



**WWF-NL BASKET RATIONALE**

**BLUEPRINT FOR ACTION**

BE ONE WITH NATURE

# THE RATIONALE OVERALL INTRODUCTION

**The health of our planet is declining. The 2022 global Living Planet Index shows an average 69% decrease in the monitored wildlife populations between 1970 and 2018. ([Living Planet Report 2022](#))<sup>1</sup> To reverse this nature loss, the world must protect and restore the land, freshwater and marine natural habitats for the benefit of nature and people. At the same time, we urgently need to reduce humanity's footprint on Earth and move towards sustainable practices in agriculture and food systems, forestry, fisheries, energy and mining, infrastructure and construction.**

Therefore, the ambition of WWF is to halve the footprint of consumption and production by 2030 in order to stay within the planetary boundaries. Food production is one of the biggest threats to our environment: The global food system is the primary driver of biodiversity loss<sup>2</sup> and is estimated to be responsible for 21–37% of Global Green House Gas Emissions ([IPCC, 2019](#))<sup>3</sup>. Change is needed. To achieve it, we need to work together with the key players.

WWF Netherlands (WWF-NL) has worked to develop a 'Basket' that aims to halve the environmental impact of food-related shopping baskets in the Netherlands by 2030. The WWF-NL Basket is based on the [WWF-UK Basket](#)<sup>4</sup> and was adopted for the Dutch food retail sector. The Basket focuses on seven of the most impactful environmental areas in the food system. Several measures that represent the priority actions for intervention to drive change are assigned to each area. The seven areas are: Climate, Deforestation & Conversion, Agriculture, Marine, Diets, Food Waste and Packaging.

This rationale report is published as part of the WWF-NL Basket. It provides the justification for the outcomes included in the WWF-NL Basket's Blueprint for Action. WWF believes that these outcomes should be achieved by Dutch food retailers to support the reduction of the Dutch footprint as a whole in order to stay within safe planetary boundaries. The Basket aims for a 50% reduction of the impact caused by the food retail sector. This rationale provides the background for the Basket outcomes in terms of the available scientific evidence, legislation and other agreements or, where not available, the assumptions and choices that are made.

There are still gaps in the scientific understanding on the impact of the food and retail sector, and the planetary boundaries and safe space. However, we have no time to wait. We need to act now. Therefore, assumptions and choices are made based on the currently best available information at the date of publication. We see the Rationale as a living document and welcome additional information. To significantly reduce the impact of the food system, we need to transform it and make a shift to nature-positive agriculture and marine sourcing. Some parts of WWF-NL Basket's Blueprint for Action are related to reducing the impact while other parts are related to shifting the production and consumption of food to a nature-positive approach.

The seven areas of action within the WWF-NL Basket are either 'thematic' or 'ingredient' specific. Thematic areas cover the whole of a retailer's footprint per area (e.g. Food Waste, Packaging or Climate). The 'ingredient' specific areas refer to high impact commodities which have a disproportionate environmental impact (e.g. soya). We recognise that food retail is a big part of the picture but not the entire picture. Therefore, actions will not only be needed from food retailers, but also citizens, government, the wider food industry and other sectors.

To learn how your business can get involved with the WWF-NL Basket, please find out more at <https://business.wwf.nl> or email us directly at [bedrijven@wwf.nl](mailto:bedrijven@wwf.nl).

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# CLIMATE



# INTRODUCTION

**In 2015, the Paris Agreement, an international treaty on climate change, was adopted by 196 countries, including the European Union (EU), at the 21<sup>st</sup> Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC). It marked a historic global consensus to collectively combat climate change and limit global warming to well below two-degrees Celsius compared to the pre-industrial levels (1850-1900) along with efforts to limit the temperature increase to 1.5-degrees Celsius. The EU target to reach a 55% reduction of GHG emissions by 2030 (compared to the 1990 levels) and net zero by 2050 is the union's contribution to achieving the Paris Agreement goal.**

Climate change is addressed through two main strategies: climate mitigation and climate adaptation actions. These actions comprise policies and implementation activities geared towards reducing greenhouse gas emissions (GHG) and adapting to the impacts of climate change, respectively. Climate change is driven by several factors that contribute to the warming of the Earth's atmosphere and the subsequent changes in global climate patterns. The drivers can be anthropogenic or human-induced and natural. The Intergovernmental Panel on Climate Change (IPCC) have repeatedly attributed the majority of the drivers of global climate change to anthropogenic or human-induced activities. The IPCC's Sixth Assessment Report (AR6) states that "it is unequivocal that human influence has warmed the atmosphere, ocean and land". The main anthropogenic drivers of greenhouse gas emissions such as carbon dioxide, methane, nitrous oxide and fluorinated gases are a) land use and land cover change: deforestation and urbanisation; b) industrial processes: cement production and agriculture; and c) energy production: burning of fossil fuels. For the Basket, the focus is on food systems and agriculture as a driver of climate change.

Climate change and the current global food system form a reinforcing loop, whereby the two exacerbate each other through a complex interplay between them. The global food system, including agriculture, contributes to approximately 21%-37% of global greenhouse gas (GHG) emissions (IPCC, 2019). Both climate adaptation and climate mitigation strategies are required to address the driver of global food systems. However, climate adaptation is currently beyond the scope of the Basket and the focus will be on

climate mitigation. The WWF-NL Basket Programme in the Netherlands is a collaboration between WWF and Dutch food retailers with global supply chains with the goal of halving the environmental impact of Dutch food baskets. To achieve this goal, climate change is an important component for consideration.

## RATIONALE

The report uses the methodology of the [Science Based Targets initiative \(SBTi\)](#) which supports companies and financial institutions to set ambitious climate targets in line with the latest climate science. The SBTi helps set GHG emission reduction targets which are consistent with the level of decarbonisation required for a company to align with the aforementioned Paris Agreement goal. By the end of 2023, 4205 companies and financial institutions globally had SBTi-validated targets, which represents roughly 39% of the global economy.

To develop targets for their GHG emission reduction and decarbonisation plan that contribute to climate change mitigation, food retailers have to take stock of their scope 1, 2 and 3 emissions. The three scope emissions are categories that are used to classify the different types of GHG emissions a company or organisation is responsible for according to the [Greenhouse Gas Protocol](#).

The main outcome of the climate area of the Basket programme is to achieve greenhouse gas emission reductions based on SBTi which align with the 1.5 trajectory by 2030. This is the near-term target as defined by SBTi. In order to achieve the outcome, the measures or pathways are

## CLIMATE

to reduce scope 1, 2 and 3 emissions. The scope targets are based on the company's or organisation's GHG emissions from the base year of 2018.

**Scope 1 emissions** are direct GHG emissions from sources that are owned or controlled by a company.

**Scope 2 emissions** are indirect GHG emissions that are generated by the purchased electricity, steam, heating, and cooling consumed by the company.

**Scope 3 emissions** are all the other indirect GHG emissions that occur in a company's value chain, both upstream and downstream. They are often the largest component of the company's footprint.

### Measurement of emissions

Global Warming Potential (GWP) is considered to be the gold standard for quantifying an organisation's contribution to climate change. GWP has also become the default measure for expressing emissions of different gases, such as carbon dioxide, methane and nitrogen oxides, on a common scale: carbon dioxide equivalents (CO<sub>2</sub>e). Measurements based on GWP are therefore preferred.

## THE DUTCH FOOD SECTOR AND CLIMATE CHANGE

The Intergovernmental Panel on Climate Change (IPCC) assesses that the 1.5°C goal requires the global carbon footprint to fall to net zero by 2050, and below net zero later in the century. Agriculture is the second largest contributor to the Netherlands' territorial emissions behind the energy sector. In addition to CO<sub>2</sub>, agriculture is also responsible for most of the territorial emissions of methane (69.5%). However, it is imperative that reduction targets are met by all food system actors and sectors: agriculture, processing, manufacturing, transport and logistics, retail and the food service sector. The food system accounts for approximately 20% of the GHG footprint of the Netherlands. The Netherlands is exceeding its fair share of the use of the planetary boundary for GHGs by 88%. This is based on the Netherlands' consumption footprint which differs from the 'territorial' footprint used by UNFCCC protocols (and consequently the national accounts). The territorial footprint does not include the emissions embedded within goods that are imported and then consumed within a country. For the Netherlands,

which is a major importer of GHG emissions embedded in deforestation-risk agricultural goods, this distinction is significant, with the consumption footprint being in the region of 20% higher.

In common with the other Basket areas, the retail sector will be dependent on other actors if the food system is to achieve the required reduction in emissions. These include decarbonising the energy supply, transport and logistics, and incentives and support for the widespread uptake of regenerative agriculture. In addition, the quantification of overseas GHG emissions related to the Netherlands' consumption of imports, including emissions from land use change in agricultural imports, needs to be dramatically improved, on the background of which policymakers should set targets to reduce the emissions related to the Netherlands' consumption of imports (i.e. extend the scope of existing commitments beyond 'territorial emissions'). This will need to be backed up by support for producer countries to set and meet ambitious Nationally Determined Contributions.

# DEFORESTATION & CONVERSION



# INTRODUCTION

**Globally, forests and other natural ecosystems such as grasslands, savannahs and wetlands continue to be destroyed at an alarming rate. WWF identified 24 “deforestation fronts”- which are places that have a significant concentration of deforestation hotspots and where large areas of remaining forests are under threat. They and calculated that over 43 million hectares were lost in these fronts between 2004 and 2017<sup>1</sup>. The largescale conversion of natural ecosystems is one of the major drivers of the global biodiversity and climate crises. In order to reach the global biodiversity and climate targets, it is essential to halt deforestation and conversion immediately.**

The expansion of commercial agriculture is by far the greatest driver of land conversion, causing at least 80% of global deforestation<sup>2</sup>. This agricultural expansion in the tropics is associated with the large-scale production of a relatively small number of commodities, including soy, palm oil, maize, wood products, coffee, cocoa and beef. In 2017, the international trade in agricultural products was linked to 1.3 million hectares of tropical deforestation, with the European Union (EU) being the second largest importer of tropical deforestation associated with these commodities<sup>3</sup>.

Of these commodities, soy has the highest embedded tropical deforestation, with about 90,000 hectares of nature being lost every year to supply the EU. Most of this nature destruction is taking place in the Brazilian Cerrado, the most biodiverse savannah in the world. This is one of the most threatened biomes in South America, with more than half of its original area having been cleared of its native vegetation already<sup>4</sup>. The Netherlands imported about 1.75 million tonnes of soy directly from the Cerrado in 2018, accounting for nearly half of soy imports from Brazil<sup>4</sup>.

Within the EU, the Netherlands is one of the largest importers and traders in agricultural commodities associated with deforestation. Together, the Netherlands’ imports of deforestation risk commodities require millions of hectares to produce, an area equivalent to four times the size of the Netherlands each year, over 40% of which are from countries with a high- or very- high deforestation risk<sup>4</sup>. As such, the Netherlands has an important role and responsibility to ensure that commodities are free from deforestation and conversion.

