The Natural Capital Project and one of the world’s largest consumer goods companies with product
sales in over 190 countries, serving two billion consumers on a daily basis. The
company has more than 400 brands, annual revenues approaching $50 billion and is one of
the largest buyers of agricultural products, including 12% of the
world’s black tea, 13% of tomatoes for processing, and 3% of palm oil.

Unilever has become a global leader in setting and achieving ambitious
environmental sustainability goals. The company has pledged to achieve 100% sustainable
sourcing of agricultural commodities and zero deforestation by 2020 and to
decisive growth from greenhouse gas emissions, water use, and
waste. Fulfilling this ambition requires innovation and new approaches. As part of
this commitment, Unilever is making pioneering changes in product
packaging to reduce waste at every stage of a product’s lifecycle, from
manufacturing to shipping to post-consumer recycling.

Unilever R&D is exploring whether a transition to bioplastic packaging material,
such as sugar cane, corn starches as feedstocks, could improve the
environmental footprint of the company’s products. Given the size of Unilever’s
operations, any shift in its supply chain could have substantial, radiating impacts.
The agricultural expansion required in pursuing any large-scale
(broad-based) biofeedstock strategy would need to be carefully
evaluated and planned in order to simultaneously make progress towards the
company’s sustainability goals.

**PROMISING ADVANCES**

To assess the impacts and trade-offs associated with bioplastic feedstock materials, Unilever and The Natural Capital Project have created
newly integrated databases defining biological and physical conditions in two
continents, and are developing new computer processing methods that can assess changes
in ecosystem services across high-resolution land change scenarios.
The new science and software aim to achieve larger scale, faster resolution data
processing, and ultimately much faster analysis of many scenarios for business
decisions. Unilever is showing how science and software for mapping changes
in ecosystem services might be used to guide R&D strategy, coordinating to a
better understanding of business risks and growth opportunities.

**SOLUTIONS—Science and Tools**

Unilever is partnering with The Natural Capital Project to discover: "Are there
places where bioplastic feedstock expansion could occur with minimal impact
on natural capital, and if so, where?" The collaboration also wants to understand if
there are "threshold" levels in each place, whereby beyond a certain level of expansion,
eggregative impacts to natural capital would dramatically accelerate.

To answer these questions, The Natural Capital Project has been working with
Unilever’s experts to integrate large data sets that capture biological and
physical information about the landscape (such as soil type, slope, geomorphology,
and current vegetation levels) together with land ownership and management
data. These data sets have been used to run scenarios that simulate different
trajectories of land-use change for biofeedstock expansion in Brazil and the U.S.
Results are starting to demonstrate that the pattern and spatial configuration of change to agriculture have significant
implications for the scale of impacts on biodiversity, carbon emissions and water quality. Further testing of early results aim to address questions such as: "How much does the pattern of expansion in a forest rather for carbon storage? Or how much natural habitat in the
landscape needs to be retained to secure water quality?" The approaches
developed in this collaboration have the potential to complement Life Cycle
Assessment (LCA) methods, which do not adequately address patterns of land
use conversion across landscapes.

**SCALING RESULTS**

Like Unilever, many of the world’s leading companies see environmental
stewardship as crucial to their brand, social responsibility, and to securing
long-term profitability; however, they often lack the data, science and technology
to enable them to make optimal long-term decisions about how they both depend on and impact natural capital.

Unilever and The Natural Capital Project hope to leverage the groundbreaking
work on biofeedstock assessment into a tool that enables all companies
to understand the relationships between bio-based commodity demand
and land use changes for any agro-based supply chain.