FARMING FOR THE FUTURE

M&S
EST. 1884

Annual Report

November 2017

FARMING FOR THE FUTURE

M&S

Farming for the Future

Background

Founded in 1884, M&S has grown from a single market stall to an international, multi-channel retailer. We sell high quality, great value products to 32 million customers through our 914 UK stores and our e-commerce platform.

Our business is built upon strong values of Innovation, Inspiration, Integrity and In Touch. These values have been at the heart of how we do business since starting out as a Penny Bazaar at Leeds Kirkgate Market in 1884.

How do we approach Farming for the Future?

Our core approach is focused on the 4Es:

Efficiency – because farmers and growers that operate at a high level of technical efficiency will be more profitable, use fewer inputs for the same or higher levels of output, and will be more carbon efficient;

Environment – because farmers and growers need to minimise their impact on the environment in terms of their use of soil, water, pesticides and energy and work to enhance biodiversity through appropriate environmental management;

Ethical practice – because farmers and growers need to act ethically in the way that they run their businesses, treat their employees and neighbours and look after any animals in their care, ensuring high standards of welfare at all times;

Education – because there are not enough young people coming into the agriculture industry and so we need to play our part in encouraging more people to consider it as a career option and to help develop those already in the industry so that they can become the leaders of the future.

Plan A 2025

Plan A

Ten years ago, we launched Plan A. We made 100 commitments to tackle five big issues – climate change, waste, resources, fair partnerships and health. These issues are still as relevant as ever.

In 2017, we've launched a new sustainability plan – Plan A 2025. The eco and ethical programme is an ambitious, customer-focused plan that builds on the success of the first 10 years of Plan A. Plan A 2025 strengthens our commitment to address these issues with 100 bold new targets. Crucially, it forces us to address questions to which we don't yet have answers, but must address if we are to become a truly sustainable retailer.

The 3 Pillars of Plan A 2025

Nourishing our wellbeing

We believe that taking care of ourselves is the first step to helping the people around us.

Our goal is to help 10 million people live happier, healthier lives.

Transforming lives and communities

We believe we can achieve more together than we can on our own.

Our goal is to help transform 1000 communities.

Caring for the planet we all share

We believe that we should leave the planet better than we found it.

Our goal is to become a zero waste business.

How do our new Plan A commitments impact on our agricultural sourcing?

Some of the biggest sustainability challenges around food are focused around primary production. Building on our long-standing relationships with farmers and growers, since 2010 we've developed our 'Farming for the Future' programme to drive sustainability into our food raw material sourcing.

Over the last seven years, our Farming for the Future approach has evolved, and Plan A 2025 sees further development of our commitments in this area. Specifically, the main commitments we now have that impact on our food raw material sourcing are:

- **From 2018**, we'll report on our use of animal welfare and environmental outcome-indicators for fresh meat, farmed fish, poultry, fresh milk and laying hens. We'll use this data to shape future production standards and drive a continual improvement culture across our farm supply base. (This is a development of our historic Farming for the Future commitment, reported on later in this document).
- **By 2019**, in collaboration with our suppliers and other partners, we will carry out and publish a detailed review of the potential for adopting restorative/regenerative agricultural practices aimed at improving soil organic matter, sequestering carbon and reducing the dependency on artificial inputs within our Food supply base. We'll then provide an annual update on our actions to implement.
- **By 2022**, all of our strategic Food suppliers will be required to have implemented a ten-year strategic climate mitigation and adaptation plan.
- **By 2025**, the 50 key raw materials used for M&S products will come from sources verified as respecting the integrity of ecosystems, the welfare of animals and the wellbeing of people and communities. This will cover over 80% of M&S raw material usage by volume.
- **By 2025**, we want all edible surplus food from M&S stores, key franchises and direct Foods suppliers worldwide to be diverted for human consumption and we'll reduce net food waste in UK stores by 20% compared to 2013/14 baseline.
- **By 2030**, in line with climate science, we'll reduce our indirect greenhouse gas emissions from upstream and downstream sources by at least 13.3 million tonnes.

Whilst not all of these commitments are solely related to agricultural sourcing, in many cases achievement of the commitment may involve significant changes to our sourcing approach or to the way that food raw materials are produced. We do not yet have all the answers, and the solutions will be far-ranging due to the diverse nature of primary production around the globe, but through working together with our suppliers, farmers and growers, we are confident that we can find solutions to the challenges we face. In future years, we will report on progress on these broader commitments.

What has been our focus in the last twelve months?

Livestock

Before Plan A 2025 was launched, we were working towards achieving the commitment outlined below. This has now been absorbed into our new Plan A 2025 commitments.

Previous Plan A commitment:

"Working with our partners, by April 2017 we will publish improved animal welfare and sustainability outcome measure standards for key M&S farmed raw materials including fresh meat, farmed fish, poultry, liquid milk and eggs. Once completed, from 2018, we will publish our year-on-year performance against these outcome measure standards."

The 2016/17 period has seen us focused on developing these outcome measure standards for our key livestock farmed raw materials, which are outlined below. In line with our revised ongoing commitment, we will publish progress against our targets on an annual basis moving forward.

Why use outcome measures?

Traditionally, 'input' measures have been used to inform how farmers should manage their enterprises, for example through the type of feed given or the size of housing space, etc. Although these measures are important in managing farms, outcome measures are now considered more useful, as they measure the full effect of a farming system on key sustainability areas, including farm animal welfare. This way, they provide an objective tool to measure sustainability performance, regardless of the production system, breed, climate, and so on. The data can be used to benchmark across farming operations, locate best practice and identify areas that can be improved within supply chains. This information provides valuable feedback for farmers to improve the sustainability and profitability of their farms.

How do the results you collect impact on producers?

Most farms and sectors have areas where improvement can be made. Outcome measures can highlight these opportunities and provide a measure of progress where solutions are put in place.

