a revised Food Regulations is under review for promulgation by the local Government.

Law enforcement

The Health Inspectorate, under the aegis of the Ministry of Health and Quality of Life is mandated for enforcement of the laws that govern the Food Act 1998.

Sanitary officers also undertake regular checks to ensure conformity with food safety provisions and the guidelines under the Food Act. Local Authorities also have an important role to play as regard to the issue of licenses and permits for operation of food retail businesses. Food retailers operating in market fairs fall under the jurisdiction of Local Authorities and Health Inspectors are empowered to ensure food safety. The Ministry of Health and Quality of Life, Local Authorities and Municipalities work in conjunction to ensure food safety to consumers. Local Authorities are empowered to ensure a prohibition order and cancellation of permits and licenses to defaulters upon notice by the officers from the Ministry of Health and Quality of Life.

in Mauritius and the MauriGAP standard

Personal Hygiene and Sanitation

As part of the procurements under the Food Act 1998, retailers in the food industry are required to have acquired the food handler's certificate (section 47 of the Food Regulations 1998). This certificate ensures that the person dealing with foodstuffs is healthy and fit for the handling of foodstuffs. The food handler's certificate is issued by the Ministry of Health and Quality of Life, after the registered retailers have followed the courses delivered by the Health Officers of this Ministry and after they have been examined to be deemed fit by Public Medical Practitioners to handle food products.

Every person engaged in the sale, preparation, serving, packing, carriage, and handling or delivery of any food for sale for human consumption shall observe proper and adequate personal hygiene, as laid down in section 48 of the Food Act.

Sanitary requirements of the food transport vehicle and cold for the refrigerated storage of food are specified in sections 55, 56, and 60 of the Food Act. There are also provisions in the regulations to prohibit cross-contamination of the produce by undesirable contaminants. For example a vehicle transporting materials (e.g. construction material/ farm yard manure) that can contaminate food shall not transport food.

People suffering from infectious diseases or who is suffering from diarrhoea, venereal disease, open infected wound, or any inflammatory or communicable infection of the skin are prohibited from handling food. Persons with open infected wound shall be allowed to resume food handling only after obtaining clearance from a Government Medical Practitioner via a Medical Certificate, certifying that the person is deemed fit to handle food. Finally, the storage temperature of highly perishable produce (e.g. fresh strawberries and mushrooms), sale of contaminated food, as well as the keeping of food in insanitary environment are all regulated by the law.

Occupational Health and Safety

The Occupational Health and Safety Act 2005 (OHS Act) make provisions for health and safety of workers in the work environment. Health and safety of workers in a retail environment may have an impact on food safety. Bodily injuries, which occurred at the work place and at home, may lead to contamination of food. Workers are expected (under duties of employees) to take reasonable care for the safety and health of himself and of other persons who may be affected by his acts or omissions at work and to wear or use any protective equipment or clothing provided by the employer in pursuance of the OHS Act at all times, when there is a risk of bodily injury (section 14 (1) (a) and (c) of OHS Act). In case of bodily injuries involving blood, the Food Act makes provisions for such injuries to be sufficiently protected by approved waterproof wound plasters.

Use of chemicals for sanitizing purposes, for example floor and benches/ shelves of retail store/ cold stores, food vehicles, is regulated under OHS Act. When dealing with chemicals the OSH Act specifies that employers shall keep record of Material Safety Data Sheet (MSDS) of all chemicals used on the premises (section 17 (4) (b)). All necessary precautions and health hazards shall be taken or adhered to, as specified in the MSDS of the chemical being used.

in Mauritius and the MauriGAP standard

Maximum pesticide residue level

There is provision in the Food Act for the maximum allowable pesticide residue level in food (section 62 2(d) and tenth schedule). As at 1998, all pesticides listed are mentioned and their maximum allowable levels are detailed for different foods (including fresh produce). As such, produce are expected to be sampled and analysed by the Government Analyst Division or any affiliated and accredited laboratory. However due to certain reasons, this regulation is not enforced in practice.

