

LAND USE POSITION STATEMENT

The current situation

Over millennia, farming and herding have transformed up to half of the Earth's landscape. More efficient large-scale farming has helped drive yield improvements in commodity crops, feed a growing population with rising incomes, and support global trade of agricultural crops. At the same time, agriculture is faced with challenges, including degrading soil quality, fertilizer and pesticide run off, and the effects of climate change. Each year an area the size of Bulgaria is lost to drought and desert. That is enough land to grow 20 million tonnes of grain per year (UNCCD, 2017).

Mars recognizes our responsibility to address the environmental and social impacts of our business. One significant impact is the amount of land required to produce the raw materials for our products. Although we do not control and have limited influence over operations in the farms and field sites that supply us with raw materials needed to manufacture our products, we recognize the importance of ensuring those areas do not expand beyond our share of the sustainable limit for agricultural land. This is critical for the health of our planet and well-being of farming communities.

The improvement in global yields is slowing for some staple food crops. Coupled with increasing demand, this can put farmers under pressure to clear forests and other lands to plant more crops. Agriculture, forestry and land use change account for around one quarter of global greenhouse gas (GHG) emissions (Smith, 2014). Other impacts, such as biodiversity loss and the loss of ecosystem services such as pollination, water regulation and soil stability, can damage food production and farmers' livelihoods. Recognizing the serious implications of unsustainable land use, the [UN Sustainable Development Goals](#) (SDGs) include commitments to sustainably manage forests by 2020, and to combat desertification, halt and reverse land degradation, and halt biodiversity loss by 2030. These challenges require action to maintain and enhance productivity on existing agriculture land while protecting the remaining natural ecosystems for their biodiversity and ecosystem services.

According to the [Planetary Boundaries](#) model, in order to maintain a healthy and sustainable ecological balance that can support humanity, no more than 15% of land globally (excluding that permanently under ice) should be cultivated for crops. As of 2017, around 12% of land globally is classified as cropland (FAOSTAT, 2019).

The cropland and pastureland used to produce the raw materials that Mars buys account for 99% of total land use associated with our full value chain. The other 1% includes, for example, the land for our factories and offices around the world. It currently takes around 2.7 million hectares to produce our raw materials – an area roughly equivalent to Haiti. It's essential for our future supply security that this land use doesn't encroach on forests and other natural ecosystems and that biodiversity and soil health is protected.

Our long-term ambition

Our goal is to hold flat the total land area associated with our value chain. Freezing the land footprint of Mars' full value chain will help reduce pressure on natural

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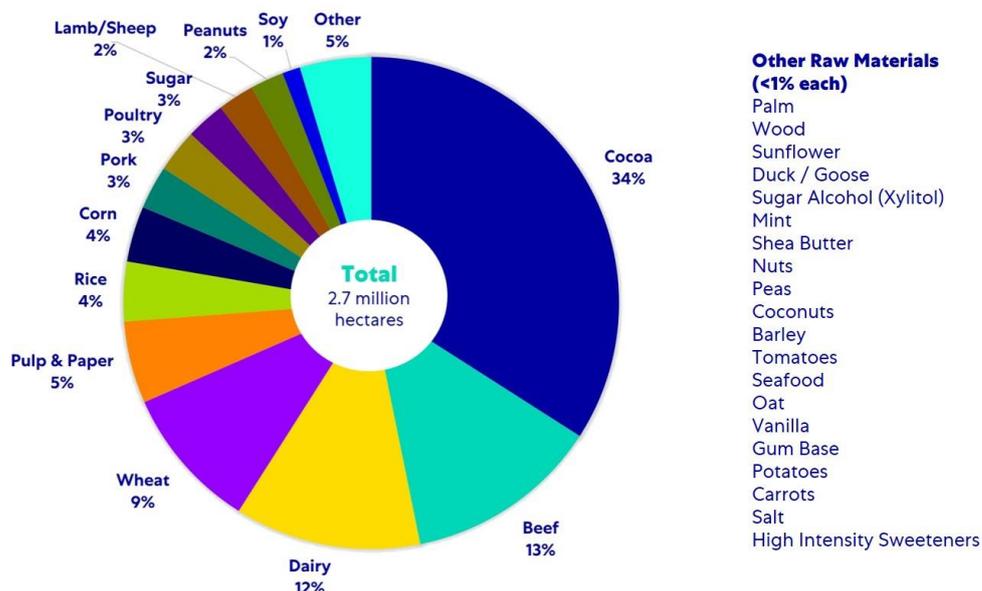
ecosystems. We have set a land budget analogous to the carbon budget used to limit our cumulative GHG emissions, and we will work with suppliers and farmers and design our products to operate within this budget, even as our business grows.