This approach is about providing robust information about what's happening on farm, not about telling farmers how they should farm. Unlike input-based systems, outcome measures allow farmers to develop their own solutions and innovations that best suit their farming system. This flexibility and creativity is crucial for tackling some of the long-standing challenges to sustainable food production.

Looking to the future, why are welfare outcome measures an important part of creating sustainable supply chains?

We define sustainable supply chains as those that are environmentally, economically and ethically – for people and animals – sound. To work towards building farming systems that meet these principles, we must know how they perform across all these criteria.

Sustainability outcome measures include environmental (e.g. water and energy consumption per kilogram liveweight produced), ethical (e.g. community and staff wellbeing) and economic measures (i.e. profitability).

Our approach – developing Farming for the Future Outcome Measures

The Farming for The Future Outcome Measure Programme covers all aspects of sustainability, including animal and people welfare, the environment and efficiency of farming. Animal welfare and environmental outcome measures have been developed for key species within the Farming for The Future (FFTF) Programme. The environmental outcome measures are adapted from the Planetary Boundaries framework (Rockström et al. 2009)[1].

Animal welfare and environmental outcome measures incorporate generic categories common to all livestock species, however measures within these categories are species-specific as outlined in Tables 1-6.

Published measures are those that have been agreed with suppliers and are already collected or in progress for collection for fresh, farmed raw materials. Collection for ingredient supply chains is currently under development. 'Sustainability' measures address animal welfare and environmental metrics currently. People welfare will be considered in the future.

At present, some outcome measures are not validated or practical to collect and 'input' measures are used in the interim to provide information on these areas. As new methods of collection are developed, the published list of measures will be updated accordingly.

1. Rockström, J., W. Steffen, K. Noone, Å. Persson, F. S. Chapin, III, E. Lambin, T. M. Lenton, M. Scheffer, C. Folke, H. Schellnhuber, B. Nykvist, C. A. De Wit, T. Hughes, S. van der Leeuw, H. Rodhe, S. Sörlin, P. K. Snyder, R. Costanza, U. Svedin, M. Falkenmark, L. Karlberg, R. W. Corell, V. J. Fabry, J. Hansen, B. Walker, D. Liverman, K. Richardson, P. Crutzen, and J. Foley. 2009. Planetary boundaries:exploring the safe operating space for humanity. Ecology and Society 14(2): 32. [online] URL: http://www.ecologyandsociety.org/vol14/iss2/art32/

1. Chicken

Table 1. Sustainability outcome measures published for chicken. Measures are recorded on all flocks within the M&S supply. Welfare outcome measures are captured at the time of depopulation and reported monthly. Environmental measures are collected annually. Where environmental 'outcome' measures are not currently available or practical to collect, 'input' measures are used in the interim (greyed measures).

	Category	Sustainability Measure
Welfare	Liveability	Percent mortality, including culls (total and first week) Percent dead on arrival
	Disease	Percent PMI rejects / condemnations Antimicrobial use by type, dose & treatment case (and if treated in first 7 days)
	Injury	Percent flock with contact dermatitis (footpad dermatitis) Percent of animals with leg and wing breaks and bruising
	Mobility	Percent of animals with leg and wing breaks and bruising
	Behaviour	Maximum stocking density of flock Presence / absence of enrichment provision (natural light, bales, platforms and pecking objects)
Environment	Climate Change	Percent total energy use from renewable source
	Land System Change	Proportion of diet in competition with human diets (non-forage based) Proportion of diet components from certified sustainable sources (e.g. soy)
	Freshwater Use	Percent total water use from renewable/recycled water use (non-mains)
	Biodiversity	Percent of total area not in production, set aside and managed for wildlife, or protected (and condition, if known) Percent total land (Ha) that is protected (inc SSSI, SPA, SAC, ELS/HLS/etc) and condition (if known)
	N and P Flows	Proportion manure handled under safe management and storage
	Chemical Pollution	Percent total waste routinely recycled

2. Laying hens

Table 2. Sustainability outcome measures published for laying hens. Measures are recorded on all flocks within the M&S fresh egg supply. Welfare outcome measures are captured at the time of depopulation and reported quarterly. Environmental measures are collected annually. Where environmental 'outcome' measures are not currently available or practical to collect, 'input' measures are used in the interim (greyed measures).

	Category	Sustainability Measure
Welfare	Liveability	Percent mortality (inc. culls) on farm during rear (inc. first week) and lay
		Flock evenness in rear
		Percent mortality during transport
	Disease	Percent PMI rejects / condemnations
		Antimicrobial use by type, dose & treatment case (and if treated in first 7 days)
	Injury	Average flock score for feather cover
		Percent flock with keel bone break
		Percent of animals with leg and wing breaks and bruising
	Mobility	*Not applicable for laying hens*
	Behaviour	Maximum stocking density of flock
		Beak trimmed flock (Y/N)
		Presence / absence of enrichment provision (natural light, perches, range cover)
Environment	Climate Change	Percent total energy use from renewable source
	Land System Change	Proportion of diet in competition with human diets (non-forage based)
		Proportion of diet components from certified sustainable sources (e.g. soy)
	Freshwater Use	Percent total water use from renewable/recycled water use (non-mains)
	Biodiversity	Percent of total area not in production, set aside and managed for wildlife, or protected (and condition, if known)
		Percent total land (Ha) that is protected (inc SSSI, SPA, SAC, ELS/HLS/etc) and condition (if known)
	N and P Flows	Proportion manure handled under safe management and storage
	Chemical Pollution	Percent total waste routinely recycled

3. Turkeys

Table 3. Sustainability outcome measures published for turkeys. Measures are recorded on all flocks within the M&S fresh supply. Welfare outcome measures are captured at the time of depopulation and reported monthly. Environmental measures are collected annually. Where environmental 'outcome' measures are not currently available or practical to collect, 'input' measures are used in the interim (greyed measures).