## RATIONALE

The WWF-NL Basket concludes that deforestation and conversion need to be stopped as soon as possible. Therefore, the WWF-NL Basket asks for 100% deforestation and conversion free (DCF) supply chains by 2025. This outcome is in line with the WWF principles and asks for DCF[1], as well as with the new EU regulation on deforestation free products, which requires companies in Europe to ensure their supply chains are free of deforestation and forest degradation. In addition, the WWF-NL Basket aligns with WWF’s ask of retailers to not only ensure that their own supply chains are verifiably free of deforestation and conversion (Outcome 1 of the WWF-NL Basket), but also that they also require their suppliers to take equivalent action across their entire operations (Outcome 2 of the WWF-NL Basket).

The second outcome and measure target both the suppliers and first importers, ideally, in which we would target the first importers, but as these are not always known to the retailer and are therefore more difficult to influence and to measure progress on this outcome, we have also included the suppliers. It is important that retailers work with their direct suppliers, asking them to pass on the DCF commitments down the supply chain to their suppliers, thereby reaching the first importers.

In line with both the WWF ambition as well as the commitment made by Dutch retailers in 2022 on soy<sup>1</sup>, the outcomes and measures focus on both deforestation and conversion as all natural ecosystems need to be covered. These include savannahs, grasslands, woodlands, peatlands, rivers, wetlands and mangroves, among others.



## DEFORESTATION & CONVERSION

Whereas the WWF-UK Basket only considers soy and palm oil (although this may be expanded in the future), the product scope of the WWF-NL Basket is aligned with the relevant commodities that are in scope of the EU Deforestation Regulation (EUDR) and covers cattle, cocoa, coffee, oil palm, rubber, soy and wood<sup>2</sup>. As soy is the commodity with the highest deforestation footprint, the Blueprint for Action contains a specific mention of soy under measurement and reporting, marketing and communication, as well as suggestions for innovation and investment. It specifically addresses its use as animal feed, as about 90% of the soy imported to the Netherlands is used to feed livestock<sup>3</sup>.

### SOURCES

1. [https://wwf.panda.org/discover/our\\_focus/forests\\_practice/deforestation\\_fronts\\_/](https://wwf.panda.org/discover/our_focus/forests_practice/deforestation_fronts_/)
2. [https://www.wwf.nl/globalassets/pdf/farming-with-biodiversity\\_wwf-report-2021\\_spreads.pdf](https://www.wwf.nl/globalassets/pdf/farming-with-biodiversity_wwf-report-2021_spreads.pdf)
3. <https://www.wwf.nl/globalassets/pdf/stepping-up-the-continuing-impact-of-eu-consumption-on-nature-worldwide.pdf>
4. <https://www.wwf.nl/globalassets/pdf/rapporten/wwf-nl-report-risky-business.pdf>
5. <https://www.cbl.nl/een-ontbossings-en-conversievrijje-sojaketen-in-2025/>
6. <https://eur-lex.europa.eu/legal-content/EN/>
7. <https://www.wwf.nl/globalassets/pdf/rapporten/wwf-nl-report-risky-business.pdf>

# AGRICULTURE



# INTRODUCTION

**WWF's ambition is to halve the environmental impact of Dutch baskets by 2030. Food production is one of the biggest impacts on our environment – the food system is the primary driver of global biodiversity loss<sup>4</sup> and accounts for about 30% of GHG emissions<sup>5</sup>. We need to work with the key players to change, including retailers. The WWF-NL Basket for Agriculture focuses on the key drivers of environmental impact for fresh produce that is sold in Dutch supermarkets. Arable farming, horticulture and livestock farming represent priority areas for intervention to drive change.**

## RATIONALE

To define a Blueprint for Action, CLM Onderzoek en Advies has identified the most relevant themes and key drivers for the impact on agricultural production and proposed appropriate indicators to measure progress at the farm level. The indicators are clearly defined and provide guidance regarding the standards and certifications. Based on these indicators the themes and indicators should be embedded in the standard to be considered 'robust'. To complete the definition of 'robust' environmental standards and certifications, a target value needs to be defined per indicator in line with the ambition of 'halving the footprint'.

The current environmental standards and certifications need to be reassessed in the coming years to evaluate whether these are considered robust: do they include all the indicators and do they address the necessary target value per indicator and/or necessary steps towards the target values. Retailers are asked to provide transparency over which percentage of in-scope products are certified to the 'robust' environmental standards and certifications. This is a proxy metric.

In the first phase of this approach (April 2024), experts from CLM helped to give insight into the extent to which current environmental standards and certifications used in The Netherlands can be considered 'robust'. While it was concluded that these environmental standards and certifications address most themes, they do not fully align with the defined key drivers and indicators which are necessary to measure progress on reducing the environmental impact of agriculture.

The outcomes, measures and actions set within the WWF-NL Basket Blueprint for Agriculture for 2030 are based upon the abovementioned process. The specific percentages per outcome are determined based on the ambition to reach halving the footprint for fresh agricultural produce while considering the challenges to develop robust environmental standards and certifications till 2030.

To be able to determine the progress of retailers against the targets, i.e. percentage of in-scope products certified against 'robust' environmental standards and certifications, appropriate indicators to define "robust" environmental standards and certifications for halving the footprint are needed. To define these indicators, we have opted for a holistic approach, which embeds most of the relevant themes that impact the footprint of agricultural production, in order to ensure that biodiversity recovery is represented alongside other themes such as climate mitigation:

- Climate mitigation: greenhouse gas emissions and energy use
- Air quality: including ammonia emission (nitrogen deposition)
- Water quality: emission of pesticides, nutrients (N and P) and veterinary medicines
- Water quantity: including the use of groundwater
- Soil: soil quality, organic matter, etc.
- Biodiversity: biodiversity (on farms and outside of farms) is influenced by many factors, including nitrogen deposition and water quality and quantity, and nature elements on the farm
- Deforestation is also an issue. However, this is a separate area in the WWF-NL Basket.

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These themes have been linked to key drivers. Per key driver, Key Performance Indicators (KPIs) are defined. The set of KPIs, and the necessary target values, will be used as the basis for the robustness-assessment of standards and certification in the future.

KEYDRIVERS*	SUBDRIVERS	KEY KPI'S (MEETING 18/6)	ARABLE	GREEN-HOUSE	DAIRY	STABLES (PORK, CHICKEN, EGG)	ALLIGNED W/KPI-K
GHG Emissions	GHG Emissions	CO2e per kg product	Relevant	Relevant	Relevant	Relevant	Yes
		CO2e per ha	Relevant	Relevant	Relevant	Relevant	Yes
	Energy	Energy use per kg product	Relevant	Relevant	Relevant	Relevant	In dev't
		n/a	Optional if J/kg product is not available	Optional if J/kg product is not available	Optional if J/kg product is not available	Optional if J/kg product is not available	In dev't
Nutrients	Ammonia emission	kg ammonia per kg	Not relevant	Not relevant	Not relevant	Relevant	Yes
		kg ammonia per ha	Relevant	Not relevant	Relevant	Not relevant	Yes
	Fertilization (manure + fertilizer)	Nitrogen balance per ha	Relevant	Not relevant	Relevant	Relevant	Yes
		Nitrogen balance per kg product	Not relevant	Relevant for soil based greenhouses	Not relevant	Not relevant	No
		Phosphate balance per ha	Relevant	Relevant	Relevant	Relevant	Yes
		Phosphate balance per kg product	Not relevant	Relevant for soil based greenhouses	Not relevant	Not relevant	No
Chemicals	Pesticides	kg active substance use per (kg) consumer product	Relevant	Relevant	Not relevant	Relevant	Yes
		Environmental impact of the use of pesticides	Relevant	Relevant	Relevant	Relevant	Yes
	Medicines	Use of antibiotics in DierDagDoseringen	Not relevant	Not relevant	Relevant	Relevant	No
Circularity	Feed circularity	Use of circular raw materials for feed	Not relevant	Not relevant	Relevant	Relevant	Yes + In dev't
		Feed origin	Not relevant	Not relevant	Relevant	Relevant	In dev't
	Manure circularity	Manure origin	Relevant	Not relevant	Relevant	Relevant	In dev't
		Land-based dairy farming (GVE/ha in combination with milk production/ha)	Not relevant	Not relevant	Relevant	Not relevant	
		Circular application of manure	Relevant	Not relevant	Relevant	Relevant	No
Water use	Water quantity	Water use per kg product	Relevant	Relevant	Relevant	Relevant	In dev't
		Water use per ha	Relevant	Relevant	Relevant	Relevant	In dev't
	Waste water treatment	No residues in waste water	Relevant	Relevant	Relevant	Not relevant	No
Soil management	Crops	Cover crops (%)	Relevant	Not relevant	Relevant	Relevant	Yes
		Crop diversity (Hill-Shannon Index + Randdichtheid)	Relevant	Not relevant	Relevant	Relevant	Yes
		Soil conserving crops (%)	Relevant	Not relevant	Relevant	Relevant	Yes
	Organic matter	% soil organic balance (arable)	Relevant	Not relevant	Relevant	Relevant	Yes
% permanent grassland (dairy)		Not relevant	Not relevant	Relevant	Not relevant	Yes	
Biodiversity		% acreage under nature and landscape management	Relevant	Not relevant	Relevant	Relevant	Yes
		% acreage under productive management	Relevant	Not relevant	Relevant	Not relevant	Yes

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KEYDRIVERS*	SUBDRIVERS	KEY KPI'S (MEETING 18/6)	ARABLE	GREEN-HOUSE	DAIRY	STABLES (PORK, CHICKEN, EGG)	ALLIGNED W/ KPI-K
International feed origin	Fertilization (manure + fertilizer)	Nitrogen balance per ha	Not relevant	Not relevant	Relevant, not measurable	Relevant, not measurable	No
		Phosphate balance per ha	Not relevant	Not relevant	Relevant, not measurable	Relevant, not measurable	No
	Pesticides	Environmental impact of the use of pesticides	Not relevant	Not relevant	Relevant, not measurable	Relevant, not measurable	No
	Water quantity	Water use for feed	Not relevant	Not relevant	Relevant, not measurable	Relevant, not measurable	No
		Cover crops (%)	Not relevant	Not relevant	Relevant, not measurable	Relevant, not measurable	No
		Crops	Crop diversity (TBD - Hill-Schellenindex?)	Not relevant	Not relevant	Relevant, not measurable	Relevant, not measurable
	Soil conserving crops (%)		Not relevant	Not relevant	Relevant, not measurable	Relevant, not measurable	No
	Organic matter	% soil organic balance (arable)	Not relevant	Not relevant	Relevant, not measurable	Relevant, not measurable	No
	Nature / landscape management	% acreage under nature and landscape management	Not relevant	Not relevant	Relevant, not measurable	Relevant, not measurable	No
		% acreage under productive management	Not relevant	Not relevant	Relevant, not measurable	Relevant, not measurable	No

## SOURCES

- <https://www.unep.org/resources/publication/food-system-impacts-biodiversity-loss>
- IPCC Special Report on Climate Change and Land (2019): If emissions associated with pre- and post-production activities in the global food system are included, the emissions are estimated to be 21–37% of total net anthropogenic GHG emissions (medium confidence). Summary for Policymakers – Special Report on Climate Change and Land (ipcc.ch) About 21–37% of total greenhouse gas (GHG) emissions are attributable to the food system. These are from agriculture and land use, storage, transport, packaging, processing, retail, and consumption.
- <https://www.cbd.int/rcp/2022/rcp-2022-14dec-wwf-programme.pdf>
- [https://www.nature.com/articles/s43016-021-00225-9#:~:text=A%20third%20of%20global%20GHG,%25\)%20for%20the%20year%202015](https://www.nature.com/articles/s43016-021-00225-9#:~:text=A%20third%20of%20global%20GHG,%25)%20for%20the%20year%202015)