The Dangerous Drug and Chemical Act 2004 provides the following with respect to safeguards for the public” Part VII, para 23

- (1) Every person who imports, produces, manufactures or sells any commodity for human or animal consumption shall ensure that -
- (a) the commodity marketed or sold by him presents no danger to the health of consumers by reason of toxic residues contained in or on such commodity through the use of pesticides or other dangerous chemicals on crops or otherwise; and
 - (b) the safe interval since the last application of a pesticide on a crop and the harvesting of such crop has been strictly observed.

Food Packaging materials

Part II of the Food Regulations details the requirements for food packages. Packaging materials need to be of food-grade standard. Use of poly-vinyl-chloride packages is regulated by the law. Use of harmful, non-food, and recycled packages are prohibited by sections 15-18 of the Food Act.

Environment Protection (Banning of Plastic Bags) Regulations 2015 prohibit the import, manufacture, sale, or supply of plastic bags, which are designed to carry goods (including food) purchased at points of sale such as wholesale and retail outlets, markets, fairs and hawkers.

Standards pertaining to Food Safety Management System

The above review has focused on the regulatory frameworks. However, there are Mauritius Standard Bureau (MSB) standards (which are voluntary standards) that have been developed and put in place to implement Food Safety Management System, which guarantees food safety to the consumer. While such a system pertains to high-risk foods e.g. fresh milk, there are instances where this can apply to fresh vegetables e.g. fresh edible mushrooms. The ISO/TS 22002-3:2011 specifies requirements and guidelines for the design, implementation, and documentation of prerequisite programmes (PRPs) that maintain a hygienic environment and assist in controlling food safety hazards in the food chain. This standard is applicable to the farming of crops (e.g. cereals, fruits, and vegetables), living farm animals (e.g. cattle, poultry, fish, pigs) and the handling of their products (e.g. milk, eggs).

Moreover, the MS 133 (HACCP) standard has been published to cater for those food and food related industries that wish to embark in food safety standard implementation and eventually achieve certification. HACCP stands for Hazard Analysis and Critical Control Point and it is a systematic, planned approach to controlling food safety hazards. CODEX defines HACCP as: “a system which identifies evaluates & controls hazards, which are significant for food safety.”

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Countries surveyed: Australia (909), Brazil (924), China (536), France (908), Germany (904), Spain (906), Hong Kong (455), India (927), Japan (923), South Africa (910), and the U.K. (937).

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Procurement Guideline

PROCUREMENT GUIDELINE

Introduction

Every company has social, environmental and economic impacts deriving from its business operations. Some of these impacts are directly related to company operations, such as the energy use of an office building, others are indirectly related to the company as they occur up- and downstream in the supply chain.

In fact, the way a company procures products and services from suppliers can largely influence and improve its overall sustainability performance as social, environmental and economic impacts can be reduced.

Objective and scope

This procurement guideline aims to guide procurement processes of our company of fresh fruits and vegetables (FFV) in a more sustainable direction. Although general and specific principles might also be applicable to other products the company procures, this guideline scopes primarily procurement of FFV produce.

How to use and implement this guideline

The guideline highlights a number of important principles that will allow companies to procure in a more sustainable manner. It differentiates between principles to achieve a basic sustainability level and principles to go for an advanced level. Companies might select those principles relevant and applicable in its business context or go for adopting all principles at once. Basically, there are two major options to ensure that procured products will be in line with your procurement principles. Either you rely on existing certification standards and social compliance schemes when buying products or you demand your suppliers to comply with your selection of principles.

Sustainable production or social compliance standards as well as management schemes can provide the necessary information in order to know if purchased products or their suppliers comply to the desired selection of procurement principles. In case there are no suitable standards available, the procuring company can request suppliers to only provide products that meet selected procurement principles. The procuring company might enact a respective passage in supplier contracts, design a suitable prequalification process or just ask suppliers to deliver respective information confirming compliance. In addition, procuring companies should at least keep open the option to audit against the principles at the supplier's production facilities or on farm level.