	Category	Sustainability Measure
Welfare	Liveability	Percent mortality, including culls (total and first week)
		Percent mortality during transport
	Disease	Percent PMI rejects / condemnations
		Antimicrobial use by type, dose & treatment case (and if treated in first 7 days)
	Injury	Percent flock with contact dermatitis (footpad dermatitis)
		Percent of animals with leg and wing breaks and bruising
	Mobility	Percent flock culled for leg abnormalities
	Behaviour	Maximum stocking density of flock
		Presence / absence of enrichment provision (natural light, bales, platforms and pecking objects)
Environment	Climate Change	Percent total energy use from renewable source
	Land System Change	Proportion of diet in competition with human diets (non-forage based)
		Proportion of diet components from certified sustainable sources (e.g. soy)
	Freshwater Use	Percent total water use from renewable/recycled water use (non-mains)
	Biodiversity	Percent of total area not in production, set aside and managed for wildlife, or protected (and condition, if known)
		Percent total land (Ha) that is protected (inc SSSI, SPA, SAC, ELS/HLS/etc) and condition (if known)
	N and P Flows	Proportion manure handled under safe management and storage
	Chemical Pollution	Percent total waste routinely recycled

4. Pigs

Table 4. Sustainability outcome measures published for pigs. Measures are recorded on all farm groups within the M&S fresh supply. Welfare outcome measures are captured at the time of depopulation and reported quarterly. Environmental measures are collected annually. Where environmental 'outcome' measures are not currently available or practical to collect, 'input' measures are used in the interim (greyed measures).

	Category	Sustainability Measure
Welfare	Liveability	Percent mortality on farm
		Percent mortality during transport
	Disease	Percent PMI rejects / condemnations
		Percent skin conditions
		Percent total pleurisy
		Antimicrobial use by type, dose & treatment case
	Injury	Percent fight and bite wounds
		Percent tail bites
	Mobility	Percent lameness (recorded at slaughter)
	Behaviour	Maximum stocking density of group during finishing
		Presence / absence of enrichment provision (manipulable material)
Environment	Climate Change	Percent total energy use from renewable source
	Land System Change	Proportion of diet in competition with human diets (non-forage based)
		Proportion of diet components from certified sustainable sources (e.g. soy)
	Freshwater Use	Percent total water use from renewable/recycled water use (non-mains)
	Biodiversity	Percent of total area not in production, set aside and managed for wildlife, or protected (and condition, if known)
		Percent total land (Ha) that is protected (inc SSSI, SPA, SAC, ELS/HLS/etc) and condition (if known)
	N and P Flows	Proportion manure handled under safe management and storage
	Chemical Pollution	Percent total waste routinely recycled

5. Dairy

Table 5. Sustainability outcome measures published for dairy. Measures are recorded on all herds within the M&S fresh supply. Welfare outcome measures are captured annually through an independent veterinary welfare assessment. Environmental measures are collected annually. Where environmental 'outcome' measures are not currently available or practical to collect, 'input' measures are used in the interim (greyed measures).

	Category	Sustainability Measure
Welfare	Liveability	Percent adult cow and heifer mortality
	Disease	Antimicrobial use by type, dose & treatment case
		Percent cows treated for mastitis
	Injury	Percent cows with overgrown claws
		Percent cows showing comfort indicators (swellings or abrasions)
	Mobility	Percent herd lameness (mobility score 3 or above)
	Behaviour	Maximum herd stocking density when housed
		Presence / absence of enrichment provision (loafing area, cow brushes)
Environment	Climate Change	Percent (%) total energy use from renewable source
	Land System Change	Proportion (%) of diet in competition with human diets (non-forage based)
		Proportion (%) of diet components from certified sustainable sources (e.g. soy)
	Freshwater Use	Percent (%) total water use from renewable/recycled water use (non-mains)
	Biodiversity	Percent of total area not in production, set aside and managed for wildlife, or protected (and condition, if known)
		Percent total land (Ha) that is protected (inc SSSI, SPA, SAC, ELS/HLS/etc) and condition (if known)
	N and P Flows	Presence / absence of soil testing programme (annually / 2 years / 5 years / none)
		Proportion manure handled under safe management and storage
	Chemical Pollution	Percent total waste routinely recycled