# MARINE



# INTRODUCTION

**On average, the Dutch population consumes 15 grams of fish and shellfish a day from wild-caught fisheries and aquaculture products (RIVM 2023). The seafood we consume comes from all over the world and is caught and reared through many different techniques. The world's oceans have experienced dramatic change over the past century, with fisheries as one of the main drivers of declines in marine biodiversity (Jaureguiberry et al. 2022). Given the intense impact that unsustainable, illegal, unreported and unregulated (IUU) fisheries have on the natural and human environment, it is crucial to have systems in place to ensure that damage is minimised, the ecological basis is maintained and we move towards net-positive impacts on biodiversity, people and climate. To address this, we will need systemic change. This is a complex undertaking, especially for seafood, but it can be done.**

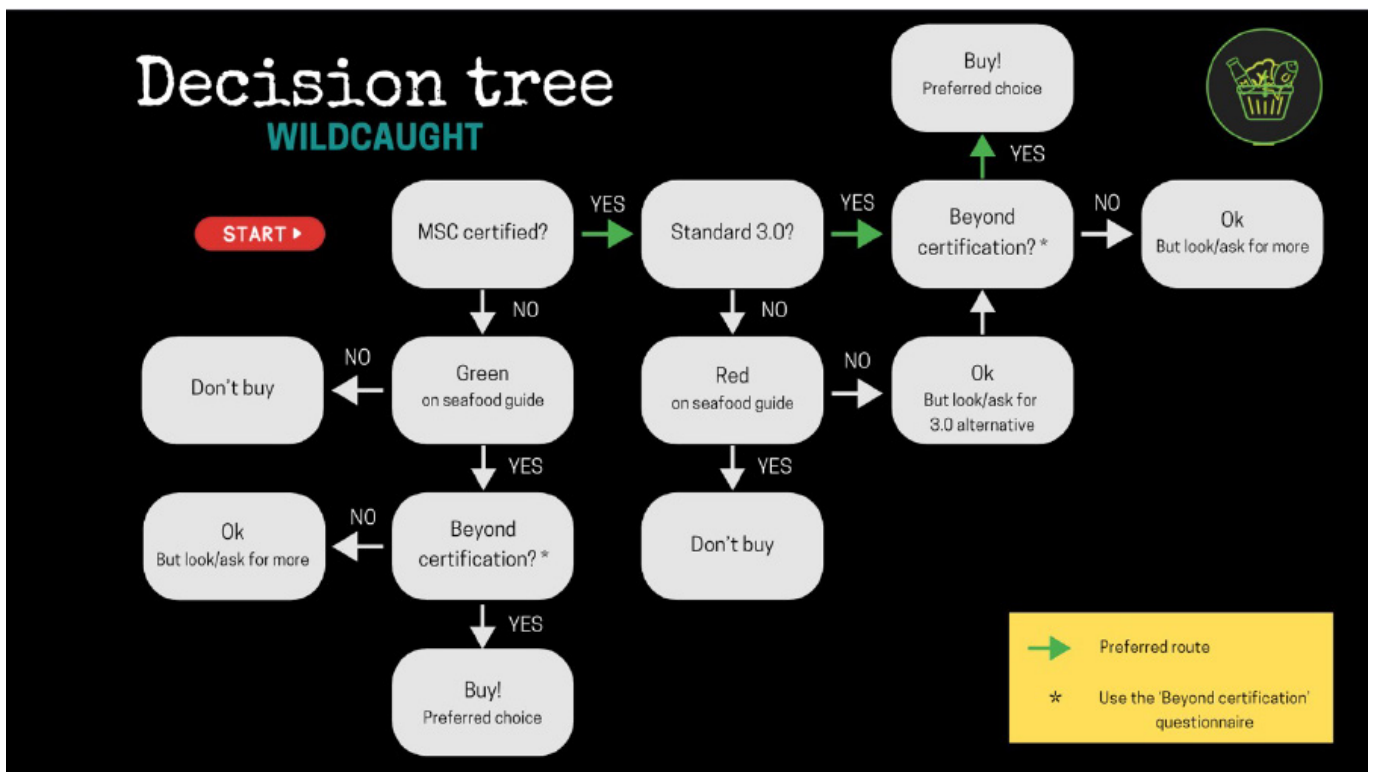
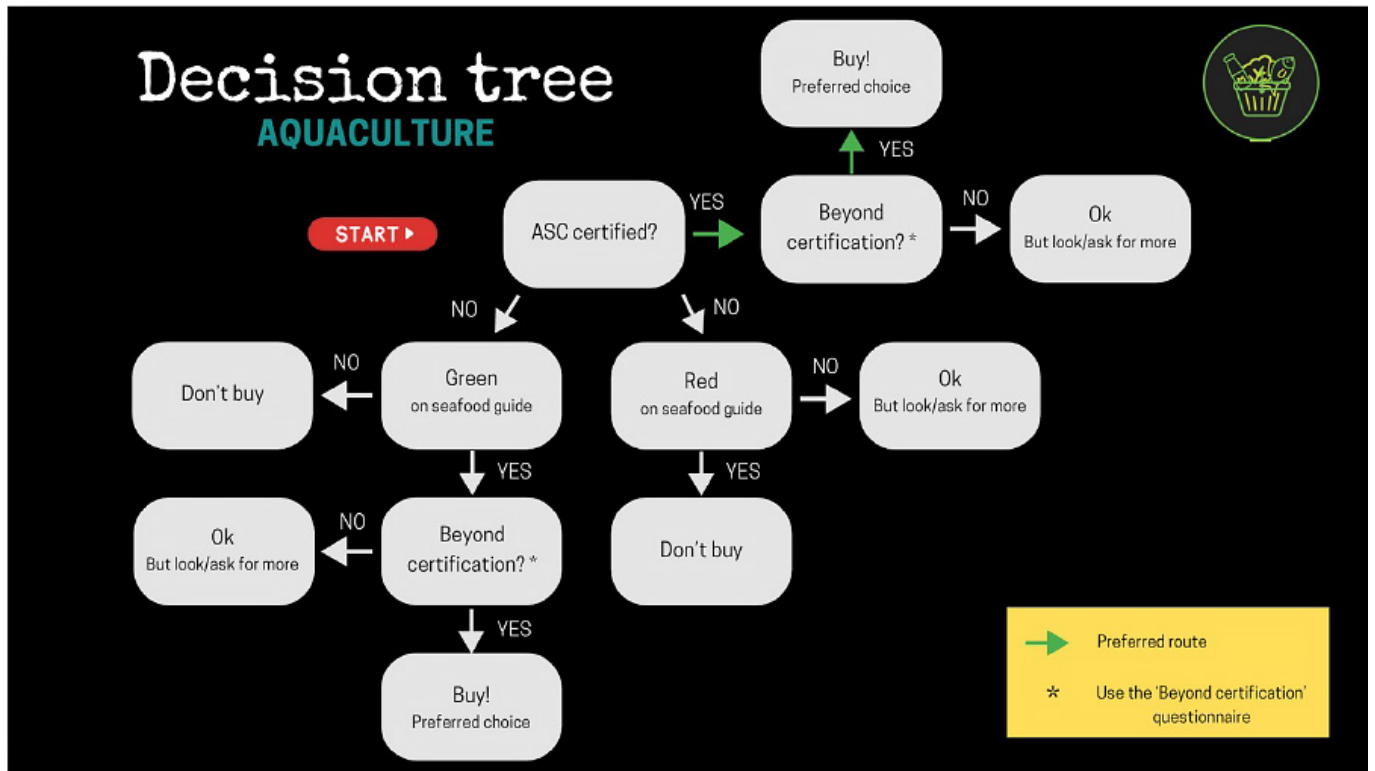
We aimed to follow the WWF-UK version of the marine basket (2021) as much as possible to align the efforts between international retailers and allow them to learn from each other. At the same time, to make things practical for retailers, we chose to focus on the choice to supply stores with the most sustainable choices available and stimulate more responsible options towards net-positive impacts and remove those that are not up to the standard.

Certifications provide a concrete means for retailers to increase the sustainability of their supply chain. For seafood, the most well-known and recognised certification labels are ASC and MSC. However, being 100% ASC/MSC certified does not guarantee 100% sustainability. In fact, there are cases of formal objections being filed against these certification labels (WWF 2020). Therefore, in order to measure sustainability in a more holistic way, we have defined six Retailer Progress Measures under the Basket's Marine area. These measures include existing certification and measures that go beyond certification. What is not included in these measures are equally important topics related to sustainable fisheries such as Human Rights and Animal Welfare. However, these topics are also related to other Basket areas as well and are therefore, they are described in one of the general chapters of the Blueprint for Action. Finally, the impact on climate, which is another key topic for wild-caught fisheries and aquaculture, is covered under the Basket's Climate area.

We take [Global Sustainable Seafood Initiative \(GSSI\)](#) recognised certifications as a minimal requirement and strive to go beyond these certifications by stimulating suppliers and retailers to do more beyond ASC and MSC requirements and eliminate controversial products by eliminating 'red'/'to avoid' rated seafood according to sustainable seafood guides. There is also the option to not be GSSI certified, but it must be rated 'green'/'recommended' on the seafood guides and go beyond certification.

**MARINE**

The marine basket approach comes down to: *prioritise the good and remove the bad*. This is seen in the decision trees for suppliers shown below (Boonstra 2024).





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### RATIONALE

As it was not possible to derive a quantifiable baseline for seafood, overall sustainability was set as the main target, while at the same time recognising that sustainability is a moving target. Therefore, we have defined two outcomes in our basket in order to ensure that all wild-caught & farmed products as well as all feed for farmed seafood, are from sustainable sources. Both outcomes start with a **baseline of certification** certification and ensuring that none of the wild-caught or farmed seafood is rated 'red' on sustainable seafood guides (list of guides) to prevent controversial products (e.g. to which official objections have been filed) from entering the product range, and then sustainability is defined via additional actions that the suppliers can take to reduce or even improve the environmental impact on the system by going **beyond** certification. **Sustainable Sources.**

For the sake of WWF-NL Basket, we define sustainable sources as:

- GSSI recognised certification.
- Not rated red/'to avoid' according to the Sustainable Seafood Guides.
- 100% of wild-caught seafood sourced from EU fisheries with REM and 75% wild-caught seafood sourced of non-EU fisheries with REM.
- Report on the % of wild-caught & farmed seafood sourced from fisheries or farms that act beyond certification, such as bycatch reductions, halting habitat destruction, enhancing animal welfare, and organic aquaculture feeds, and minimising freshwater usage.
- 100% of the farmed seafood has an FFDRo < 1 and FFDRm of ≤ 0.5.
- 100% of the feed is certified by ASC Feed Standard or equivalent.

### BEYOND CERTIFICATION

We consider 'beyond certification' to be measures that do more than the actions required by law and GSSI recognised certification. Note that beyond certification is an open field. To ensure sustainability, the goal should be 100% traceable and transparent seafood throughout the value chain. In 2018, most member states did not yet meet the sustainable fisheries targets (WWF EPO 2018). The overall rationale is that retailers can drive positive change and stimulate compliance by increasing demand for traceable, transparent, sustainable and nature-

positive seafood. An example questionnaire has been developed for guidance (see Appendix I). The Science Based Target Network Oceans Hub also offers guidance on fisheries and aquaculture to operate within the ecological and social limits.