General principles

Our company only buys products from supplier that comply with all applicable laws and regulations.

Our company aims to avoid exploitation of labour and encourage a respectful approach to the environment.

Our company will preference products that meet high requirements in terms of sustainable purchasing, where the commercial performance is otherwise equal.

Procurement Guideline

Socially responsible production		
Principles	Basic level	Advanced level
No use of forced labour	We only procure products from suppliers where there is no use of forced or compulsory labour as per ILO Convention 29 and 105. All work must be voluntary and workers shall be free to leave work at any time or terminate their employment.	
No child labour	Any forms of exploitation of children are forbidden in any stage of the value chain. Working conditions resembling slavery or harmful to children's health are forbidden. The term "child" refers to any person under the age of 15 (or 14 where the law of the country permits), or under the age for completing compulsory education, or under the minimum age for employment in the country, whichever is greatest.	
No inhumane treatment	There is to be no harsh and inhumane treatment including any sexual harassment, sexual abuse, corporal punishment, mental or physical coercion or verbal abuse of workers related to products we procure.	
Non-Discrimination	Producers of products we procure should be committed to a workforce free of harassment and unlawful discrimination.	
Fair wages	For all products we procure compensation paid to workers shall comply with all applicable wage laws, including those relating to minimum wages, overtime hours and legally mandated benefits.	
Safe and healthy workplace	Occupational safety and health in agriculture, logistics and warehousing is ensured. Workers are provided with a safe and healthy workplace, including, as applicable, safe housing conditions. As a minimum, potable drinking water, adequate sanitation, essential safety equipment (e.g. use of fertilisers) and access to emergency medical care are provided.	Third-party monitoring and reporting on health and safety conditions on a regular basis.
Land use rights	Land rights, including legal title and customary land, of local communities are respected.	Legal use rights to the land are clearly defined and demonstrable (e.g. documented through an ownership agreement, rental agreement, court order, etc.)

Procurement Guideline

Environment-friendly production		
Principles	Basic level	Advanced level
Water use and pollution	Growers take measures to minimize water withdrawal from the environment and prevent water pollution.	Growers have a system in place to measure, improve and report on water use and pollution in place.
Use of chemicals	Growers comply with best practices relating to use of chemicals. Pest and disease management is based on Integrated Pest Management programs that reduce the need for agrochemicals.	Growers have a programme in place to substitute agrochemicals through bio-based products.
Soil management	Growers comply with best practices relating to soil management, taking into consideration soil structure and fertility, and soil erosion. Agrochemical use is minimised to deliver upon good soil conservation practices, whilst being consistent with the need to control invasive species and pests.	Microbiological measuring and improvement programme.
Waste management	Waste is prevented, and/or disposed of in an environmentally sustainable way.	Waste is reused, recycled and recovered.
Energy use and emission to air	We expect that energy is used in the most efficient way possible. Greenhouse gas emission and other emission to air are reduced whenever possible.	We expect that energy comes from renewable sources or energy efficiency is measured and continuously improved.
Post-harvest losses	Our suppliers ensure appropriate harvesting scheduling and storage.	Growers and processors adopt appropriate technology and systems to reduce postharvest losses and food waste. Where post-harvest losses do occur, efforts are made to reduce losses to an acceptable minimum.
Biodiversity	We expect from famers to reduce agro-chemicals	We expect from farmers to eliminate agro-chemicals; promote crop rotation and fallow areas
No sourcing converted from natural forests	Our products are sourced from land that has not been converted from natural forest to other land use.	

Procurement Guideline

Packaging		
Principles	Basic level	Advanced level
Packaging materials	We prefer products which are delivered with minimal or no packaging while complying with hygiene and produce integrity standards	We prefer products with packaging material from renewable and proven sustainable sourcing. If package materials is used, it should be designed in a way that it can be recycled easily.