6. Beef and Lamb

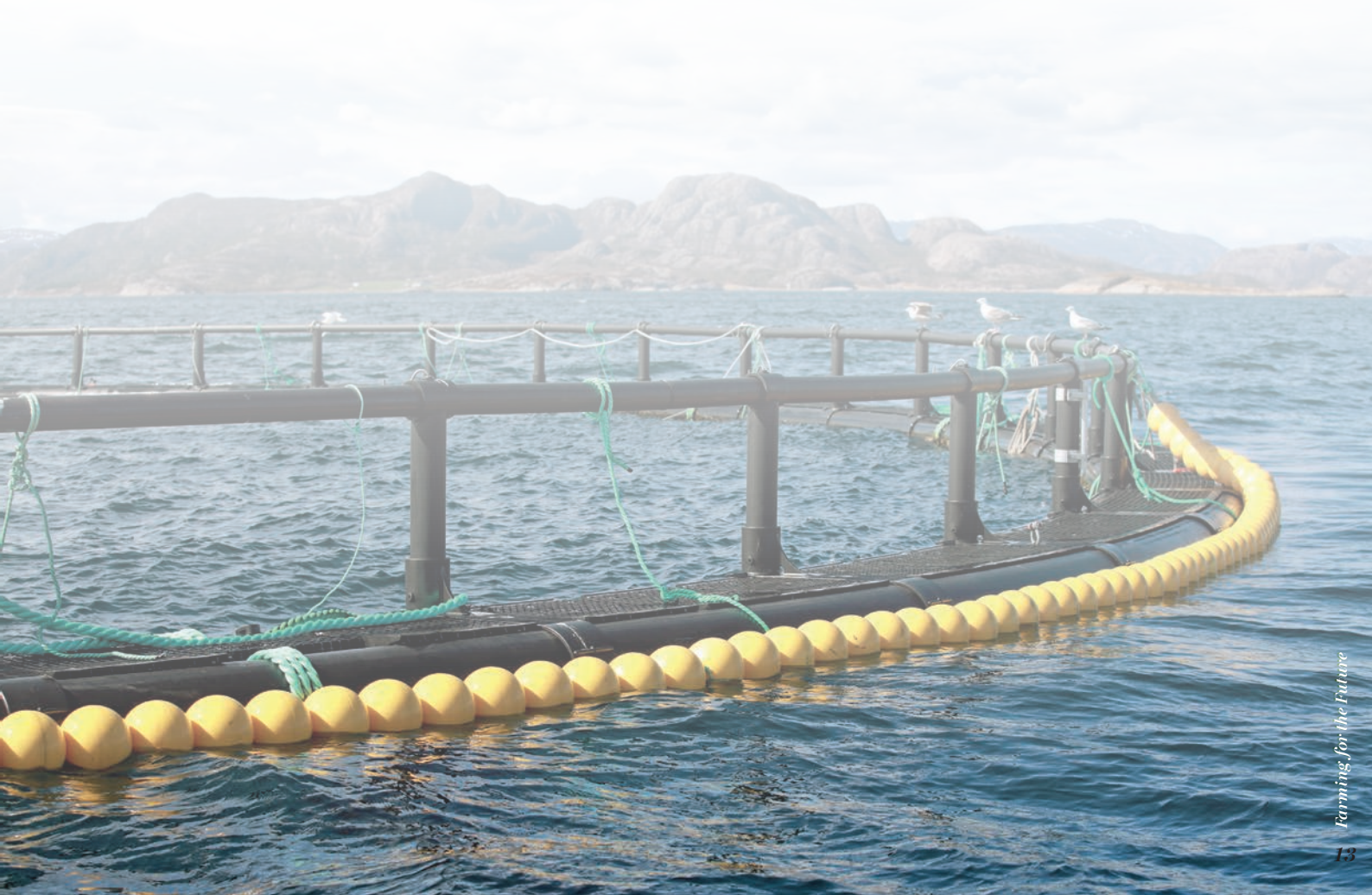
Table 6. Sustainability outcome measures published for beef and lamb. Measures are recorded on all herds within the M&S fresh supply. Welfare outcome measures are captured on all animals at slaughter and processing. Environmental measures are collected annually. Where environmental 'outcome' measures are not currently available or practical to collect, 'input' measures are used in the interim (greyed measures).

	Category	Sustainability Measure
Welfare	Liveability	*Not available currently*
	Disease	Percent cattle with part and whole condemnations
		Percent cattle with liver fluke infection (active and historic)
		Percent cattle with lung conditions (pleurisy and pneumonia)
	Injury	Percent cattle with injuries (bruises, swellings, fractures, lesions)
	Mobility	*Not available currently*
	Behaviour	*Not available currently*
Environment	Climate Change	Percent (%) total energy use from renewable source
	Land System Change	Proportion (%) of diet in competition with human diets (non-forage based)
		Proportion (%) of diet components from certified sustainable sources (e.g. soy)
	Freshwater Use	Percent (%) total water use from renewable/recycled water use (non-mains)
	Biodiversity	Percent of total area not in production, set aside and managed for wildlife, or protected (and condition, if known)
		Percent total land (Ha) that is protected (inc SSSI, SPA, SAC, ELS/HLS/etc) and condition (if known)
	N and P Flows	Presence / absence of soil testing programme (annually / 2 years / 5 years / none)
		Proportion manure handled under safe management and storage
	Chemical Pollution	Percent total waste routinely recycled

7. Salmon, Trout and Seabass/bream

Table 7. Sustainability outcome measures published for finfish – Salmon, Trout, Seabass/bream. Measures are recorded on all harvests within the M&S fresh supply. Welfare outcome measures are captured at the time of depopulation and reported monthly. Environmental measures are collected annually. Where environmental 'outcome' measures are not currently available or practical to collect, 'input' measures are used in the interim (greyed measures).

	Category	Sustainability Measure
Welfare	Liveability	Percent total mortality (4-week post transfer) and at end of production stage
		Percent mortality during transport
	Disease	Percent of fish with fin and skin and gill condition
		Total number of treatments (medicinal, non-medicinal, biological) per cage
	Injury	Percent of fish eye and snout damage
		Percent of fish with deformities
	Mobility	*Not available currently*
	Behaviour	Total disturbances / crowding incidence during production
		Maximum stocking density in cage/ smolt tank
Environment	Climate Change	Percent (%) total energy use from renewable source
	Land System Change	Proportion (%) of diet in competition with human diets (non-forage based)
		Proportion (%) of diet components from certified sustainable sources (e.g. fish oil)
	Freshwater Use	*Not applicable*
	Biodiversity	Measurement of benthic fauna presence on seabed at peak biomass (18-24m)
	N and P Flows	*Not available currently*
	Chemical Pollution	Percent total waste routinely recycled



8. Shrimp

Table 8. Sustainability outcome measures published for Shrimp. Measures are recorded on all harvests within the M&S fresh supply. Welfare outcome measures are captured at the time of depopulation and reported monthly. Environmental measures are collected annually. Where environmental 'outcome' measures are not currently available or practical to collect, 'input' measures are used in the interim (greyed measures).

	Category	Sustainability Measure
Welfare	Liveability	Percent total mortality at end of production stage
		Presence of emergency harvest
	Disease	Percent presence of body marks indicative of disease
		Percent presence of markings on gills indicative of disease
		Total number of treatments (medicinal, non-medicinal, biological) per cage
	Injury	*Not available currently*
	Mobility	*Not available currently*
	Behaviour	Total disturbances / crowding incidence during production
		Maximum stocking density in cage/ smolt tank
Environment	Climate Change	Percent (%) total energy use from renewable source
	Land System Change	Proportion (%) of diet in competition with human diets (non-forage based)
		Proportion (%) of diet components from certified sustainable sources (e.g. fish oil)
	Freshwater Use	*Not applicable*
	Biodiversity	*Not available currently*
	N and P Flows	*Not available currently*
	Chemical Pollution	Percent total waste routinely recycled

Progress against plan

The tables below outlines the scope of the Farming for the Future outcome measure programme in the livestock sectors and the status of each strand of activity. We have taken a prioritised approach to this programme to maximise the benefits achieved and so, at this stage, some of the lower volume raw material species are not included in the programme, including geese, quail, other dairy species (goat, sheep or buffalo milk), game species (venison, rabbit, pheasant, partridge), haddock and sole aquaculture species.