Our approach to land use reinforces our existing [Deforestation Prevention Policy](#) by reducing the expansion of agriculture into forests. Rising demand for agricultural raw materials can drive the conversion of forests and other natural ecosystems into cropland and pastureland. Mars' land use target, and the strategies we employ to reduce our land impact, respond to this phenomenon. Mars is committed to taking direct action on deforestation in our value chains, targeting the raw materials that pose the greatest risk of deforestation (beef, palm oil, pulp and paper, soy, and cocoa). Mars is part of the [Cocoa Forest Initiative](#), a collective effort to end deforestation and restore forests in cocoa supply chains. Cocoa accounts for one-third of our land footprint (see figure below). We also account for GHG emissions from deforestation and land use change in our value chain GHG reduction goal, which is explained in detail in our [Climate Action Position Paper](#).

Freezing our land footprint is a critical first step in our ambition to reduce our land and GHG impacts. Mars is also considering further steps to limit habitat and biodiversity loss caused by land conversion for agriculture in our value chain, and to improve soil health to unlock crop yield potential and provide other environmental and climate change benefits.

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2015 LAND USE BY RAW MATERIAL



Our theory of change

Land use and land-use change are complex issues with many forces affecting the outcomes. Governments have a critical role to play in protecting natural ecosystems, through regulation and enforcement. However, market forces can influence farmers' decision to expand into the

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remaining natural ecosystems, especially in areas where there is weak governance. By setting a target to hold our total land area flat, Mars aims to ensure that our activities do not increase direct or indirect pressures on land areas that are or should be protected.

One of the most important strategies for delivering this goal will be to improve productivity and yields, particularly with smallholders in developing countries whose limited capacity, materials and resources mean their crops often fall far short of their yield potential. Yield gains enable Mars to source more raw materials from the same land area, thereby allowing our business room to grow, while still holding our total land area flat. Those same yield gains can improve farmer incomes and livelihoods.

Mars' land impact is intrinsically linked with our other sustainability priorities. Land use change is a major driver of deforestation and climate change, while agricultural irrigation and fertilizer applications to improve crop yields also has implications for water usage and quality. Land ownership and usage have implications for human rights and farmer incomes.

Short-term actions

To improve productivity and yields and address deforestation for our five focus raw materials, Mars will undertake a portfolio of complementary strategies in three categories:

- **Improve raw material production practices in our value chain.** Work with farmers and suppliers to promote improved agricultural practices; partner with suppliers, civil society and other companies to promote sustainable land use; and support science and technology, such as genomics research, that pinpoints how to produce more resilient and higher yielding crops. For example, in 2010, Mars and partners published a [preliminary version of the cacao genome](#), expediting the development of superior cacao cultivars. In 2016, Mars supported the sequencing of the peanut genome.
- **Change where we source.** For example, by sourcing from origins with higher yields and lower deforestation risk, we can procure the same amount of raw materials with a lower land footprint and less deforestation impact.
- **Replace the raw materials we source.** Replacing a raw material in some products with another raw material that provides equivalent nutritional value but requires less land to grow, or is grown in an area with a lower deforestation risk. One such strategy would be formulating pet food recipes with protein choices that require less land to produce.

Mars bases our land target and action on a robust methodology that employs the latest science. To calculate our land area, Mars utilized a combination of our raw material sourcing data and global peer-reviewed data-sets, such as the World Food Life Cycle Assessment database and [ecoinvent](#). From these data sources, we estimate our total land footprint to be around 2.7 million hectares in 2015.

Because cocoa production accounts for an estimated one-third of Mars' land footprint (see figure above), our actions in cocoa supply chains will have the most significant impact on our land use. Through Mars' [Cocoa for Generations](#) initiative, we are working to improve reliable, verified data on deforestation and land impact from cocoa origins, and work with suppliers and farmers to improve farmer income, prevent deforestation, and protect children in cocoa communities. Accomplishing these goals and reversing the pressure for expanding cocoa

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production into forested areas will make a major contribution to addressing our land impact, tackling deforestation, and growing our business sustainably.

Additionally, we focus actions to prevent deforestation on four other raw materials commonly associated with forest loss: beef, palm oil, pulp and paper, and soy. We have clear [policies and implementation plans](#) for these raw materials. We have traced 90 percent or more of all four raw materials at least to the processing site, so that we can identify the area supplying each site and assess the risk of deforestation occurring there. We are working on the ground with partners including The Forest Trust, ProForest and WRI to identify areas of high deforestation risk, and working with our suppliers to implement plans for improvement.

As we employ strategies to reduce our land impact, we will continue to strengthen our data collection and reporting, applying the best available science and methodologies, to demonstrate our progress.

What's next

Mars will continue to refine and expand our science based approach to limiting our land use impacts. We will work with our suppliers, civil society, and governments to help drive action to reduce deforestation and promote sustainable land use. We recognize that while a significant step forward, focusing our target on land area alone is just an initial step. In time, we will develop comprehensive approaches to include land quality and integrated land use. While the quantity of land used for agriculture is measured against planetary boundaries, it is also important to measure aspects like soil health, soil carbon, and ecosystem services, ultimately evaluating impact on land systems. We will work with thought leaders to improve data and methodologies and apply the best-available science to our strategies. We will also continue to work toward our goal to eliminate deforestation in our focus value chains, explore opportunities for land restoration, and refine our methodology and metrics to most successfully achieve these goals in the future.

Citations

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