Local and seasonal sourcing		
Principles	Basic level	Advanced level
Local products	We systematically prefer products from local or regional suppliers over imported products	
Seasonal product	We will systematically procure seasonal fruits and vegetables, whenever this is feasible	

Traceability		
Principles	Basic level	Advanced level
Trace the origin and transparency	We preference such products of which we know their origin.	We prefer to buy products from suppliers that provide detailed information about the product, materials, as well as social and environmental impacts.

Transportation and storage		
Principles	Basic level	Advanced level
Smart transportation	We prefer such products that have been transported in a way that features reduced product miles..	We prefer such products that have been transported in a way that also features efficient fuel consumption, limited vehicle emissions, optimised loads and reversed logistics.
Efficient storage	Suppliers of our products should make sure to store their produce in a way that will reduce food waste.	Suppliers of our products should make sure to store their produce in a way that ensures efficient resource use through monitoring and smart technology.

Marketing Campaign



SUS-AGRI

Marketing campaign (especially for Retailers)

Alexis Figeac, Jan Per Bethge
January 2016

www.scp-centre.org



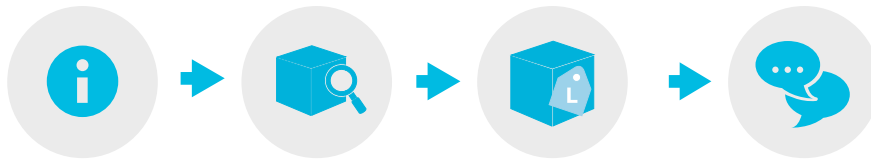
Overarching marketing campaign strategy for MauriGAP FFV



Marketing Campaign

4 main approaches to engage with consumers

1. Explain the product & context
2. Discover the product
3. Label the product
4. Communicate with the consumer



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Explain the Product

Arguments surrounding MauriGAP and its context



MauriGAP FFV are



“home grown”

- local not imported produce
- Foreign currency saving (keep your spending in MRU)
- less transport, less CO₂
- sustains small planter livelihoods

MauriGAP FFV are



“controlled use of agro-chemicals”

- Farmers maintain farm records



“healthy”

- Health of consumers
- Welfare and security of farm-workers
- Sustainable practices



“certified”

- External control and validation



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Marketing Campaign

Discover the Product

Present MauriGAP FFV to consumers



Promote

- PLV/in-store
- presentoir / emplacement spécifique (coin MauriGAP)
- Animation
- Collect feedback: interviews, fiches



Inform

- Flyers, fact sheets, social media

Encourage

- Customers to touch, smell, taste MauriGAP FFV



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Identify the product

Labelling



Identify the product as being MauriGAP-compliant



If using own brands (private labels), reflect look and feel of MauriGAP logos as well as MauriGAP campaign arguments

- Health & Safety ("produit sain")



- Superior produce ("produire mieux")



- Environmental awareness



Differentiation within own brands ...



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Marketing Campaign

Labelling Example A: Local products



- REWE Regional** started in August 2012;
- It products comprise **seasonal fruit and vegetable** from regional farms and sold in the respective regions
 - Depending on the season, the range includes between **10 and 30 products**
 - Products originate from no more than **50 kilometers**

"Carrefour Quality & Origin"

- All products are **locally sourced** from partners cooperated for over 20 years.



- Carrefour BIO** in France favours French organic production:
- 70% of the organic range manufactured by **French suppliers, mainly SMEs.**



Labelling Example B: Ethical label, broader sustainability

Fairglobe, Lidl

- **Lidl** developed special **private brand "Fairglobe"** with Fairtrade certification, aiming at raising public awareness and promoting sustainable products from developing countries



With Pro Planet we want to give our customers a reliable orientation for sustainably produced products.