✓ : complete, ● : in progress.

Species

Welfare OM	Developed by Apr 2017	Published by Apr 2017	Measured by Apr 2017	Target set by Apr 2018	Reported by Apr 2018	Status Comment
Chicken	✓	✓	✓	✓	✓	On target - Internal index reporting under review for poultry species in preparation for external reporting.
Laying hens	✓	✓	✓	✓	✓	
Turkey	✓	✓	✓	✓	✓	
Duck	✓	●	●	●	●	On target - Duck was not included in original commitment scope.
Pigs	✓	✓	✓	✓	✓	On target - Internal index reporting under review.
Dairy (liquid milk)	✓	✓	✓	✓	✓	
Beef	✓	✓	✓	●	●	On target - Reported data currently under-review for target-setting and internal index reporting.
Lamb	✓	✓	✓	●	●	
Salmon	✓	●	●	●	●	Outwith target - Outcome measures for aquaculture have been developed. Publication is postponed until consultation with suppliers is complete and data is captured to ensure consistency of communication to public.
Trout	✓	●	●	●	●	
Seabass/ bream	✓	●	●	●	●	
Shrimp	✓	●	●	●	●	

Species

Environmental OM	Developed by Apr 2017	Published by Apr 2017	Measured by Apr 2018	Target set by Apr 2019	Reported by Apr 2019	Status Comment
Chicken	✓	✓	✓	●	●	On target – Data capture in development for 2018.
Laying hens	✓	✓	✓	●	●	
Turkey	✓	✓	✓	●	●	
Duck	✓	●	●	●	●	On target - Duck was not included in original commitment scope.
Pigs	✓	✓	✓	●	●	On target – Data capture in development for 2018.
Dairy (liquid milk)	✓	✓	✓	●	●	
Beef	✓	✓	✓	●	●	
Lamb	✓	✓	✓	●	●	
Salmon	✓	●	●	●	●	Outwith target - Outcome measures for aquaculture have been developed. Publication is postponed until consultation with suppliers is complete and data is captured to ensure consistency of communication to public.
Trout	✓	●	●	●	●	
Seabass/bream	✓	●	●	●	●	
Shrimp	✓	●	●	●	●	

Capacity for outcome measure collection and species prioritisation is guided by the following criteria:

1. Availability of known, validated and practical outcome measures for collection
2. Supply chain structure (integrated supply with dedicated farms versus extensive supply with disperse farm base) and ease of supplier engagement (UK, global)
3. Identification of a species as a high priority, where supply chain understanding through OM data reduces risk (e.g. through transparent NGO communication)

Taking these criteria into account, species roll-out of the FFTF programme was prioritised as shown below. The commitment was expanded to include Duck Δ as a poultry species, due to the increasing welfare focus on this species.

✓ : high, ● : low.

	Species Prioritisation (high to low)	Outcome measures known	Measures routinely collected	Integrated UK supply	High priority species
Terrestrial	Chicken	✓	✓	✓	✓
	Laying hens	✓	✓	✓	✓
	Turkey	✓	✓	✓	✓
	Pigs	✓	✓	✓	✓
	Dairy (liquid milk)	✓	✓	✓	✓
	Beef	●	●	✓	✓
	Lamb	●	●	✓	✓
	Duck	✓	●	✓	✓
Farmed Fish	Salmon	✓	✓	✓	✓
	Trout	●	●	●	●
	Seabass/bream	●	●	●	●
	Shrimp	●	●	●	●

Achievements to date

Fresh meat, poultry, liquid milk and egg

All terrestrial species (chicken, laying hens, turkey, pigs, dairy, beef, lamb) included within our original Plan A Commitment were at (and beyond) target for April 2017. The list of measures have been prepared for publication and data is under collection for all species 'fresh' category supply chains. Roll-out to ingredient supply is also already in place for beef and lamb supply chains (covering all UK/ROI – sourced M&S products for these species). Ingredient data capture is currently being rolled-out for chicken and pork supply chains.

Poultry species (in particular chicken) are prioritised due to the reasons outlined in Table 2. For chicken, the Programme is ahead of commitment, having established target levels for all outcome measures and methods for public reporting of year-on-year welfare performance. Similar target levels and communication approach is in development for all terrestrial species and external publication of sustainability performance will take place ahead of commitment timeline (Apr 2018), in the summer of 2017. The commitment was expanded to include Duck as a poultry species due to increasing welfare focus on this species.

Farmed fish

Farmed fish currently covers salmon, trout, seabass/bream and shrimp. These species have been targeted for early development in the programme due to the higher volume of raw material from these supply chains over other farmed fish species. Outcome measures use in the majority of farmed fish supply chains (excluding salmon) is under developed in comparison to terrestrial livestock. As a result, the process requires considered supply chain engagement to ensure ongoing cooperation and meaningful use of data going forwards, particularly where supply chains are primarily outside the UK.

Outcome measures have been developed for salmon, trout, seabass/bream and shrimp and are currently under consultation with supply. Data is already under longerm collection for the salmon supply. It is preferable for consumer and NGO buy-in, to publish outcome measures for all aquaculture species at the same time, when data capture for all species is fully established, in order to ensure consistency and clarity of external communication.

Once the FFTF outcome measures approach is established for the major supply chains - salmon, trout, seabass/bream and shrimp - it will be rolled-out to further species of highest priority.