### WILD-CAUGHT

A fishery can be considered sustainable if its ecological basis is being maintained and restored, thereby ensuring that future generations will not be disadvantaged. The benefits of the fishing activities should strengthen community and/or societal resilience, and management and governance actions should reflect a precautionary approach, facilitating the necessary adjustments in the catch, effort and gear with transparency and public reporting. For wild-caught products, expert consultations (primarily through Good Fish, WWF and Michelle Boonstra) concluded that MSC standard 3.0 covers far more than the current standard towards sustainable fisheries. However, incentive and urgency for the fisheries to comply with this 3.0 standard can be stimulated in addition to doing more on top of the certification and requirements. Therefore, we are prioritising the sourcing of fisheries that have the 3.0 standard and go beyond certification in areas where the 3.0 standard still falls short and are not covered elsewhere within the WWF-NL Basket. These areas are determined to be: **(1) bycatch and discard, specifically Endangered Threatened Protected (ETP) species, (2) habitat loss, and (3) animal welfare.** Each of these three areas have gone additional beyond the certification measures that can work to address these gaps. For bycatch and discard, retailers can, for example, prioritise sourcing from low-impact and on-demand fisheries as well as fisheries that incorporate escape panels and other gear selectivity enhancements, such as LED lights, net adaptations, or ghost gear prevention technology. For **reducing habitat loss**, retailers prioritise sourcing from fisheries that avoid vulnerable habitats and/or Marine Protected Areas, and/or employ gear that minimises bottom impact. This can, for example, be done by requiring consistent and comprehensive GPS data tracking of fishing locations, to ensure that vulnerable and protected habitats are not entered. Note that it is not the expectation for retailers to review this GPS data. However, transparency can be enhanced when retailers increase the demand to get products from outside of protected and vulnerable areas, and when suppliers increase their willingness to provide

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this information. For animal welfare, retailers prioritise sourcing from suppliers that aid welfare by utilising humane stunning and killing methods, enhancing handling practices (such as pump adaptations) and improving the capture methods (including gear adaptations or haul duration). Increased animal welfare provides ecological benefits, as the minimisation of stress and injury improves meat quality and promotes survival of those that are released. This is shown in the figure below (Catch Welfare Platform 2023).



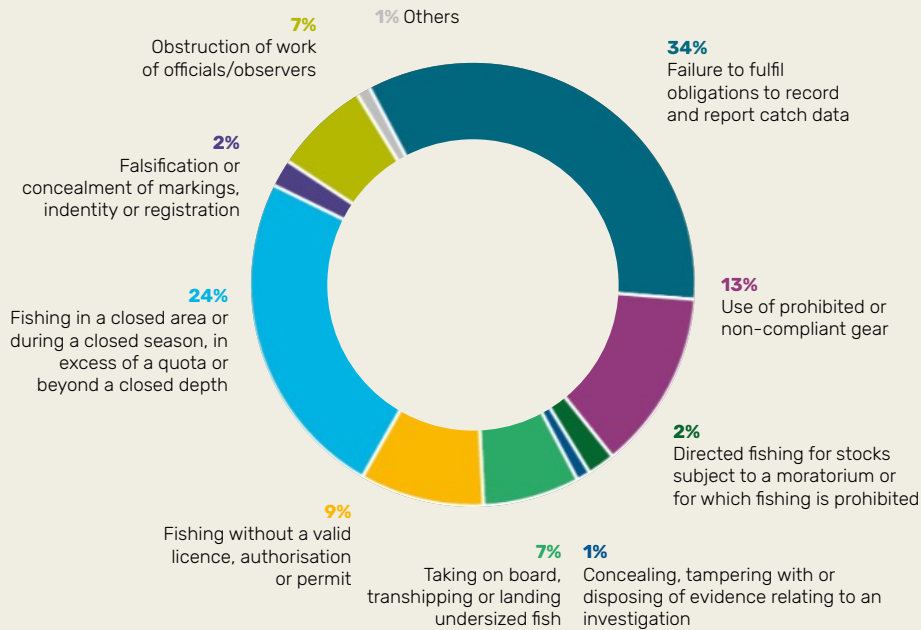
Note that animal welfare is also a beyond certification requirement for aquaculture (see section on aquaculture below). For animal welfare related Basket measures, the prioritisation of the suppliers does not outweigh one measure over another, but it is encouraged to source from suppliers that address multiple sustainability aspects.

The Basket also includes a measure for wild-caught seafood to be sourced from fisheries using **Remote Electronic monitoring (REM)**. This is crucial as illegal, unreported and unregulated (IUU) seafood is continuing to enter the European market and the bycatch of ETP species remains underreported (Figure 3, ECA 2022). In the Basket, REM is defined as the remote monitoring and surveillance of fishing operations via digital means to assure compliance with the regulations, to provide scientific evidence to support the sustainable management of wild capture fisheries or, in case of digitalisation, give insight into sustainability performance.

This can consist of:

- Webcam open to a control body (small-scale fisheries)
- CCTV open to a control body
- Camera system controlled by computer vision
- Other forms of digitalisation such as Fully Documented Fisheries (FDF)
- This can be catch and discard monitoring through camera-computer vision but also through digitalised scales that measure the catch:discard ratio as well as fuel sensors that communicate CO<sub>2</sub>/kg product (Boonstra 2024)

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By sourcing from fisheries that are actively using REM, these fisheries can demonstrate non-IUU activities and monitoring of bycatch. Note that it is not the responsibility of the retailers to monitor the fisheries, but rather to request evidence that REM is in place on the vessels, similar to the practices regarding the above-mentioned GPS data.

### AQUACULTURE

Similar to the section on wild caught fisheries, additional expert consultation (primarily Good Fish and Karin van de Braak) was used to define the basket on farmed seafood. Wild-caught and aquaculture fisheries are directly linked through feed. Traditionally, aquafeed has come from wild-caught fish in the form of fishmeal (for protein) and fish oil (for other nutrition requirements). In the past, there has been a heavy reliance on wild-caught fish, putting fish stocks at increased risk of being overfished. Efforts have been made to reduce this Forage Fish Dependency Rate (FFDR) in aquaculture by using alternative sources of protein, such as algal oils and marine by-products. FFDR will be explained in more detail later in this paragraph. However, more effort is needed to reduce the pressure that aquaculture is placing on wild fisheries (WWF UK 2022). An additional risk in the current trajectory of aquaculture production is the focus on efficiency and maximising

profit, specifically via intensive productions such as monoculture. This requires more control of the system, requiring more input (energy, chemicals, water), and producing more waste and pollution which negatively affects the entire surrounding system. The current food system is highly linear, and to combat the negative impacts on the environment, a shift is necessary towards circular and, eventually, nature-positive regenerative systems (van de Braak 2024). The WWF-NL Basket as a whole is striving towards a nature-positive regenerative system, while considering the limitations of what the retailers can control in the system.

The WWF-NL Basket includes two measures regarding aquaculture: **one regarding FFDRm** (Forage Fish Dependency Ratio for fishmeal) **and FFDRo** (Forage Fish Dependency Ratio for fish oil), and one regarding the **feed**. The Basket's targets for each individual retailer to strive for include an FFDRo of  $\leq 1$  and FFDRm of  $\leq 0.5$ . These targets are more ambitious than the ASC requirements. The targets have been chosen as many aquaculture species are able to be farmed with FFDR below 1 (Naylor et al., 2021). To ensure that the entire supply chain is responsible, there is a Basket Outcome for all feed to be at least certified by the ASC Feed Standard or equivalent.

## MARINE

Beyond certification for farmed seafood was defined as retailers prioritise sourcing from producers that (1) adhere to the **ASC feed standard**, (2) **certified organic products**, and (3) improve animal welfare. These topics were chosen due to the impact they have on a systems change towards regenerative aquaculture while remaining practical for retailers to attain. For the **ASC Feed Standard**, retailers prioritise sourcing from producers with the certification of the ASC Feed Standard 1.0 and emphasise the usage of novel feed sources. This ensures traceability amongst others. However, it must be ensured that the novel feed ingredients do not cause net harm. (WWF-UK 2022 ([https://www.wwf.org.uk/sites/default/files/2021-06/The\\_future\\_of\\_feed\\_July\\_2021.pdf](https://www.wwf.org.uk/sites/default/files/2021-06/The_future_of_feed_July_2021.pdf))).

Organic certified products offer a concrete and credible option and the measure is in alignment with the Green Deal's Farm to Fork Strategy, as the European Commission has set a target to significantly increase organic aquaculture by 2030 ([European Commission 2020 f2f action-plan 2020 strategy-info\\_en.pdf](https://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&plugin=1) (europa.eu)). In addition, aquaculture that has been certified organic is automatically rated green on the Sustainable Seafood Guide / Viswizer (Rademakers et al. 2023). The decision to include organic as a beyond GSSI certification measure it includes practical steps that need to be taken beyond conventional farming systems. Organic production follows a more ecological approach than traditional (intensive) aquaculture. It avoids synthetic pesticides, antibiotics, fertilisers, minimising chemical runoff and pollution, which protects water quality and aquatic ecosystems. Additionally, organic production aims to protect biodiversity, reduce the carbon footprint and make use of more sustainable raw materials to produce feed. By making use of more ecological principles, organic aquaculture uses less external input and results in less waste and pollution than intensive production systems (van der Braak 2024). We expect retailers to prioritise sourcing from producers who have verified organic products which ensures fewer intensive systems, promotion of biodiversity, limited use of chemicals and water pollution, and facilitate natural living conditions to improve welfare. This ties directly to the topic of animal welfare, where retailers prioritise sourcing from producers that ensure animal welfare is addressed throughout the production process, including but not limited to: disease treatment, water quality, handling, natural living conditions and density.

## INNOVATION AND INVESTMENT

Innovation and investments add on to sourcing prioritisation and continue to stimulate new developments towards sustainability and net-positive. As technologies and studies are ongoing, there may be new developments that do less harm than current best practices, and by following the development of ecosystem-based fisheries management including jurisdictional approaches with science-based targets and abiding by them where relevant, this ensures that retailers will continue to do their part. This aligns with the additional stipulations described in the basket. In addition, along with doing less harm, active restoration support of fish populations and marine habitats such as mangroves, mudflats, coral reefs, shellfish beds, kelp forests and seagrass will work to address the damage done by practices in the past and contribute to beyond certification efforts.

## ADVOCATE

The actions and requirements listed hereinabove and throughout the basket strive to create a sustainable, net-positive, wild-caught and aquaculture food system, but also it is limited in the feasibility of what retailers can achieve by 2030. Therefore, advocacy by retailers is key to continuing to push for more effective policies and certifications to address the components that we are unable to require from suppliers. These include advocating for:

- Effective policies and enforcement regarding validation of catch and discards, electronic certificates, fully documented fisheries, REM and prevention and retrieval policies for ALDFG (abandoned, lost, discarded fishing gear).
- Development of effective policies and enforcement to ensure full transparency in aquaculture and wild-caught fish and marine products.
- MSC standards and fisheries management agencies to include, for example, the following: social welfare, REM, low impact catch methods and ecosystem-based catch limits, use and report spawning stock biomass (SSB), and animal welfare.
- ASC standards and aquaculture management agencies to include, for example, the following: social welfare and food sovereignty, regenerative and circular systems, reduced antibiotic usage, and nature-positive production systems and animal welfare during the production process.