Pro Planet, REWE Group

- **300 Pro-Planet Products**
- Flagship in the German retailer sector
- Mainstreaming sustainability



Marketing Campaign

A+B in Mauritius: label incorporating MauriGAP

A supermarket's label whether as private or MauriGAP label, would combine the local with the *sustainability* elements



Also it would guarantee that the product labelling is the result of a process



Communication with the consumer

Media by target group



Marketing Campaign

Communication with the consumer

Themes

All target groups



- Home-grown



- Healthy living (& working)
“La sante chez nous”

- FFV = goodness of nature, source of natural vitamins and sugars
- Sante du consommateur
- Sante du sol (respect environment)
- Sante des travailleurs agricoles



- Traceability



- Professionalism



- Environmental awareness



Other tools to understand consumer attitude

Ways to understand consumers’ wants and needs for greener products

Tool	How
Market Survey	Create your own consumer survey to ask your consumers their opinions on sustainable products
Market Research	Take advantage of others’ consumer research on consumer behaviour and sustainable products
Marketing Theory	Theories on selling and marketing sustainable products and what opportunities are available for business. They usually include examples of “how to do it” in practice.
Stakeholder Dialogues	Involve your stakeholders , including customers, community members, suppliers, employees, government, listen to their interest and find out about various perspectives on sustainable products. Stakeholders can be involved via consultations (meetings) or even partnerships.



Marketing Campaign

Mapping communication opportunities

Options to support sales of green products

Technique	Benefits	Example
Choice Editing	<ul style="list-style-type: none"> Increase customer value and confidence Be a market leader: don't get caught by new legislation 	<ul style="list-style-type: none"> Get rid of unsustainable products and offer more sustainable versions (i.e. labels)
Exposure	<ul style="list-style-type: none"> Raise product awareness Increase unplanned consumer purchases Improve customer relationships 	<ul style="list-style-type: none"> Special and noticeable placement in the store Good shelf placement: eye level
Demonstration	<ul style="list-style-type: none"> Add human touch to sales Answer questions and tell more about the product Increase unexpected purchase Reduce harmful product myths 	<ul style="list-style-type: none"> Allow the consumer to experience the product Give recipes Provide accurate use tips and information
Prompts and Packaging Information	<ul style="list-style-type: none"> Draw attention to the product Add valuable easy-to-read information 	<ul style="list-style-type: none"> Use shelf tags Provide signs at point of purchase Show environmental and social impacts on packaging
Employee Training	<ul style="list-style-type: none"> Allows employees to answer customer questions Provide greater understanding among employees about a product's importance and its accurate placement Motivate your workforce 	<ul style="list-style-type: none"> Explain what the product means Allow them to think of new solutions
Website	<ul style="list-style-type: none"> Add more information than you can do in store Increase use by customers for shopping 	<ul style="list-style-type: none"> Add sustainability with other product information Explain the added value in the price sheet
Emotional Advertising	<ul style="list-style-type: none"> Draw an emotional affiliation between you and the consumer Improve consumer relationships Help to explain the added value 	<ul style="list-style-type: none"> Inform consumers of what you are doing and why Show the consumer that they can make a difference
Product Service Systems	<ul style="list-style-type: none"> Open new markets and become a leader in that new market Reach out to customers who need a different alternative Invest in people, rather than materials 	<ul style="list-style-type: none"> Allow leasing and renting of low-use products Expand expensive products to low-income markets through service systems

Enabling sustainable choice

Good practice examples: Enable sustainable choice I

Choice editing

- Lidl aims to change all its bananas to be from Rainforest Alliance Certified™ farms
- DM offers only organic food products and introduced in 2014 its own organic food brand



- SPAR organizes trainees to sensitize customers by setting up food tasting and answering questions concerning responsible shopping

Demonstration and exposure

- REWE Group promotes sustainable products through sustainability week and activities to engage customers in sustainability
- Waitrose the Fairtrade Fortnight with recipes and selection of Fairtrade foods on offer



Marketing Campaign

Corroborating sustainable choice

Good practice examples: Enable sustainable choice II

Website

- **Tesco** publishes supply chain DNA analysis to enable customers to [trace from farm to fork](#)
- **Carrefour** updates its [sustainable activities and stories](#) behind sustainable products on website

Emotional advertising

- **M&S** links consumers with suppliers with [“Meet Your Producer”](#) website
- **Alpro** uses [sustainability report and conferences](#) to make consumers realize the importance of sustainable consumption