Timeline for Outcome Measure Development

We have made a good start with the development of the outcome measure programme, but there remains much to do. The table below 2017 / 2018 and 2018 / 2019 period. Annual quarters are Q1: Apr – Jun, Q2: Jul – Sep, Q3: Oct – Dec, Q4: Jan – Mar. Greyed cells are species that are not included within the commitment.

✓ : timeline confirmed, ● : highly dependent on supply engagement, date cannot be accurately confirmed.

		2017 / 2018				2018 / 2019			
Key activity	**Species**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
1. Publication of outcome measures for remaining species within Commitment	Duck	✓							
	Salmon	✓	✓						
	Trout	✓	✓						
	Seabass/bream		✓	✓					
	Shrimp		✓	✓					
2. Development of 2020 targets for key measures	All species	✓							
3. Performance reporting of key measures	Fresh meat		✓				✓		
	Poultry		✓				✓		
	Eggs		✓				✓		
	Dairy		✓				✓		
	Farmed fish				✓		✓		
4. Capture of outcome measure data for ingredient supply chains	Fresh meat - pigs		●						
	Poultry		●						
	Eggs				●		●	●	●
	Dairy						●	●	●
	Farmed fish						●	●	●
5. Capture of environmental outcome measure data	All species			●	●	●	●	●	●
6. Capture of automated outcome data	Chicken only			●	●	●	●	●	●
7. Outcome measure data and target level review	All species					✓			
8. Incorporation of wider species in FFFT Programme	Poultry - Geese / Quail								
	Dairy - Goat / Sheep								
	Dairy - Buffalo								
	Game - Venison / Rabbit								
	Game - Pheasant / Partridge								
	Fish - Halibut / Turbot								
	Fish - Haddock / Sole								
	Fish - Pangasius								

Case Study

Collaborative approach to welfare research in the M&S poultry supply chain

M&S is working with our supply base and leading welfare academics at Wageningen University to further develop several key areas that are critical to the health and welfare of poultry in commercial farming systems.

In livestock production, it is common for more than one standard of farming to exist for different product categories (fresh and ingredient), with fresh products frequently reared to a higher welfare standard than ingredient.

In recognition of this, in recent years, M&S has focused on moving towards a single production standard that covers all product types. Where this is not currently possible, we have sought to align our specifications across fresh and ingredient poultry as closely as possible in order to raise the welfare standards across the whole supply.

All our M&S chicken is produced on known farms to Select Farm standards that have been developed in collaboration with suppliers, industry experts and NGOs. These standards cover key criteria such as traceability and integrity, animal health and welfare, medicines and biosecurity, feed and water, vermin control, facilities for housing and shelter, transport and slaughter, environmental protection and worker safety and welfare.

In addition, our fresh chicken supply operates to higher welfare requirements than industry standard, including lower stocking densities of 30 kg/m2 (where thinning is permitted) and 34 kg/m2 (where thinning not permitted), as well as higher requirements for environmental enrichment provision. Whilst our ingredient supply still operates at a higher stocking density of 38 kg/m2, we have been collaborating with our ingredient supply chain and academics at Wageningen University to improve the welfare, environmental and food quality impact of this supply. This work has included participation in the following projects:

1. **Trialling effective environmental enrichment** – a series of studies have been undertaken to explore the preference and behaviour of broilers for different types of enrichment design in respect to improvement of welfare and practical application in indoor broiler production.

2. **Development of a sustainability model for on-farm use in ingredient supply** – this approach further built on our use of outcome measures in supply to create a sustainability index covering the ethical (poultry and people), environment and economic impacts of poultry production that can be used on farm and in the supply chain, to further understand the key challenges and encourage best practice.

3. **Studying potential influencing factors on Campylobacter** – a number of trials have been carried out to further understand potential contributing factors, and mechanisms to reduce, the impact of Campylobacter contamination on farm and at slaughter.

Produce

The range of sustainability challenges faced across agriculture and horticulture is vast and there is not a single approach that will help to address challenges in different territories and production sectors.

Whereas in the livestock sector we often have less direct farm contact with producers, in the fresh produce sector, we tend to have close direct contact with growers throughout the year and so our activity is driven in a very different way - through specific projects that individual growers are undertaking, with best practice being shared between growers within supply groups or through ongoing dialogue.

As such, we continue to drive a collaborative approach to the key sustainability challenges – soils, water, pesticides, ethical labour, energy – and undertake specific projects with individual growers, with the results being shared across the wider supply base. We also continue to explore 'big data' and how it can help with crop risk and reduce uncertainty.

In the following case studies, we highlight just some of the activity that is being undertaken in our produce supply base:

Case Study

North Morocco: Leading the way in ethical fruit production

M&S fruit supplier, Total Worldfresh, have been working closely with one of their Moroccan based blueberry producers to help improve the conditions of employees, with a particular focus on improving the lives of female workers. Rupert Carter, Ethical & Sustainability Director explains more.

"African Blue is one of our blueberry producers based in Morocco, managing 250 hectares of land, across a number of sites, located around the Moulay Bousselham region of North Morocco. As well as African Blue, there are a number of other large soft fruit growers in the area, all making the most of the great climatic conditions due to the regions coastal location and nearby seawater lake.

"In 2011, after having monitored the region for some years, Oxfam published a report highlighting that more needed to be done to support local workers' rights and reduce the levels of inequality faced by the largely female fruit-picking work force.

"In response to the reports findings, Total Worldfresh has been working closely with African Blue to ensure that they are at the forefront of the ethical treatment of workers and that they go the extra mile to improve the quality of life for their employees.

"Working in conjunction with M&S, in 2014 we were able to fund a series of communication training programmes across African Blue's farms, which helped explain to workers their rights, ensured that employees fully understood the concept of ethical food production and encouraged better dialogue between pickers, their supervisors and management.

"We also encouraged employees to form workers committees and, in 2015, the first elections for these committees took place, which was a great forward step.