## MARINE / VARIOUS SEAFOOD GUIDES & INFORMATION SOURCES

DEFINITIONS BASED		
VISwijzer/ Sustainable Seafood Guide	Netherlands - Europe	<a href="https://www.goodfish.nl/en/search/">https://www.goodfish.nl/en/search/</a>
Seafood Watch	US	<a href="https://www.seafoodwatch.org/">https://www.seafoodwatch.org/</a>
Good Fish Guide	UK	<a href="https://www.mcsuk.org/goodfishguide/">https://www.mcsuk.org/goodfishguide/</a>
Ocean wise	Canada	<a href="https://ocean.org/overfishing/sustainable-seafood/search-sustainable-seafood/">https://ocean.org/overfishing/sustainable-seafood/search-sustainable-seafood/</a>
OTHER INFORMATION SOURCES		
Fish Source	Global	<a href="https://www.fishsource.org/">https://www.fishsource.org/</a>
Fish choice	US	<a href="https://fishchoice.com/">https://fishchoice.com/</a>
The Global Dialogue on Seafood Traceability	Global	<a href="https://thegdst.org/">https://thegdst.org/</a>
Seafood Jurisdictional Initiative	Global	Seafood Jurisdictional Initiative   WWF
Science Based Targets Network Ocean	Global	Ocean – Science Based Targets Network

# DIETS



# INTRODUCTION

**We can reduce the negative impact of the food system significantly by eating differently and by buying our groceries more consciously. With the WWF planet-based diet concept everyone can eat healthy and have enough food, now and in the future.**

WWF-NL distinguishes 5 recommendations for sustainable diets, within the context of planet-based diets<sup>7</sup>, recommendation 6 is added for the basket:

1. Eating more plant-based, less animal-based products (covered by Basket area Diets)
2. Eating more wholefoods (minimally processed), local and in season<sup>8</sup> (see Basket area Agriculture)
3. Eating from sustainable production methods (covered by Basket areas Agriculture, Deforestation and Conversion, Marine and Climate)
4. Eating more diverse and balanced; no overconsumption (covered by retail health policies in line with the Netherlands Nutrition Centre's current Wheel of Five (in Dutch: 'Schijf van Vijf')
5. Waste less food (covered by Basket area Food waste)
6. Stimulate reuse & recycling of packaging (covered by Basket area Packaging)

Shifting diets can unlock a multitude of environmental and health benefits including combatting the climate and biodiversity crises, relieving water stress and eutrophication of lakes and oceans, and as well as saving lives. However, these impacts play out differently in countries around the world and must be assessed separately for each country.

Dietary shifts towards more planet friendly diets are a powerful lever for achieving more ambitious Nationally Determined Contributions (NDCs), a more holistic Post-2020 Global Biodiversity Framework, and a renewed commitment to the Sustainable Development Goals (SDGs).

National Dietary Guidelines (NDGs: 'Dutch Dietary Guidelines 2015' plus 'Wheel of Five' in the Netherlands) are important tools for changing diets and they act as a bridge between global dietary recommendations and local context and relevance. Current NDGs, however, are not ambitious enough

to achieve global goals and commitments, and they should, therefore, be reviewed and updated to ensure they are in line with the global health and environmental targets (WWF, 2020).

## THE RATIONALE

### SYNERGIES BETWEEN HEALTH AND SUSTAINABILITY

There are several synergies between healthy and sustainable diets. If all Dutch people were to eat according to the Guidelines for a healthy diet, this would not only be good for their health, but it would also be ecologically responsible. According to the Health Council, a lower consumption of meat and dairy in particular leads to ecological benefits, because it reduces greenhouse gas emissions and land use.<sup>9</sup> This is confirmed in the recently published Nordic Nutrition Recommendations 2023. The priority interventions suggested are: reduce meat and dairy consumption as well as increase the consumption of legumes/pulses, whole grains, vegetables and fruit, vegetable oils, and nuts and seeds. Explore potential shifts to sources of fish and seafood from sustainably managed populations. Support a reduction in consumption of animal-source food and increase in provision of plant-based foods through feed-to-food shifts. This is relevant for cereals and pulses, as well as nuts, vegetables, and fruit.<sup>10</sup>

### THE IMPORTANCE OF SUPERMARKETS

Governments, food companies, supermarkets, caterers, and canteens can help consumers to choose sustainable food: focus on the food environment in such a way that the sustainable choice (local, organic, plant-based) is also the easiest and most affordable choice. WWF-NL supports the worldwide and European WWF ambition of halving the footprint of food production and consumption. The Netherlands should contribute their 'fair share'. The transition to a planet-based diet needs a behavioural change. Consumer research, commissioned by WWF in 2021 and

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including a representative sample of 501 Dutch people over the age of 16, indicated that consumers think it is important that supermarkets help them eat more sustainably. The results furthermore showed that consumers are most helped with lower prices for sustainable products, better recognisability of local and seasonal products as well as more products with a sustainability label.

The EU food chain is composed of agriculture, food and beverage processing, wholesaling, retailing and service, employing in total 29 million people and with 12 million enterprises. Total added value made in the EU chain adds up to more than € 800 billion. The EU food market has a size of € 1,595 billion (2022). Of this total, 81% is generated in food retail stores, and 19% in food service like restaurants, hotels, cafes, and kiosks (Profundo, 2024).<sup>11</sup>

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58% of the European greenhouse gas emissions are created by food production, which includes crop and livestock production as well as land use change. Carbon dioxide (CO<sub>2</sub>), Methane (CH<sub>4</sub>, mainly from livestock farming and rice cultivation) and nitrous oxide (N<sub>2</sub>O), mainly from soil management and fertilisers) are the main types of GHG emissions in the EU. While agricultural GHG emission levels in the EU have fallen since 1990, the decrease has become slower over time. Around a fifth of the emissions (21%) are created by the manufacturing and transport. Retail, household consumption and waste disposal each account for 7% of the emissions (retail is 72.2 million tons of CO<sub>2</sub>eq in 2021) (Profundo, 2024).

Supermarkets have a general responsibility for business sustainability reporting in line with the Corporate Sustainability Reporting Directive (starting 2023) and Corporate Sustainability Due Diligence (start date to be set).<sup>13</sup>

## NL FOOTPRINT TARGET

The entire economy of the Netherlands is hugely overshooting its global fair share of planetary resource use and needs to reduce its footprint. The Dutch food system contributes about two-thirds to the national footprint, which flags the urgent need for a major food system transformation. The Basket's Diets area addresses a significant part of the Netherlands' biomass footprint, of which the food system is the major contributor, and with additional potential benefits to GHG, nitrogen and phosphorous footprints, amongst others. (personal communication Steve Jennings, 2023; see also Metabolic/WWF, 2020<sup>14</sup>) To get the average Dutch diet for women and men within the planetary boundaries the footprint of land use, biodiversity loss, greenhouse gas emissions, phosphorus application and nitrogen surplus need to be reduced by 48% to 84% by 2050 and 34% to 72% by 2030 (WWF, 2023).<sup>15</sup>

An earlier publication commissioned by WWF underpinned the necessity of halving the footprint of production and consumption. Existing footprint measures, such as the planetary boundaries, the share of net primary productivity appropriated by humans, the ecological footprint, the material footprint, etc., all indicate that we have already significantly surpassed the acceptable levels of impact (Metabolic, 2020)<sup>16</sup>. The goal is to bring these impacts within safe boundaries by 2030. Countries, including the Netherlands, agreed upon in the Convention of Biological Diversity (Target 16, 2023) to reduce the global footprint of consumption by 2030 in an equitable manner, including through halving global food waste, significantly reducing overconsumption and substantially reducing waste generation, in order for all people to live well in harmony with the Earth.<sup>17</sup>

To live within the global carbon budget for food – we must reduce total greenhouse gas emissions from food production to at most 5 Gt CO<sub>2</sub>-eq, the maximum allowable total global emissions (or carbon budget) from producing our food (WWF, 2020)<sup>18</sup>. At the moment, 30% of the emissions of the food system are due to livestock and fish farms plus 16% due to land use for livestock. Thus meat, fish and dairy are the major contributing sources to total emissions from food production (Poore and Nemecek, 2018).



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### PROTEIN SHIFT TARGET

A shift towards a diet with more plant-based proteins and fewer animal-based proteins is better for the environment and healthier for most Dutch people. This is stated in an advisory report from the Health Council of the Netherlands (2023)<sup>19</sup>.

Animal-based sources of protein have a higher impact on the environment than plant-based sources of protein. Moreover, the consumption of some sources of animal-based protein has been shown to increase the risk of chronic diseases. This is why government policy has been aimed at the shift towards a diet with more plant-based proteins and fewer animal-based proteins. This is also known as the protein transition. The Health Council studied the health effects of a diet with 60% plant-based proteins and 40% animal-based proteins. In the current diet, this ratio is reversed.

The Council concludes that a more plant-based diet aligns better with the Dutch dietary guidelines than the current diet. For most Dutch people the protein transition can be implemented without causing nutrient deficiencies.

The more plant-based diet is estimated to result in a 25% decrease of the environmental impact of our food consumption. To make the shift possible, the Council recommends policy measures that are focused on making it easier for the Dutch population to move to a more plant-based diet.<sup>20</sup>

### A HEALTHY DIET WITHIN PLANETARY BOUNDARIES

WWF-NL conducted a unique Dutch study on how to eat healthy and sustainable in balance with nature. The aim is to ensure a liveable future for all of Earth's inhabitants. The study concludes that it is very much possible to create a diet that stays within the five main planetary boundaries (GHGs, land use, water use, nitrogen and phosphorus cycles). However, to ensure that everyone can eat healthy without exceeding the limits of our only planet by 2050, we will need to make a number of significant changes to our eating habits.

We will still be able to eat a variety of foods, including animal products – just to a lesser extent than we are used to. In other words, we don't have to switch to a fully vegetarian or vegan diet. To meet our sustainability goals, we will start eating more nuts, legumes, soy and meat substitutes in the Netherlands. Meanwhile, our meat consumption will be reduced most significantly to between 0.5 and 1.5 servings per week. Our consumption of cheese will be less than half of the current recommendation. Per week, there is room for 1 to 1.5 servings of sustainable seafood as well as 1 to 3 eggs. Liquid dairy consumption can remain at the current level of 1 to 2 servings.

The current government target of 50% plant-based protein by 2030 (50/50) needs to be tightened. The target of 60/40 by 2030 is what was agreed to by NGOs, several supermarkets and caterers. This WWF study suggests two-thirds (64-74%) as a target for 2050 to meet the planetary boundaries.

Bread and wholemeal cereal products will remain an important source of nutrients. Naturally, there will also be room for extra fruits and vegetables with a low environmental impact. Water, coffee, and tea will remain the most important beverages, in line with the Netherlands Nutrition Centre's current Wheel of Five (Schijf van Vijf). The proposed changes go a few steps beyond the current Wheel of Five but are less radical than the well-known EAT-Lancet diet. The new diet better matches the Dutch population's current eating habits.<sup>21</sup>

There are also many sources internationally. One of the most influential is the EAT-Lancet diet. This influential report shows that a more plant-based diet has both health benefits and sustainability benefits. It includes low frequencies of meat and fish consumption (approximately 37% animal-based protein) (Willett et al. 2019). The Dutch Scientific Climate Council cites steering towards a more plant-based diet and less waste as the most significant changes in behaviour regarding food choices. (Wetenschappelijke Klimaat Raad, 2023).