Communication: informing/educating the consumer

Options to educate consumers to use products effectively and sustainability impact

Technique	Benefits	Example
Website	<ul style="list-style-type: none"> • Increase customer knowledge of product use at home • Expand customer relationships and increase customer life-cycle value 	<ul style="list-style-type: none"> • Provide guidance and examples on efficient use and sustainable consumption • Show environmental use impact
Packaging information	<ul style="list-style-type: none"> • Customer can bring information home and read while using product • Adds greater total value to customer purchase 	<ul style="list-style-type: none"> • Tips on proper use, such as saving energy, decreasing chemical usage • Create fun and memorable information for children about the environment
Partner with others	<ul style="list-style-type: none"> • Increases employee knowledge base • Increases consumer trust and stakeholder value • Improves relationships with stakeholders, such as suppliers, NGOs and local community 	<ul style="list-style-type: none"> • Partner with NGOs to increase knowledge of use options, through leaflets, in-store displays, and cross advertising • Work with suppliers to improve product use performance • Cooperate with the community on a plan to improve local energy use
Contact consumers post purchase	<ul style="list-style-type: none"> • Expands personal relationship beyond the store • Improves customer loyalty • Encourages repeat purchase 	<ul style="list-style-type: none"> • Contact customers via e-mail, phone, or text-message with tips on proper use • Add information to customer magazines about sustainable product use and cost savings tips



Marketing Campaign

Communication: informing the consumer on health

Good practice examples: Educate consumers on use phase impacts and solutions

Website


- M&S launched [online health diet website](#)
- 1,500 Healthy Eating Assistants in stores to assist consumers' healthy choices.

Packaging information

- M&S has introduced [nutritional 'traffic lights'](#) to food products and extend the use of positive health labels to promote products with beneficial qualities.


Partnership

- M&S joins [project on sustainable diets with Institute of Grocery Distribution \(IGD\)](#), aiming for integrating healthy eating advice with social and environmental sustainability messages.



Post-purchase connection

- Carrefour:** customers could receive healthy [eating suggestions and advice](#) based on the contents of their shopping trolleys, using information gleaned from their Clubcards.



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Communication: informing the consumer on end-of-life (relevant for FFV packaging)

Good practice examples: Educate consumer on end-of-life impact and solutions

Website

- M&S publishes [recycling guideline and fact books](#) to support consumers with better recycling

Packaging

- M&S uses product label to let consumers know which [elements of the pack are recyclable](#) and how easy it is to do this.

In store disposal


- Bharti Retail** cooperated with Unilever to promote [plastic recycling among consumers](#) through in-store displays, leaflets and mailers.

Partnership

- M&S partners with WRAP and cities on [Love Food Hate Waste campaign](#)
- Waitrose supports [websites Recycle Now](#) that enable consumers to identify their nearest recycling center and the recyclable materials.