"Traditionally, efficient pay monitoring and ensuring that workers are signed up for the Moroccan equivalent of UK National Insurance has always been 'sporadic' amongst fruit growers in North Morocco. This situation is made worse by the fact that many workers, especially women, don't have ID cards and therefore don't 'exist' on government records. African Blue is leading the way to resolve these issues with a new, dedicated HR department now in place to oversee pay, ID applications and monitor staff welfare.

"Traditionally, women have borne the brunt of unethical treatment and inequality in North Morocco, but by ensuring that female employees have ID cards and access to fair and equal pay, we are helping to redress this situation. By having ID cards, women can then be registered for Moroccan National Insurance, enabling them to access health care and maternity support.

"African Blue has been positively promoting more women into key positions within the company, adding to existing female management roles, including farm manager. We are also looking to roll out anti-harassment training programmes next year, and support improved grievance procedures.

"There is still much work to be done, but we are continuing to support our Moroccan workers to ensure that African Blue continue to set a leading example in the soft fruit sector when it comes to ethical treatment of staff."

Case Study

Sustainable soil management

C's Growers Ltd is a family run business comprising of more than 20 growers in the UK and Spain, producing a range of vegetable and salad crops, some of which are supplied to M&S.

As a family-owned enterprise, one of C's business objectives is to ensure that the quality of the soil on their farms is constantly being improved and ready to pass on in even better condition to the next generation.

Emma Garfield, R&D Agronomist at C's, explains how they are going about achieving this objective:

"Soil is the key natural resource and primary asset of our business, so we are continuously working to improve soil quality and health. We also know that the better the soil quality, the better the quality of crops that it will produce – so preserving and improving soil health is a key priority. As such, we have rolled out an integrated approach to manage the range of different soil types we have across our farms.

"C's have previously invested in building an anaerobic digester and establishing a mushroom farm, both of which provide primary commercial products – energy and mushrooms – but also useful by-products that we use to improve soil quality. Following extensive trials, we now use spent mushroom compost and digestate to fertilise our salad crops and improve the condition of our soils. The use of these by-products has also proven to help prevent soil erosion.

"Some of our crops, such as salad, require intensive irrigation and because we want to deliver fresh products customers every day of the year, this means that we occasionally have to harvest crops when soil conditions are wet. This poses an obvious risk of soil compaction but we are working hard to improve the resilience of our soils to help limit compaction and the negative impact that compaction can have on soil health.

"One way in which we are doing this is by supporting a PhD study to investigate how to optimise the use of cover crops within our crop rotation growing schedule to improve soil quality and resilience. Cover crops not only help to break up and aerate soil with their root growth, but also provide additional biomass into soil when they breakdown. To date the research has demonstrated to us the most effective cover crop mixes we need to grow in order to get the best results at different stages of our crop-planting schedule.

"This research has also acted as a catalyst for other farm trials, including an MSc project to improve our understanding and management of cover crops and we have now significantly increased the use of cover crops across our farms."

Case Study

Season extension and water stewardship

Cobrey Farms is managed by the Chinn family, who produce a range of vegetable and fruit crops on 3,500 acres of land in Herefordshire, Norfolk and Suffolk. As well as supplying blueberries, Cobrey Farms are also exclusive suppliers of British grown asparagus to our M&S stores.

Cobrey Farms has worked with M&S for fifteen years now, and in this time the Chinn family have implemented a number of innovative projects to improve the efficiency and sustainability of production on farm.

"We have had a longstanding relationship with M&S and this has given us the confidence we need to develop and improve our business," explains Cobrey Farms partner, John Chinn. "In recent years, with the help of M&S funding, we have invested significantly in developing 50 acres of polytunnels for asparagus production beyond the traditional UK season, and this has had significant environmental benefits."

Traditionally, before the start of the UK asparagus-harvesting season, supplies of asparagus would be obtained from Peru to keep store shelves stocked. Now, thanks to John's new polytunnel system, the reliance on imported asparagus has been significantly reduced.

"For every kilogram of early season asparagus that we can produce, that is one less kilogram that needs to be imported from South America," continues John. "When you consider that a kilogram of produce would result in 10kg of airplane carbon emissions, we are making a significant environmental impact."

In conjunction with the new polytunnel operations, John has also established a new rainwater collection and water recycling system.

"Rainwater run-off from the polytunnels is now collected and stored on farm to use for asparagus crop irrigation and to help irrigate our fruit crops," John explains. "Blueberries like to be irrigated with acidic water and it is much more efficient for us to acidify rainwater than it is water from a borehole. Recycling rainwater also makes sense from an environmental point of view."

One of Cobrey Farms' latest projects has involved collaboration with Cranfield University to reduce levels of soil erosion when growing asparagus crops.

"Before we plant an area with asparagus we have researchers from Cranfield come and survey the field and establish the most effective direction for us to plant out the asparagus crop, depending on the lie of the land," explains John. "During heavy rain we don't want any water pooling around the asparagus plants as they don't like it but at the same time we don't want the rows to be too sloping as then water runs off too quickly, causing soil erosion.

"To further reduce soil erosion Cranfield also specify where to plant grass waterways alongside the asparagus crop, with grass seed then growing up through coconut coir matting, to provide buffer areas which will absorb excess water and stop run off of dirty water."

Broader activity

Education

We remain firmly committed to our education programme. Our unique Agricultural Leadership Programme continues in collaboration with Cranfield University, with a further programme being run in Feb/March 2017.

To date around 85 delegates have attended, which has been held on six separate occasions since it was launched in 2013.

The cohorts continue to comprise a diverse range of delegates from all production sectors, with each course intake including producers, processors, suppliers and M&S staff. There have also been delegates from overseas. The programme has always attracted extremely positive feedback, with this year's feedback summarised below:

Rate overall programme	92%
Personal expectations met	90%
Rate extent you would recommend to colleagues	96%
Promoted new ways of thinking	90%
Confidence to try new things/ do things differently in current role	92%
Relevance to job/ career over longer term	84%

In addition to this key initiative, we have continued to support young farmers in Scotland via our sponsorship of a specific class within the annual Fatstock Show, providing young people with the opportunity to walk the M&S beef supply chain and improve their understanding of the industry from field to fork.

