

LAND USE CHANGE AND THE EUROPEAN BIOFUELS POLICY

The expansion of oilseed feedstocks on lands with high carbon stocks

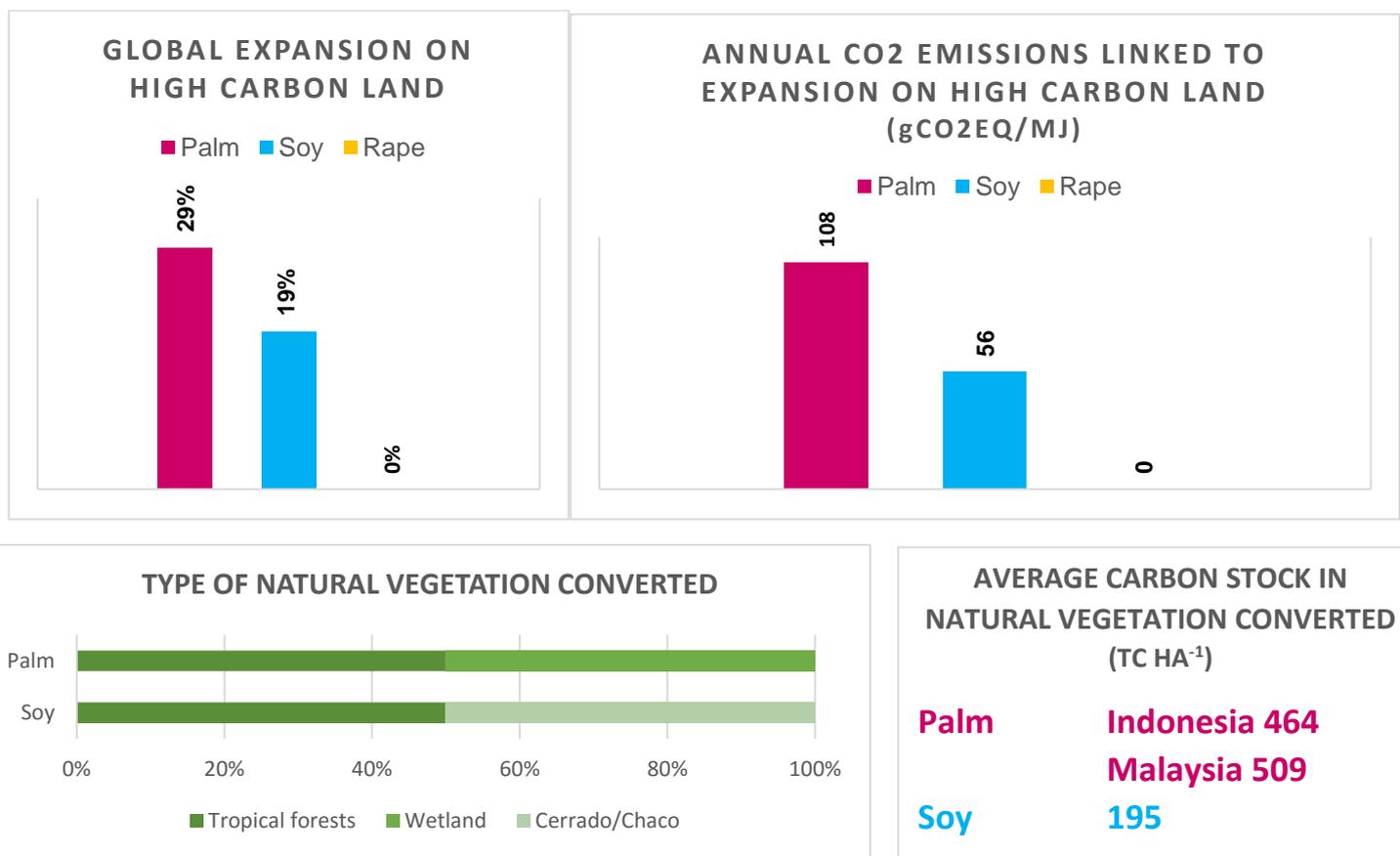
This study by LCAworks was commissioned by Terres Univia and provides an assessment of the expansion of the major biodiesel crops (soybean, oil palm and oilseed rape) from 1990 to the present. It aims to inform the current discussions on biofuels with a high ILUC risk, defined in the Revision of the Renewable Energy Directive as 'bio-liquids and biomass fuels produced from food or feed crops for which a significant expansion of the production area into land with high carbon stock is observed'.

Methodology

The report assesses the land use expansion of soybean, oil palm and oil seed rape at regional, country and global levels. The countries assessed are Argentina, Brazil, Canada, China, Czech Republic, France, Germany, Indonesia, Malaysia, Poland, Romania, the United Kingdom and the United States, as well as the European Union (EU28) as a whole. This study is based on a literature review, including several satellite-based analyses of land use change. The data used is covering the most recent period and where available the value at the lower end to reflect the recent increasing efforts to reduce the conversion of high carbon stock lands.

The study looks at the land use changes, and specifically what part of this land use change occurs on high carbon stock lands – in order to calculate the annual average CO₂ emissions caused by the the conversion of lands and the CO₂ emission intensity in g/MJ.

Main conclusions



Results by feedstocks and countries

SOYBEAN	
<p>ARGENTINA</p> <p>Despite a new forest code in 2007, deforestation continued due to a risk on non-compliance. From 2010 to 2016, 5 Mha of deforestation occurred.</p> <p><u>Approximately 28% of the total expansion of soybean may have occurred over forestlands and Chaco.</u></p>	<p>BRAZIL</p> <p>Significant expansion areas have affected the Amazon and Cerrado.</p> <p>The expansion of soy in the MATOPIBA region was approximately 62% over forestlands (mainly Cerrado).</p> <p><u>Around 17% of the Brazilian soy area has expanded over forestlands in recent years.</u></p>
<p>CHINA</p> <p>Forestlands have been linearly increasing in China in the past decades. <u>The current dynamics do not correlate with the movement of soy onto high carbon stock lands.</u></p>	<p>USA</p> <p>Forestlands have increased slightly, and croplands significantly decreased. <u>The current dynamics do not correlate with the movement of soy onto high carbon stock lands.</u></p>
OIL PALM	
<p>INDONESIA</p> <p>The primary direct driver of deforestation has been logging (often illegal), but oil palm plantations have frequently replaced previously forested land after logging and therefore are associated with the carbon loss. Between 2010 and 2015, there has been a 619 kha expansion on peatlands (20% increase).</p> <p><u>The expansion of oil palm over forestlands in Indonesia has ranged from approximately 18% to 63% in recent years. This study conservatively takes a value of 29%.</u> The majority (94.9%) occurred in secondary forests and 5.1% in primary forests.</p>	<p>MALAYSIA</p> <p>Oil palm has expanded significantly onto croplands and into the land use category 'other'.</p> <p>Literature shows that oil palm establishment has directly driven deforestation in Malaysia, more than in Indonesia.</p> <p><u>The expansion of oil palm over forestlands in Malaysia has ranged from approximately 17% to 39% in recent years. This study conservatively takes an estimate of 19% but it may be underestimated,</u> due to the uncertainties related the definition of "other land".</p>
RAPESEED	
<p>All the assessed countries presented net afforestation / reforestation in the past decade, apart from Canada, which presented a small net deforestation area.</p> <p><u>There is no apparent correlation between the recent expansion of oilseed rape and forest dynamics.</u></p>	