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# FOOD WASTE



# INTRODUCTION

**Around a third of all food produced for human consumption is lost or wasted from the farm to the fork (FAO, 2011).<sup>22</sup> This huge level of inefficiency has economic, social, and environmental impacts. Food loss and waste causes about \$940 billion per year in economic losses. It exacerbates food insecurity and malnutrition. And food that is ultimately lost or wasted consumes about a quarter of all the water used by agriculture, requires land area the size of China and is responsible for an estimated 8% of global greenhouse gas emissions. Reducing this food loss and waste is a “triple win”. Reductions can save money for farmers, companies, and households. Wasting less means feeding more. Reductions alleviate pressure on climate, water, and land resources.<sup>23</sup>**

Nature restoration will depend on a combination of dietary shifts, reduction in food loss and waste and adoption of nature-positive production practices.<sup>24</sup> When implementing dietary changes, reducing food loss and waste as well as applying ambitious changes in food production practices, up to 10 billion people could be fed within the planetary boundaries.<sup>25</sup>

## **RATIONALE: FOOD WASTE TARGETS AND CONTRIBUTION TO FOOTPRINT REDUCTION**

Food loss and waste contributes to climate change. It is responsible for at least 6% of total global GHG emissions, three times more than the global emissions from aviation. Almost a quarter - 24% - of all emissions from the food sector comes from food that is lost in supply chains or wasted by consumers. Almost two-thirds of this (15% of food emissions) come from losses across the supply chain, resulting from poor storage and handling techniques, a lack of refrigeration, or spoilage during transport and processing. The other 9% comes from food thrown away by retailers and consumers. In developed economies like the US or EU, food is more often wasted further along the supply chain, in consumer-facing industries such as hospitality, food service, grocery retail, restaurants, and in homes.<sup>26</sup>

The UN within the SDGs and the European commission have set a goal of halving the food waste. The year 2016 is used as a reference year. In 2016 the total food waste of Europe was measured for the first time<sup>27</sup>. The goal of 50% reduction of food waste is in line with the conclusion of the EAT-Lancet commission: At least halve food losses and waste, in line

with global Sustainable Development Goals (SDGs), Target 12.3. Substantially reducing the amount of food lost and wasted across the food supply chain, from production to consumption, is essential for the global food system to stay within its safe operating space. Technological solutions will need to be applied along the food supply chain and public policies implemented to achieve a 50% reduction in food loss and waste. Food loss refers to pre-farm gate loss of product. Previous research has demonstrated that much of the food loss occurring on farms is beyond the control of the farmers, which is driven by poor system practices and policies. 48% of the food loss which occurs is pre-harvest, i.e. food left in the fields, driven by decisions made post farmgate (e.g. standards and specifications) and an inflexible, broken food system. As such, farmers require support and system changes in order to support them in reducing loss rates and their impacts.<sup>28</sup>

Willet et al. (2019) estimated that changes in food production practices could reduce agricultural GHG emissions in 2050 by about 10%, whereas increased consumption of plant-based diets could reduce emissions by up to 80%. A further 5% reduction of GHG emissions could be achieved by halving food loss and waste. Halving food loss and waste could reduce water use by about 13%. Reductions in food loss and waste could reduce use of nitrogen and phosphorus by up to 15%. Halving food loss and waste can reduce projected biodiversity loss by up to 33% relative to the business-as-usual scenario.

## FOOD WASTE

Springmann et al (2018) estimate that halving food loss and waste would reduce environmental pressures by 6–16% compared with the baseline projection for 2050. In line with the differentiated impacts of the different measures of change, dietary change contributes the most to the reductions in GHG emissions, and technological and management related changes contribute the most to reductions in the other environmental impacts, while reductions in food loss and waste contribute up to a third to the overall reductions. Meaningfully reducing food loss and waste will require measures across the entire food-supply chain, with possible emphasis on investments in agricultural infrastructure, technological skills, storage, transport, and distribution in developing regions as well as education and awareness campaigns, food labelling, improved packaging that prolongs shelf life, and changes in legislation and business behaviour that promote closed-loop supply chains (in which waste is recycled back into the system) in developed areas.<sup>29</sup>

SDG 12 seeks to “ensure sustainable consumption and production patterns”. The third target under this goal ([Target 12.3](#)) calls for cutting in half per capita global food, and reducing food losses along the production and supply chains (including post-harvest losses) by 2030. It addresses especially addresses the role of retail.

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

### **THE ROLE OF SUPERMARKETS AND CONSUMER COMMUNICATION**

In the Netherlands, companies work together to achieve this SDG goal in the foundation Samen Tegen Voedselverspilling. The foundation Food Waste Free United is the public-private movement in the Netherlands that is committed to SDG 12.3. All the important initiatives and expertise against food loss and waste are combined and accelerated within Food Waste Free United. Food businesses from the entire supply chain, knowledge institutions, national and local governments and NGOs collaborate on the ambition of halving food waste by 2030.<sup>30</sup>

The 10x20x30 initiative brings together 10+ of the world’s largest food retailers and providers, each engaging at least 20 suppliers to halve food loss and waste by 2030. The effort catalyses a ‘whole chain’ approach to fighting food

loss and waste and supports upstream food loss and waste reduction. Each of the food retailers, providers, and suppliers has committed to the “Target-Measure-Act” approach: Set a target of reducing food loss and waste in their own operations by 50%, measure and publish their food loss and waste inventories, and take action to reduce their waste.<sup>31</sup>

In the Netherlands, supermarkets sold an average of 98.62% of all food on offer in 2022. This means that 1.38% of the food did not reach consumers. This means that the amount of food waste in supermarkets has decreased by 13.8% compared with 2020 and by 17.4% since 2018.<sup>32</sup> Therewith, Supermarkets are responsible for approximately 10% of the total food waste in the Netherlands. Alongside reducing their own in-house waste, supermarkets play a huge role in addressing and preventing food waste in households. Supermarkets are part of Tier-1 operations.<sup>33</sup>

The total amount of waste in the Netherlands throughout the entire chain in 2019 was between a minimum of 1.51 and a maximum of 2.38 kilotons. Converted per inhabitant, this is between 88 and 138 kilos per person. If the waste of solid food in households (excluding drinks) is now estimated at 33.4 kilos, this means that households have a share of about 24 to 38% of the total waste in the chain.

Buying what you need, cooking exactly to size and storing food and drinks in the right place and at the right temperature helps to prevent food waste. This allows consumers to reduce their environmental impact. By not wasting food you can save around €138 per person per year. The Nutrition Centre offers information and tools to cook, buy and store smartly and thus prevent waste.

### **LINK WITH PACKAGING THEME**

Packaging in the food sector serves an important role in protecting and preserving the food product and thereby reducing food waste. In many cases, the environmental impact of food waste is higher than the environmental impact of the packaging. Packaging is on average 10% of the environmental impact of a product and food waste 15%. The challenge in the food sector is to find the optimal balance in reducing the environmental impact of the packaging without losing the critical functionalities.

## FOOD WASTE

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14. Tier 1 generators include supermarkets, grocery stores, food service providers, food distributors, and wholesale food vendors. The edible food waste generated from Tier 1 sites will include fresh produce, meat, dairy, eggs, packaged foods, and a small amount of prepared foods.
15. <https://www.voedingscentrum.nl/encyclopedie/voedselverspilling.aspx>
16. <https://www.milieucentraal.nl/minder-afval/verpakkingen/milieuvriendelijke-verpakking-kiezen/#:~:text=Het%20is%20goed%20in%20gedachten,transport%20van%20het%20product%20zelf>



# PACKAGING



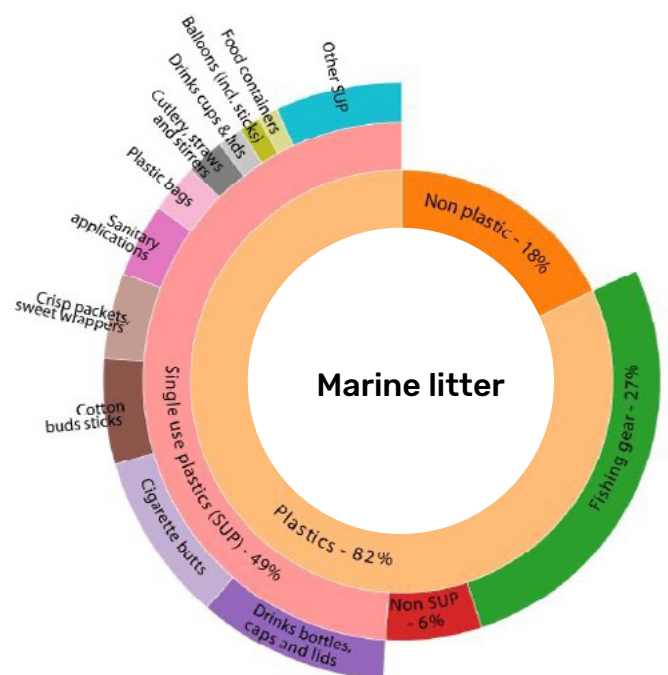
# INTRODUCTION

Packaging has an important function in the life cycle of many products. Packaging has four critical functions for a product: It contains, protects, provides utility, and communicates. In this way packaging provides environmental, social and economic benefits. Packaging in the food sector serves an important role in protecting and preserving the food product and thereby reducing food waste. In retailers cases, the environmental impact of food waste is higher than the environmental impact of the packaging<sup>36</sup>. The challenge in the food sector is to find the optimal balance in reducing the environmental impact of the packaging without losing the critical functionalities.

## THE ENVIRONMENTAL IMPACT OF PACKAGING

The production, processing, transport, retail, consumption, recovery for recycling and end-of-life management of packaging has an impact on the environment at every stage. **Raw materials are mined for plastic, glass, and metal (steel/aluminium) packaging, and trees are cut down for virgin paper, cardboard and wood packaging.** An increasing proportion of the raw materials in packaging is made from recycled material. However, to ensure food safety, there are strict rules for using recycled content in food packaging. For this reason, virgin raw materials for plastic and paper are often still used in food contact materials. In addition, virgin raw materials for plastics are often cheaper than recycled materials, in contrast to the often more expensive virgin raw materials for glass, paper/ cardboard and metal. The availability of recycled plastic materials for food packaging is also limited. Currently, only the use of recycled PET (rPET) is allowed for food packaging within the European Union. Therefore, the supply of rPET is currently lower than the demand.

In addition to the environmental impact of the material packaging chain, there is a global environmental crisis arising from litter in the environment, degrading the quality of life in many communities. **Litter in nature leads to entanglement, ingestion and suffocation by animals.** Furthermore, substances in the packaging material can be toxic or have other major negative impacts on animal, human and plant life. Moreover, the fact that plastic materials degrade into micro- and nanoplastics creates an increased concern regarding the impact on nature and human health ([Marine litter: the issue | UNEP - UN Environment Programme](#)).