We have also continued to support students at Greenmount College in Northern Ireland, who complete a project set by M&S and Linden Foods as part of their degree studies, having undertaken a walk the supply chain day. Students present their project to a panel from M&S and Linden, with the winning team visiting M&S at Waterside to spend a day with buyers, agricultural managers, product developers and technologists to improve their knowledge of the issues and challenges around food production and retail.

We are also supporting aquaculture apprenticeships in collaboration with the University of the Highlands and Islands and Scottish Sea Farms. These apprenticeships give participants access to the retail supply chain as well as the core aquaculture skills that they need, improving their awareness of customer requirements and consumer trends.

Case Study

Agri Leadership Programme

The M&S Agricultural Leadership Programme is a bespoke programme delivered by Cranfield University School of Management in conjunction with Marks & Spencer. The five-day course aims to broaden understanding amongst the M&S supply base about sustainability and management practices, and forms an important element of the wider M&S Farming for the Future programme.

Tim Lock, dairy farmer and current Chairman of the M&S Milk Pool, was one of candidates selected to attend the management course this year: "I was one of 16 delegates to attend this year's Agricultural Leadership Programme, alongside other M&S suppliers – including beef producers, fruit farmers and flower growers – as well as M&S staff and Sian Davies, the chief diary advisor at the NFU. The course was split into two distinct halves, with the first dedicated to supply chain management and the latter, leadership and general management.

"I found the series of lectures and presentations regarding the global supply chain, and how different producers fit into this supply chain, fascinating. The quality of speakers was superb and, as a dairy producer myself, it was useful to look beyond the farm gate and get a wider perspective on supply chain issues. The leadership work was really interesting too. We undertook a number of different tasks, including psychometric profiling and Myers Briggs personality testing. The leadership activities culminated with role-playing exercises, with candidates having to work through scenarios of their own creation where they would face difficult conversations. It was interesting to see how different candidates approached certain situations and how they reacted as the role-play scenarios evolved."

"As a farmer, you don't often have the opportunity to interact with so many different suppliers or gain the type of insights that we had during the course. Overall, it was a fascinating experience and one very different from my day job. I haven't been in a lecture hall since my days at university, so it was a real change to take some time away from the farm and spend it in this way."

Engagement activity

Agricultural and trade shows

We attended a number of major regional agricultural shows over the summer months of 2017 to spread our messages about sustainable farming to our customers and to meet and engage with our producers. Shows we attended include:

- **Balmoral Show, Belfast, Northern Ireland**
- **Royal Highland Show, Edinburgh, Scotland**
- **Royal Welsh Agricultural Show, Builth Wells, Wales**
- **Fruit Logistica, Berlin, Germany**

Farming for the Future awards

To support the show programme, we have continued to run an awards scheme for M&S producers and suppliers. This encourages farmers and growers within the supply chain to share best practice and highlights the benefits of sustainability. In 2017, the awards attracted high quality entries from across the globe and culminated in nine regional winners and an overseas winner.

Our collaboration with The Prince's Countryside Fund for a regional award for contribution to rural communities continues, highlighting the great work of this charity and our partnership with them.

Influencer / NGO briefings

Our ongoing programme of influencer briefings has continued, with our agriculture and agronomy teams having regular meetings with many of the key influencers in their sectors. We actively engage with government (including devolved governments) on sustainability and industry issues.

Producer meetings

Producer meetings continue to be a key part of our day-to-day implementation of Farming for the Future. As well as discussing operational and technical matters, these meetings provide an opportunity to discuss sustainability and the activity going on within the Farming for the Future programme. They also enable face-to-face discussion and knowledge transfer between M&S and producers and between individual producers.

Industry engagement

We continue to engage with the wider industry, through direct contact and via support of industry initiatives. We routinely attend major industry events such as the Grower of the Year Awards, The Oxford Farming Conference, Fruit Logistica, the NFU Conference, etc. M&S team members have also spoken at a number of key industry conferences and events. We have also held face to face meetings with the farming unions, levy boards, red tractor assurance, CIWF, WWF, Prince's Countryside Fund, Defra, Scottish Government, Welsh Assembly Government, Food Standards Authority and RSPCA.

Sponsorship activity

To raise the profile of M&S Farming for the Future activity, the business continues to make use of strategic sponsorship opportunities. In the last twelve months, these have included the LEAF Open Farm Sunday and involvement in the Prince's Countryside Fund. We also sponsor major livestock classes at the agricultural shows we attend. We also continued to sponsor the Oxford Farming Conference in January 2017 and the NFU Conference in February 2017.

External relationships

Our most important external relationships in the delivery of our Farming for the Future activity are with suppliers, and their input and support in delivering change is vital to future success. The challenges we face are not unique to M&S and our supply chain and we are committed to working closely with others in the industry to identify a clear way forward and to help deliver change.

We work closely with FAI on animal welfare issues and with LEAF on integrated farm management. We partner with Cranfield University and Greenmount College on the delivery of our education programme and we regularly consult with UK levy boards, along with the Farming Unions in Scotland, England & Wales and Northern Ireland, on industry issues.

Conclusion

Through the development of Plan A 2025 we've taken the opportunity to set bold, ambitious targets for the future. We don't know how we will address some of the sustainability challenges we face and we know that we can't solve them by ourselves. But solve them we must. The natural environment is under increasing pressure as the world's population grows and as consumption increases.

The challenges we face in raw material sourcing for our food business are varied – from climate change to animal welfare, and from human rights to food waste. We need to do more to create a low carbon, sustainable food production system, that can sustain our growing population whilst minimising our impact on the planet.

There are big opportunities ahead and we will continue to collaborate with others to set a course to becoming a truly sustainable business. If you have any queries then please get in touch at **sustainable.farming@marks-and-spencer.com**

Plan A 2025