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Growing money from trees

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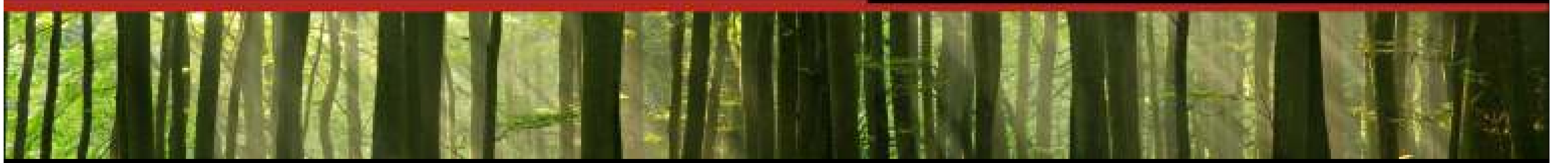

Why?

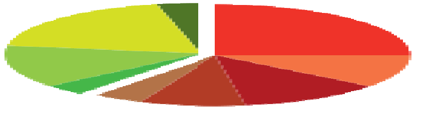

Figure 1: Global greenhouse gas emissions in 2000, by source

Sector	$MtCO_2$		%	
Energy		24,722.3		65.6
Electricity & Heat	10,275.9		25.2	
Manufacturing & Construction	4,317.7		10.6	
Transportation	4,241.9		11.0	
Other Fuel Combustion	3,555.5		9.0	
Fugitive Emissions	1,527.3		4.0	
Industrial Processes		1,406.3		3.4
Agriculture		5,603.2		13.7
Land Use Change & Forestry		7,618.6		13.7
Waste		1,465.7		3.6

The importance of forests

Forests purify our air, preserve watersheds and improve water quality and quantity, stabilize soil and prevent erosion, provide us with natural resources such as timber products and medicinal plants, and are home to many of the world's most endangered wildlife species. In addition, an estimated 1.6 billion people worldwide rely on forests for their livelihoods, with 60 million indigenous people depending on forests for their subsistence.

Another critically important function of forests increasingly and widely acknowledged now is that they help to protect the planet from climate change by absorbing carbon dioxide (CO_2), a major greenhouse gas.

Forests as carbon storehouses

It is now widely recognized that rising concentrations of so-called greenhouse gases (GHGs) are driving changes in the Earth's climate patterns, resulting in catastrophic weather events, such as hurricanes, heat waves, droughts and floods, and threatening plant and animal life.

Forests play a critical role in protecting the Earth from climate change and regulating climate patterns, as the trees – trunks, branches and roots – and even soil absorb and store CO_2, providing a natural reservoir for this GHG. In fact, the Earth's vegetation and soils currently contain the equivalent of approximately 7500 Gigatonnes (Gt) of CO_2 – that is more carbon than is contained in all the remaining oil stocks on the planet and more than double the total amount of carbon currently in the atmosphere.

However, when forests are destroyed or degraded by activities such as logging and conversion of forests to agricultural land, they release large quantities of CO_2 and other GHGs, and become a significant (and, for some developing countries, a primary) source of GHG emissions and contributor to climate change.

Deforestation and climate change

Estimates on the contribution of deforestation to carbon emissions vary, but are commonly held to be around 18 per cent of global emissions – greater than those emissions produced by the whole of the global transport sector (Figure 1). The bulk of emissions from deforestation arises when land is converted to agricultural production, particularly if forests are first cleared with burning.

The potential for forests to become even greater sources of carbon emissions due to deforestation and degradation is massive. Examples can be found from forest areas across the globe, including Russia's boreal forest, the forests of the Congo Basin, and Sumatra's peat swamp forests.

Deforestation is continuing at an alarming rate. Once distributed over half the planet, forests now cover only a quarter of its land surface – and forest loss, particularly in the tropics, is continuing at an alarming rate. Figures released by the UN Food and Agriculture Organisation (FAO) in 2005 indicate that the rate of natural tropical forest loss is about 13 million hectares each year – equivalent to 36 football fields a minute. Beyond the tropics, there has been a significant loss of old-growth forests and the replacement of natural forests and woodlands with single-species plantations that provide few of the environmental, ecological and social benefits of native forests.

While afforestation and reforestation are important, and helpful for supporting reduced emissions in many

Forests and the Carbon Cycle

A natural carbon dioxide cycle keeps the amount of this greenhouse gas in our atmosphere in balance. Decaying plants and animal respiration release natural CO_2 into the atmosphere, where it stays for about 100 years. It is removed from the atmosphere by photosynthesis in plants and by dissolution in water (for instance, in the oceans).

The amount of naturally produced CO_2 is almost perfectly balanced by the amount naturally removed. But changes, no matter how small, can upset this equilibrium.

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REDD and REDD+

Convention on Biological Diversity

UN-REDD PROGRAMME

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REDD and REDD+

"We recognize the crucial role of reducing emission from deforestation and forest degradation (REDD) and the need to enhance removals of greenhouse gas emissions by forests..."

~ The Copenhagen Accord, Article 6


The World Bank
GREEN BOND

Forest Bonds

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