The Economics of Ecosystems & Biodiversity

TEEB for Agriculture & Food

information brochure

Food production systems produce 2.800 calories per person per day, enough to feed the world population[1]

Smallholder farmers represent over 500 million of the world's 570 million farms[2]

Project statement

This study will demonstrate that the economic environment in which farmers operate is distorted by significant externalities, both negative and positive, and a lack of awareness of dependency on natural capital, by providing a comprehensive economic evaluation of the 'eco-agri-food' systems complex.

Around 805 million people in the world are hungry, the vast majority of which (98 per cent) live in developing countries[8]

Agriculture employs 1 in 3 people of the world's economically active labour force, or about 1.3 billion people[3]

Food production accounts for 70 per cent of total biodiversity loss[9]

Agriculture and food systems use 70 per cent of the water resources we extract[4]

For the 70 per cent of the world's poor living in rural areas, agriculture is the primary source of income and employment[5]

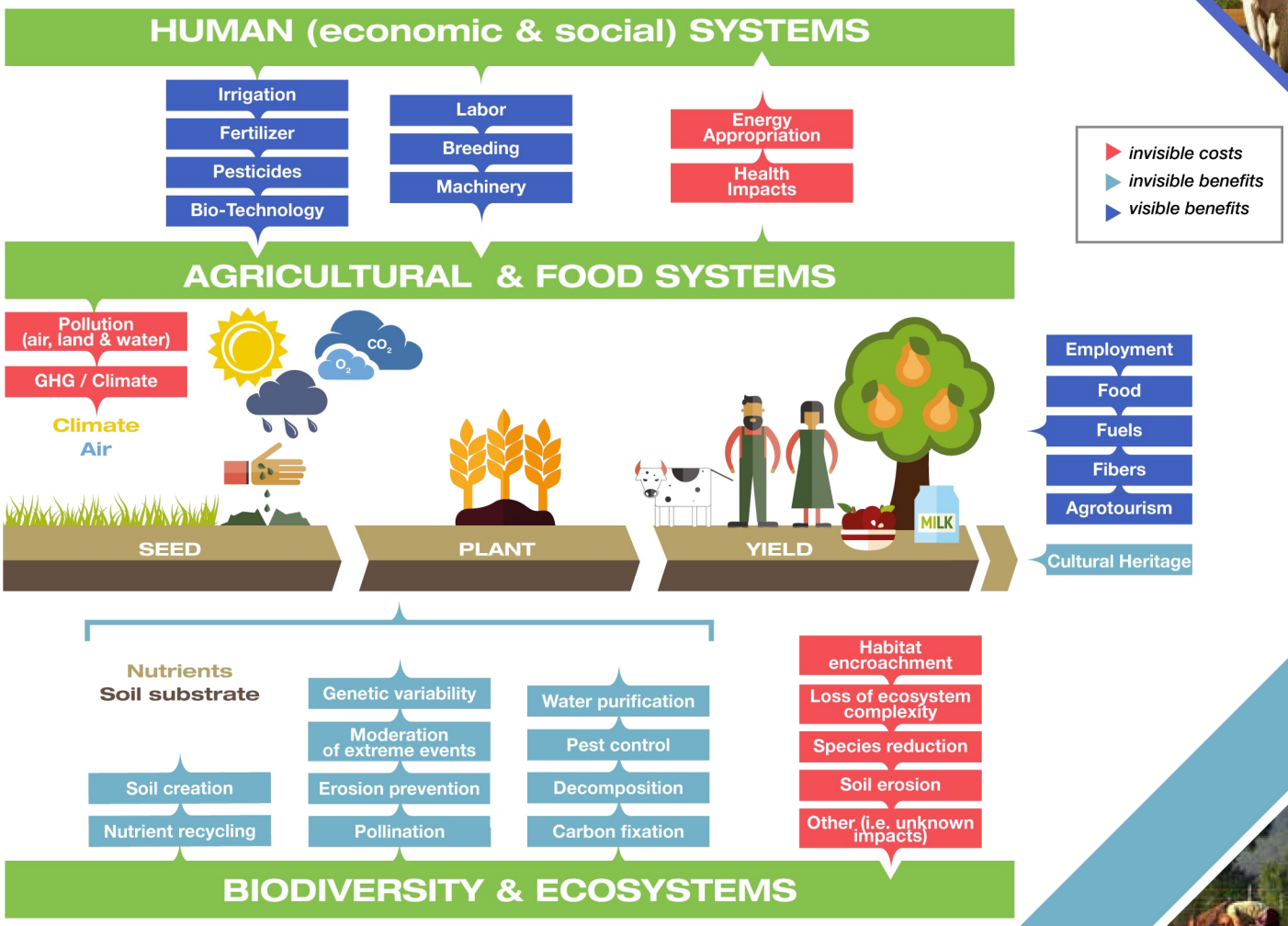
Crop and livestock farming produce between five and six billion tons of CO_2 equivalent in greenhouse gas (GHG) emissions each year[7]