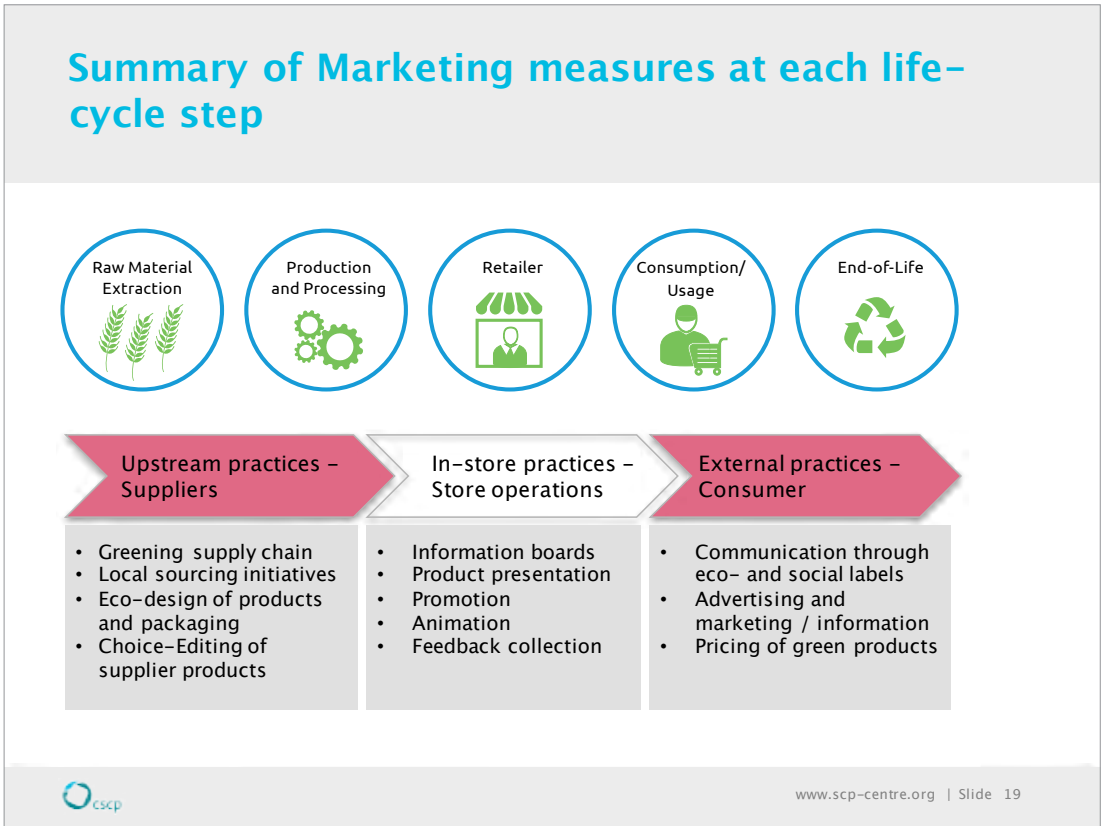
Product to service

- M&S offers [cookery classes](#) for consumers, aiming at reducing household food waste



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Marketing Campaign



Traceability

Farmforce as a technological tool for SSCM optimisation of FFV

Farmforce a tool in the right time for traceability

Imposition of a 10% sampling and analysis of beans and peas entering the European Union from 1st January 2012, placed Kenya vegetable industry market share in the EU on a hanging balance. This was as a result of some beans and peas being found containing some sprays beyond the Maximum Residue levels (MRLs) of not more than 0.02 parts per million. In this milieu Syngenta Foundation for Sustainable Agriculture (SfSA) started offering an innovative web and mobile system, named Farmforce, for managing smallholder farmers producing horticultural crops for export.

"Farmforce is an integrated mobile/ web traceability platform used to manage small scale farmers to enable them access market and adhere to the protocols set for the fresh produce export market ensuring farming risk such as MRL are strictly observed", says Faith Kamenchu, Farmforce Project Manager at the Syngenta Foundation for Sustainable Agriculture.

Farmforce makes it easier for exporters to work with small scale farmers in outgrower schemes. It makes certain that the exporters contracted by overseas chain stores to supply fresh fruits and vegetables are assured of consistent good quality produce, fair transaction costs and most importantly traceability by the smallholders farmers.



syngenta foundation
for sustainable
agriculture

Via this real-time monitoring and tracking system, Farmforce provides a holistic pathway for tracing all activities involved in the growing cycle of horticultural crops and GlobalGAP related information. The app captures data on disease, pest detection, the prescribed chemicals and comparison of inputs used against warehouse stock levels. It also records the maximum dose/hectare, application date, pre-harvest interval (PHI), spray application interval, target pests, yield forecast, environmental hazards, clearance dates for each farmer's block, the specific sprayer and personnel for each operation.

According to Faith, Farmforce facilitates the connection of smallholder farmers to lucrative international markets, giving them an opportunity to earn a stable income. Using the platform it is possible for farmers to meet safety requisites, compliance, social and sustainability standards which many a times lock out these farmers from external markets.

