

Natural capital is the stock of renewable & non-renewable resources (e.g. plants, land, air, water). It is from natural capital that humans derive a wide range of services, often called ecosystem services. When accounting for natural capital a monetary value is assigned to a flow, as either a cost(-\$) or benefit (+\$). The natural capital cost per tonne of products is calculated.

We have applied a Social Cost of Carbon (SCC) of US\$ 90/tCO₂e to incorporate the full global externalities costs (Source: Mid-point result from Massachusetts Institute of Technology, Pindyck, R S. 2019, The social cost of carbon revisited). The SCC is usually estimated as the net present value of climate change impacts over the next 100 years of one additional tonne of carbon emitted to the atmosphere today. It is the marginal global damage costs of carbon emissions (Source: Paul Watkiss Associates, UK). The SCC measures the full cost of an incremental unit of carbon (or GHG equivalent) emitted now, calculating the full cost of the damage it imposes over the whole of its time in the atmosphere. The SCC matters because it signals what society should, in theory, be willing to pay now to avoid the future damage caused by incremental carbon emissions.

Monetary values of Ecosystem Services (ESS) are derived from The Economics of Ecosystems and Biodiversity (TEEB) database and published papers. All major categories of ESS as per Millennium Ecosystem Assessment (MEA) - Provisioning, Regulating, Cultural and Supporting services are included in calculations. Ecosystem Services cost is calculated based on annualised historical tree loss area in the FG radius. In the calculations, tree loss area proportionate to FG's farm area is considered (instead of tree loss area in the entire radius). With Polygon mapping of farms we should be able to get better estimate of historical tree loss area in a FG's farm area. By historical we mean over the past 20 years. It is important to note, we cannot have certainty for causality (i.e. is deforestation actually caused by our farmers). It can be caused by other events as well e.g. fires, illegal logging, mining. Here we are locating and analysing the farm area over the years and not whether our farmers have caused the deforestation.

For water-withdrawn from known watersheds, three broad impact areas are considered a) Negative ecosystem quality impact from reduced water availability; b) Negative human health impact from reduced water availability; and c) Replacement cost. For calculating NC cost of embodied or hidden water (e.g. water used for generating electricity used in processing facilities or Water used in fertiliser production used in Agri etc.) we have used only Replacement cost (i.e. cost of desalination) of USD 1.90/m³.