Eighty per cent of agricultural lands have replaced tropical forests since the 1980s[10]

In much of the developing world, smallholder farmers produce over 80 per cent of the food consumed[6]

[1] FAO (2014) 'Food security indicators', accessed April 2015.
[2] FAO (2014) State of Food and Agriculture (SOFA) 2014, Rome, Italy.
[3] FAOSTAT 2013, accessed April 2015.
[4] FAO (2011), FAO in the 21st century: ensuring food security in a changing world, Rome, Italy.
[5] World Bank, 'Agriculture and Rural Development Data 2014', accessed April 2015.
[6] IFAD/UNEP (2013), Smallholders, food security and the environment, Rome, Italy.
[7] FAO (2014), Agriculture, Forestry and Other Land Use Emissions by Sources and Removals by Sinks, Rome, Italy.
[8] FAO, IFAD and WFP (2014), The State of Food Insecurity in the World (SOFI) 2014, Rome, Italy.
[9] PBL Netherlands Environmental Assessment Agency (2014), 'How sectors can contribute to sustainable use and conservation of biodiversity', CBD Technical Series No. 79, cited in CBD (2014) Global Biodiversity Outlook 4, Montreal.
[10] Gibbs, H. et al (2010), 'Tropical forests were the primary sources of new agricultural land in the 1980s and 1990s', Proceedings of the National Academy of Sciences, 107: 16732–16737.

The ‘eco-agri-food’ systems complex



The above schematic provides a unifying point of reference for the overall study. At the centre of this complex are ‘agriculture and food systems’, which are inextricably linked to ‘human (economic and social)’ systems and biodiversity and ecosystems through their impacts and dependencies.

Alexander MÜLLER — Study leader

‘Agriculture is arguably the highest policy priority on today’s global political agenda, in recognition of its widespread impacts on food security, employment, climate change, human health, and severe environmental degradation. This study will build on the earlier successes of TEEB by drilling into the heart of these issues and exploring the latest evidence to paint a global picture of our agricultural and food systems. This body of work will provide a detailed look at their dependency on ecosystems and biodiversity, their impacts on human and ecological well-being and health, and the underappreciated role of small-scale farmers. I truly see this as being one of the most timely and important research initiatives in the field of sustainable agriculture, and am honoured to be a part of it.’

Study Structure

INTERIM REPORT

To set the stage and provide new and compelling evidence from both primary research and meta-analyses, including findings from a number of 'feeder' studies on 'externalities-heavy' sectors including livestock, rice and palm oil.

SCIENTIFIC & ECONOMIC FOUNDATIONS REPORT

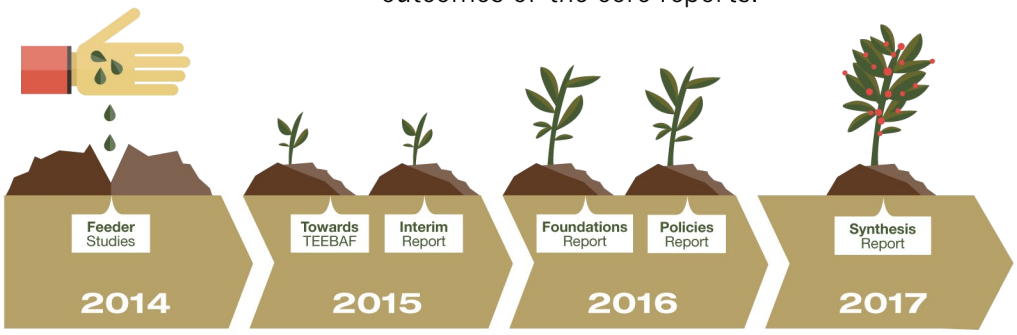
To address the core theoretical issues and controversies underpinning the evaluation of the nexus between the agri-food sector, biodiversity and ecosystem services and externalities from agriculture on a global scale.

POLICIES, PRODUCTION & CONSUMPTION REPORT

To focus on the evaluation of different agro-ecological production systems in different socio-economic contexts, taking into consideration food policies, including those targeting food waste and food safety along the entire food chain, from production to final disposal, and food quality in nutritional terms.

SYNTHESIS REPORT

To produce clearly articulated key messages and recommendations arising from the findings and outcomes of the core reports.



Study Timeline

The Economics of Ecosystems & Biodiversity

The Economics of Ecosystems and Biodiversity (TEEB) is a global initiative focused on "making nature's values visible". Its principal objective is to mainstream the values of biodiversity and ecosystem services into decision-making at all levels. It aims to achieve this goal by following a structured approach to valuation that can help decision-makers to *recognize* the wide range of benefits provided by ecosystems and biodiversity, *demonstrate* their values in economic terms and, where *appropriate*, capture those values in decision-making.

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TEBB is hosted by the United Nations Environment Programme (UNEP) and «TEEB for Agriculture & Food» is supported by the European Commission and the following members from the Global Alliance for the Future of Food: Gordon & Betty Moore Foundation, KR Foundation, The Christensen Fund and V. Kann Rasmussen Foundation.