Farmforce has been in operation since May 2013, has been taken up by many companies in Kenya and many more in Africa, Asia and Latin America. They have recently formed a partnership with GlobalGAP and are now a PIP/COLEACP service provider. This relationship increases the reach of the system; reduce the cost of adopting the system for companies in Kenya and the rest of the Africa-Caribbean-Pacific countries. As a result many companies are taking up this innovation which is digitizing and reducing the amount of paper work involved in well organized farming ventures, making traceability very empirical.

"In a day the technical assistants are able to visit fields and capture data for twenty farmers. Let's assume an out grower has more than 50 groups, with more than 70 members growing different fruits and vegetables. Managing their planting, scouting, chemical applications, fertilizer

Traceability

applications, harvesting and financial information on paper is very complex and cumbersome. Farmforce circumvents this by creating an 'all under one roof' data entry and management experience", Faith demonstrated.

This technology is primarily being used by horticultural exporters such as Kenya Horticultural Exporters (KHE). "These large-scale companies invest a lot of money, recruiting small-scale farmers to produce for export and when there is a problem such as contravention of MRLs, they incur a lot of losses, which are channeled down the whole export value chain. Farmforce is the valuable tool for reducing risks by making this process efficient, reliable and transparent" notes Spencer Morley, Farmforce Implementation Manager SFSA.

Companies that have embraced the technology begin by training their agronomists and technical assistant(s) (TAs). The TAs act as the main intermediaries between the exporter and the contracted farmers. This group is sent to the field to register farmers on Farmforce. Farmers' profiles include a photo, names, national identity number, mobile number, village, as well as specific GPS coordinates of the farmer exact locales. The farm acreage and the number of blocks a farmer has are also captured. At a later time the TAs capture planting records, expected harvest time, harvest projections, chemicals used, reason for application, and the pre-harvest intervals among other details.

"When this data is captured through the TA's mobile device, it is then synchronized posted and hosted in the company's (web) online database which is accessible by the company management. The mobile application is used by the TAs and works both online and offline. Data can be captured even in areas without mobile network coverage and when one gets in a network enabled area, they

are able to synchronize the captured information" says Faith.

There is a common problem in the industry of field officers avoiding going to the fields thus giving wrong information and non-existent farmers to show they have been working. With Farmforce there is no room for this as the company management can look on the website and immediately see which TAs have been capturing what data, where, and for which farmers or blocks. With the farmers' profiles, exporters are better placed to manage the smallholders. Scouting work is eased. When unknown disease strikes, the TAs take photo of the affected plants, upload them online and the problem is acted upon promptly by agronomists who can deploy preventive, inoculation or curative measures promptly.

When exporters contract smallholders, they sponsor them for GAP trainings, provide them with inputs and some startup capital which are deducted from the harvest sale. This is an expensive undertaking and the risk involved high. At times unscrupulous farmers may sell part of the harvest to middlemen or side-buy outside the scheme to buffer their yields.

If this happens, exporters can find that they don't meet the projected targets, thus incurring losses or they end up collecting crops which another farmer has grown using

unapproved pesticides. "Since every exporter is in a contract with a certain client who has specified chemicals to be used at specific rates and the harvest to be done at distinct pre-harvest-interval, side-buying flouts this standard. Many a times tracking this with paper is impossible. But by logically and systematically capturing data, Farmforce smartly predicts farmer yields and projections, which allows the exporting companies to identify where farmers may be selling their raw material to brokers or when they are buying from outside sources", reaffirmed Faith.

By simplifying the management of smallholder outgrower schemes the Syngenta Foundation and the Farmforce team hopes to make it easier for exporting companies to work with and expand outgrower schemes. This is of critical importance to the success of the exporting companies and small holder farmers. The team hopes that in the future the companies that effectively use mobile technology to efficiently work with small holder farmers will have a critical competitive advantage over rivals, in Kenya and abroad, who are still using a pen and paper based systems. Kenya is a center of technology innovation and horticultural production. It is hoped that the combination of these two attributes will combine in form of Farmforce and others for the advancement of the Kenya as a whole over other global competitors.





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