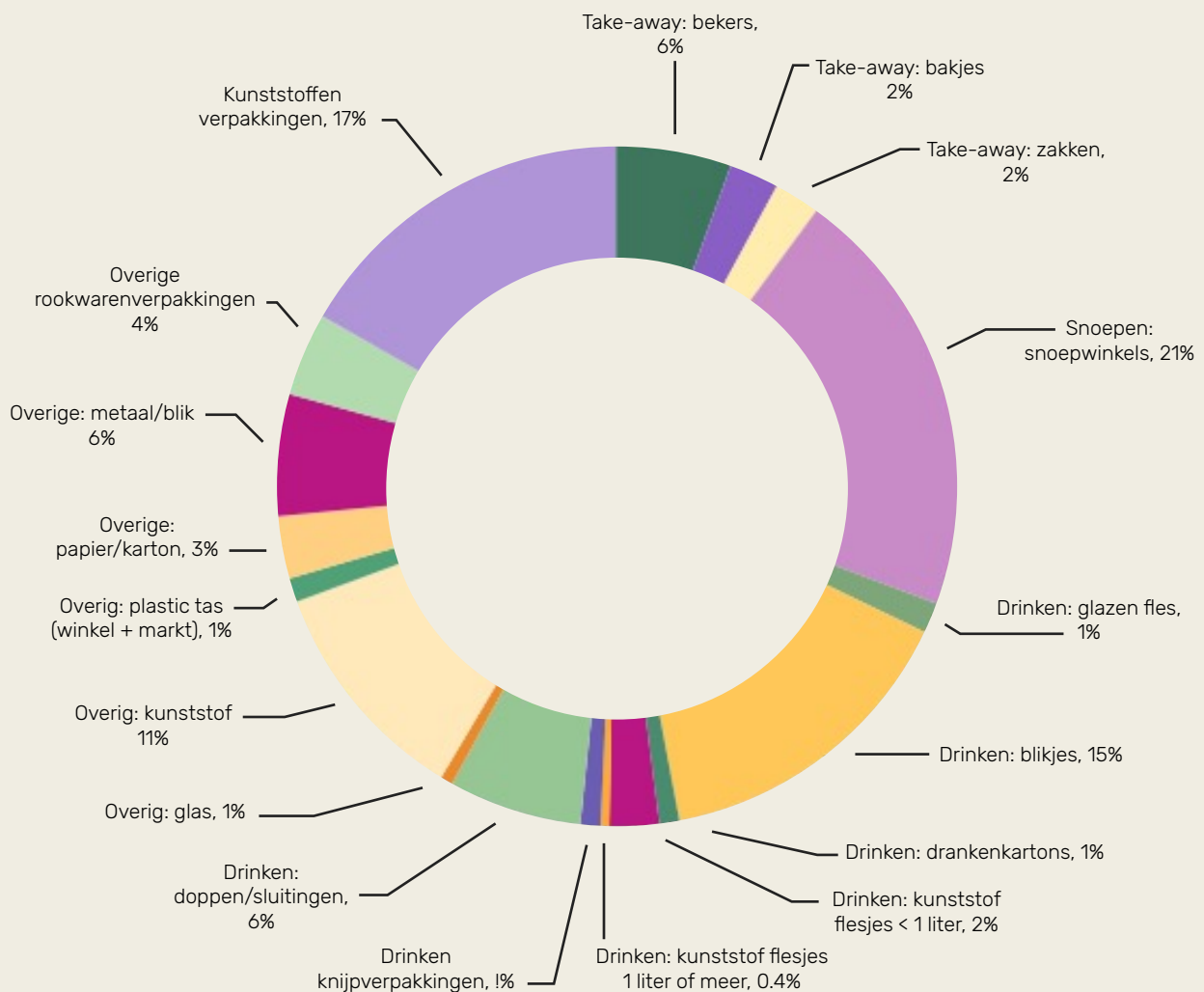


## PACKAGING

Up to 95% of waste found on the shorelines, sea surface and seafloor worldwide is plastic ([Global Distribution, Composition and Abundance of Marine Litter, 2015, Galgani et al.](#)). Plastic bags, fishing equipment as well as food and beverage containers are the most common items. On European beaches **49% of marine litter is single use plastics**, which partly involves packaging.

In the Netherlands, Rijkswaterstaat calculated that **35,2% of litter (in units) found in the Netherlands consists of packaging**. 11% of the packaging in litter comes from the Takeaway sector, as shown below. The remaining percentages of packaging in Dutch litter are partly from supermarkets. (Rijkswaterstaat, Landelijke zwerfafvalmonitor: jaarrapportage 2022).

### VERDELING VERPAKKING PER FRACTIE



Source: Landelijke zwerfafvalmonitor: [jaarrapportage 2022 \(gepubliceerd in 2023\), van Rijkswaterstaat \(p. 33\)](#).

**PACKAGING**

**THE RATIONALE**

**FAIR SHARE OF ENVIRONMENTAL IMPACT OF PACKAGING IN THE DUTCH FOOD SYSTEM**

The WWF-NL Basket aims to halve the worldwide environmental impact of food production and consumption by 2030. According to the Global Footprint Network<sup>37</sup>, the Netherlands is overshooting its demand for ecological resources and services compared to the planetary boundaries. In material and biomass footprint per capita, the main themes related to packaging, the overshoot of the Netherlands is enormous<sup>38</sup>. However, the material footprint is dominated by natural gas and non-metallic materials<sup>39</sup> and the biomass footprint is dominated by food and feed<sup>2</sup>. The share of packaging in the total material and biomass footprint is minor.

In fact, the environmental impact of food loss (e.g. due to reduced packaging use) is often much bigger than the environmental impact of the packaging itself, mainly due to the impact of food production. Therefore, when analysing the footprint of packaging it cannot be considered in isolation. In order to comprehend the environmental impact of a package, it is essential to consider how it influences the overall impact of the entire product system. Given the function of packaging in preserving food products (and thus preventing an increased biomass footprint), it would seem inappropriate to equate the reduction goal for packaging to the overall required reduction in material footprint in the Netherlands. Instead, we conclude that a footprint reduction of 50% in 2030 seems appropriate for packaging in the WWF-NL Basket. In this way, we equal the

material footprint reduction of packaging to the overall goal of halving the global footprint of the WWF-NL Basket. We also focus the outcomes and actions on the necessary system change towards a sustainable fossil-free circular packaging system.

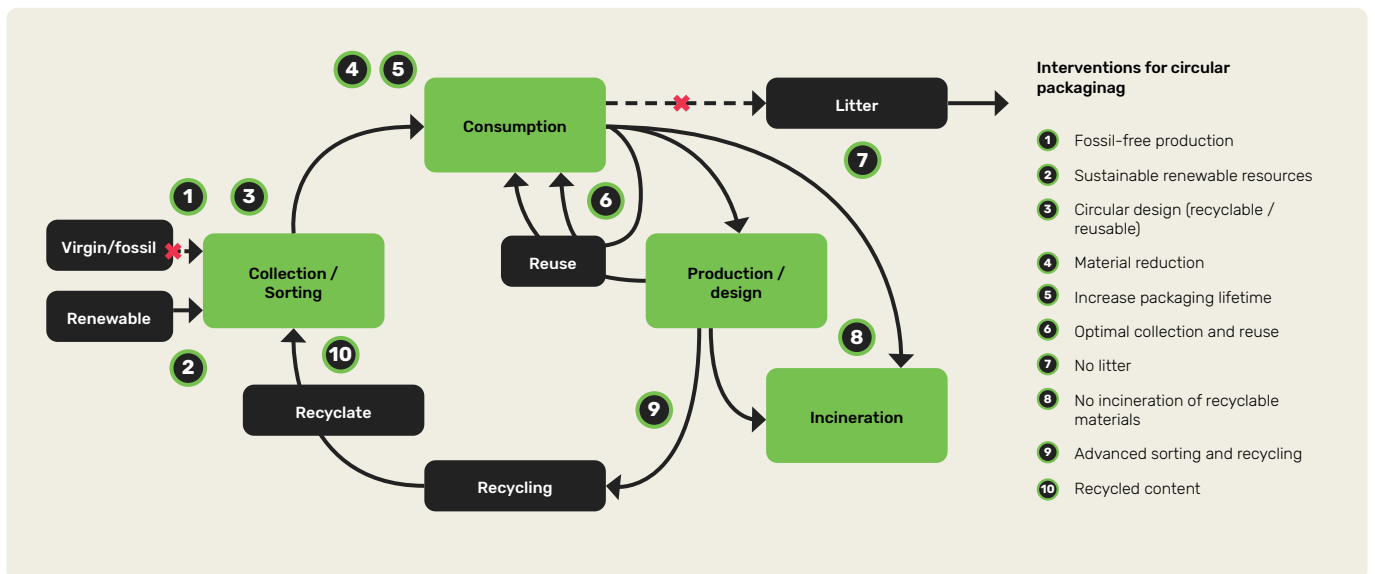
In addition, the focus on material and biomass footprint per capita does not adequately address the environmental problem of litter, since it is not included in the calculation of the footprint. When we analyse the share of Dutch food packaging in Dutch litter, we come to the conclusion that this share is major and needs to be addressed.

**KEY INTERVENTIONS FOR CIRCULAR PACKAGING**

To decrease the environmental impact of packaging, interventions are needed throughout its lifecycle. The figure below shows the simplified circular material chain. The main interventions are depicted for shifting to a circular packaging system.

This figure shows that optimising the current production, consumption and recycling pattern of packaging is not enough. We need systemic changes to shift:

- To other consumption patterns (refill and reuse solutions)
- To other design (fully recyclable and reusable)
- To reducing packaging material (without increasing food loss)
- To advanced collection, sorting and recycling techniques as well as preventing packaging litter
- From fossil or virgin resources to recycled materials or sustainable biobased materials where appropriate and still needed



## PACKAGING

### WWF-NL BASKET OUTCOMES FOR PACKAGING

In developing the WWF-NL Basket outcomes and measures for the Packaging area, we formulated the following **conditions**:

- The outcomes contribute to a **50% footprint reduction while not increasing the footprint related to food loss**.
- The outcomes contribute to WWF's **zero tolerance for plastic** ending up in nature ([WWF's goal 'No Plastic In Nature'](#)).
- The outcomes **stimulate the necessary systemic changes** to a fossil-free circular packaging system with reduced material use and increased reuse of materials already in circulation.
- The outcomes have an **added value (over the current policy and business objectives** for packaging) for pushing the food sector for taking steps.

#### Why do the outcomes stimulate systemic change?

We propose the following outcomes for all consumer packaging (food and non-food).

#### Outcome 1: 15% reduction of virgin and/or fossil material

Making the packaging chain truly circular requires reducing dependence on virgin and/or fossil materials. This can be achieved by reducing packaging materials (without reducing recyclability and functionality). The most environmentally friendly approach to reducing the environmental impact of packaging is to use no or less packaging material (without causing product loss) or not selling the product at all. Packaging material can be reduced by using less packaging material for the same product (e.g. by making the packaging thinner). Another way is by packing larger volumes, or by adapting the product itself (e.g. by packing concentrated product such as packing a soap bar instead of liquid soap). Total packaging volume can also be reduced by establishing an effective and efficient standardised reuse or refill system. Another way to reduce virgin (fossil) packaging material is by making an increasing share of packaging from recycled materials.

#### Outcome 2: Maximise the recycled content of packaging

Maximising the recycled content is key for all materials. Where this is not possible, materials should be sustainably sourced. By stimulating a minimum recycled content in packaging, the amount of fossil / virgin materials is reduced.

For plastics, we give the below mentioned outcomes for minimum recycled content or, where not possible,

(sustainably sourced) bio-based materials for 2030 to minimise the amount of fossil plastics in packaging.

Minimum recycled content in plastic packaging:

- 50% in contact sensitive plastic packaging (PET as major component)
- 25% in contact sensitive plastic packaging (all other than PET)
- 65% in single use plastic beverage bottles
- 65% in other plastic packaging

These outcomes are based on the **2040** targets from the [Packaging and Packaging Waste Regulation \(PPWR\)](#) (Verordening voor Verpakkingen en Verpakkingsafval) of the EU. This EU regulation will replace earlier EU regulations and directives. It is not finalised yet, but it is expected it will pass in autumn 2024 when the EU Council will vote on it. If agreed, it will be published by the end of 2024.

For other materials:

- recycled content in paper/cardboard/ wood packaging is maximised,
- recycled content in metal (steel/aluminum) and glass packaging is maximised

Due to limited insights into the current use of recycled content in glass, metal and paper/cardboard packaging and the absence of reporting on these figures, it is not possible to define quantitative outcomes. One of the defined actions for retailers in the Blueprint for Actions is to investigate the current amount of recycled content in these materials and to set ambitious targets to maximise it.

#### Outcome 3: 100% virgin / fossil materials sustainably sourced

It is important that the virgin materials still needed are sustainably sourced. For paper we set the following outcome: 100% FSC certified paper/cardboard/wood. For metal (steel/aluminum) and glass packaging the retailers should investigate what the useful certificates (or other instruments) are to ensure that these materials are sustainably sourced.

#### Outcome 4: 100% designed for recycling

An important precondition for ensuring that packaging waste can be used again as a raw material for new products is to ensure that it is recyclable. Supermarkets can make a maximum contribution to this by ensuring that 100% of their packaging is designed for recycling.

**PACKAGING**

**Outcome 5: The top ten types of supermarket packaging**

The top ten types of supermarket packaging that are often littered, are reusable, biodegradable or part of a deposit return system.

To prevent packaging from ending up in the environment, the top 10 most common packaging found in litter should be designed to decrease the risk of littering by organising a reuse system (e.g. through a deposit return system) or to decrease its impact on the environment by making it fully biodegradable (find definition below).

**Outcome 6: Surroundings of supermarkets (minimum 25 metres) are litter-free**

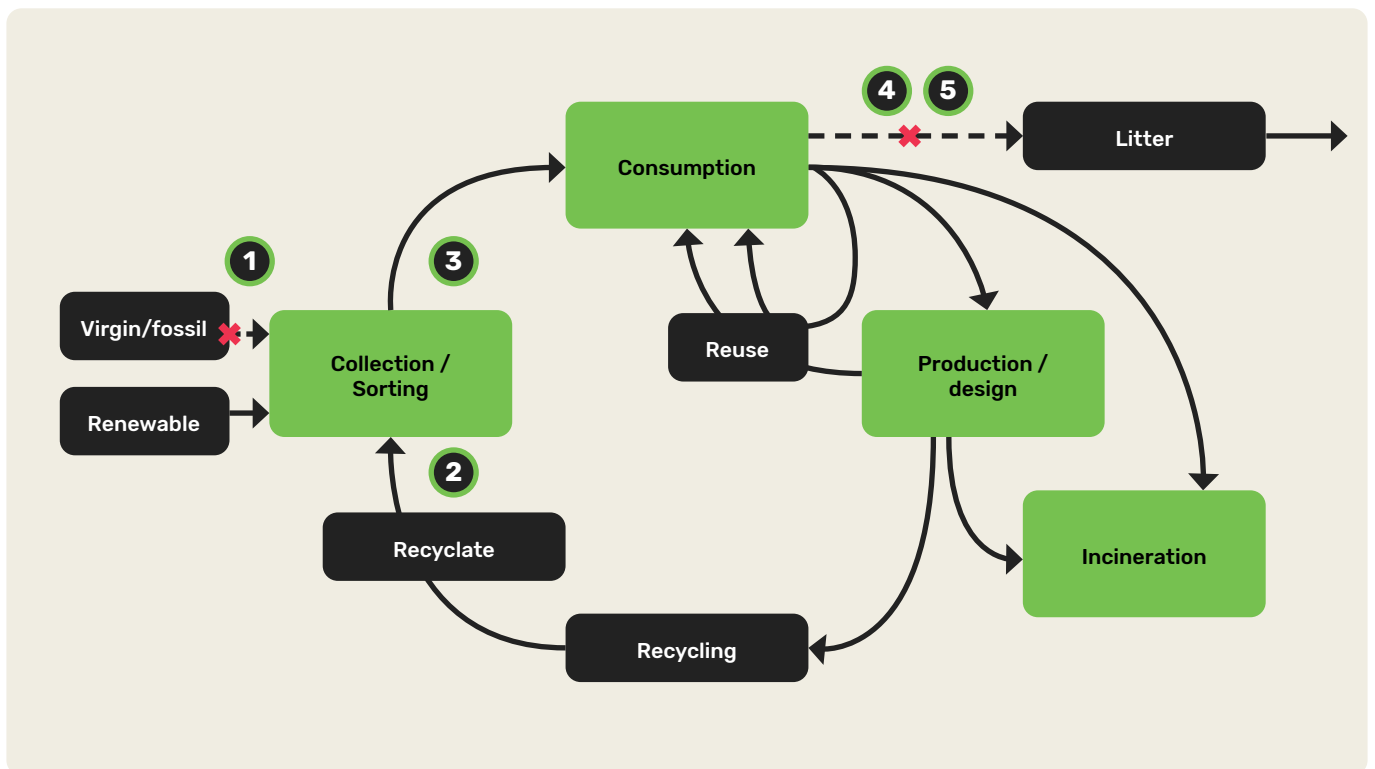
In the Netherlands, the '25 metre rule' applies whereby entrepreneurs are obliged to keep the 25 metres around their locations /stores clean of litter. We want to emphasise this rule because it is not yet sufficiently implemented and enforced in The Netherlands.

The figure below shows that the proposed outcomes are related to all interventions needed to shift to a sustainable and circular packaging chain, which can be influenced by the retail sector.

- Shift from fossil/virgin
- All materials are sustainably sourced
- Systemic changes to the most efficient circulation of materials
  - Rethink/Refuse (other product, other material, no packaging)
  - Reuse
  - Reduce
  - Recycle
- Contribute to the goal that no plastic enters nature

**How are these outcomes related to the goal of halving the environmental footprint of packaging?**

The environmental impact of packaging depends on many variables, such as the use of quantity and type of material, the method of waste disposal, the amount of deployment of recycle, consumer behaviour, etc. This makes it complex to perform a quantitative analysis on the expected impact of the outcomes on reducing the materials footprint of packaging. See WWF UK report '[Packaging unwrapped. Exploring the environmental impacts of global material flows relating to UK's packaging consumption.](#)'



## PACKAGING

The Netherlands aims for a fully circular economy by 2050, which means no more fossil nor virgin raw materials will be used for products such as packaging. **A major share of food packaging consists of plastics. The targets for the maximum use of recyclate or (where appropriate) sustainably produced biobased materials in packaging, directly relate to a decreased use of fossil and/or virgin raw materials.**

In addition, a complete transition to a different way of packaging and consumption is needed. **A transition to reusable and refillable food packaging will lead to a reduction in single-use packaging** and increased resource efficiency of materials in circulation. **If introduced on a large scale and standardised across all retailers where possible, this can lead to a reduction in material footprint and reduction of littering of single-use food packaging.**

## SOURCES

1. The packaging of food: how to minimise environmental impact - WUR
2. Dutch Overshoot Day was on the 1st of April in 2024 ([link](#)), based on data from the footprintnetwork databank ([link](#)).
3. Based on 1) Metabolic & WWF (2020). Halving the footprint of production and consumption ([link](#)) for the used framework, 2) Eurostat (2021), Material flow accounts ([link](#)) for data on material and biomass footprint of the Netherlands, 3) UN SDG Indicators ([link](#)) for the global material and biomass footprint (per capita, biomass assumed to be 20% of global overall material footprint) and 4) O'Neill et al. (2018). A good life for all within planetary boundaries. Nature sustainability, 1(2), 88-95 for the assumption on planetary boundary per capita.
4. Based on CBS (2022). Extraction, import and export of materials; national accounts.
5. This figure is based on a figure in the publication 'Circulaire kunststofketen in 2050' for Ministry of I&W (p.2). <https://transitieagendakunststoffen.nl/publish/pages/196565/circulaire-kunststofketen-in-2050-eindrapportage.pdf>
6. This figure is based on a figure in the publication 'Circulaire kunststofketen in 2050' for Ministry of I&W (p.2). <https://transitieagendakunststoffen.nl/publish/pages/196565/circulaire-kunststofketen-in-2050-eindrapportage.pdf>

## PACKAGING / SOURCES & DEFINITIONS

DEFINITIONS	
<b>%</b>	Calculated in material use
<b>Virgin and/or fossil material</b>	Primary material source that is mined (for metal, glass, plastic packaging) or sourced from trees (paper / cardboard / wood)
<b>Recycled Content</b>	Recycled content is defined as the proportion, by mass, of (Post Consumer Recyclate) recycled material in a product or packaging
<b>Sustainably sourced</b>	Paper/cardboard: FSC certified Biobased material: TBD (see Blueprint for Actions) Steel: TBD (see Blueprint for Actions) Glass: TBD (see Blueprint for Actions) Aluminium: Aluminium Stewardship Initiative (ASI)
<b>Design for recycling</b>	The packaging is fully designed to be recyclable, and if not yet the case, it is expected that the necessary developments and innovations in the recycling chain are implemented within two years to actually recycle (and collect and sort) the packaging.
<b>Reusable</b>	Reusable packaging refers to packaging designed and manufactured to be used multiple times throughout its lifecycle without losing its protective function. It is typically made from durable materials such as plastic, glass, metal, or wood, ensuring its longevity and ability to withstand repeated use, cleaning, and handling.
<b>Biodegradable</b>	Biodegradable material degrades within weeks in a natural environment without leaving any harmful substances behind. Packaging materials that are currently are considered biodegradable are paper / cardboard without plastic coating and harmful adhesives / inks.
<b>Deposit return system</b>	A Deposit Return System (DRS) is a system where consumers pay an additional amount of money (a deposit) when purchasing a product which is then refunded when the empty container is returned for recycling or reuse.
<b>25 metre rule</b>	A radius of 25 metre around the shop or catering facility is litter-free. That is the responsibility of every entrepreneur in the Netherlands. This means that an entrepreneur must remove litter (food, packaging or other materials) within a radius of 25 metres from the front door of his business as often as necessary.  This rule was part of 'Activiteitenbesluit milieubeheer'. With the introduction of the 'Omgevingswet' in 2024, the Activiteitenbesluit was abolished and became Besluit activiteiten leefomgeving (BAL). Not all of the rules have been transferred to BAL, including the 25 metre rule. The 25 metres rule changed from a national to a local rule.

# DISCLAIMER

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To find out more about how your business can get involved with the WWF-NL Basket, please find out more on <https://business.wwf.nl> or email us directly at [bedrijven@wwf.nl](mailto:bedrijven@wwf.nl).

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