Update On the World’s Diminishing Resources
Part I: Deforestation
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Introduction

The world is at present witnessing an accelerating pace of our use of its precious resources, which have existed over the past millions of years. The main reasons are twofold:

a) The pressure of human encroachment for the gain of agriculture, food and infrastructure required by the growing human population.

b) The effect of the forever increasing global warming year by year, which is both a cause and consequence of diminishing resources.

In the end it all comes to the fact the we are overpopulated at 7.3 billion which is projected to rise to 9.2 billion by 2050. What human society is doing at present is unsustainable and as a consequence we are mindlessly using up our resources leaving little for our future generations. Is it time we wake up and reverse our course?

In this series of articles, I shall discuss some of the major losses we have caused, some of which are irreversible while others may be fixed if we have the determination. Here in Part I, I will consider deforestation, before continuing on to discuss biodiversity in Part II and melting ice and sea level rise in Part III.
Deforestation

Current deforestation trends point toward catastrophic and irreversible losses of biodiversity and runaway climate change. With better governance and smarter land use, it would be possible to meet global demand for food and forest products without any further loss of forests between now and 2030, but urgent action is needed.

Forests play a critical role in mitigating climate change because they act as a carbon sink—soaking up carbon dioxide that would otherwise be free in the atmosphere and contribute to ongoing changes in climate patterns. Deforestation undermines this important carbon sink function. It is estimated that 15% of all greenhouse gas emissions are the result of deforestation.

Forests cover 31% of the land area on our planet, though the World Resource Institute reports that only about 15% of the forests remain intact. The rest has been cleared, degraded or is in fragments, wiping out ecosystems and displacing indigenous communities. Forests produce vital oxygen and provide homes for people and wildlife. Many of the world’s most threatened and endangered animals live in forests, and 1.6 billion people, or more than one-quarter of the world’s human population, rely directly on forests for their livelihoods, with an even greater number using forests as a source of food, freshwater, clothing, traditional medicine, and shelter.¹

Deforestation is one of the single biggest phenomenon contributing to climate change. The most feasible solution to deforestation is to carefully manage forest resources by eliminating clear-cutting, to make sure forest environments remain intact. The cutting that does occur should be balanced by planting young trees to replace older trees felled. The number of new tree plantations is growing each year, but their total still equals a tiny fraction of the Earth’s forested land.

Between 2000 and 2012, 2.3 million square kilometers of forests around the world were cut down. Some 119,000-150,000 square kilometers of forest are lost each year. As a result of deforestation, only 6.2 million square kilometers remain of the original 16 million square kilometres of forest that formerly covered the planet. Deforestation comes in many forms, including fires; clear-cutting for agriculture, ranching, and development; unsustainable logging for timber; and degradation due to climate change. No matter the form deforestation impacts people’s livelihoods and threatens a wide range of plant and animal species.

Although subsistence activities have dominated agriculture-driven deforestation in the tropics to date, large-scale commercial activities are playing an increasingly significant role. In the Amazon, industrial-scale cattle ranching and soybean production for world markets are increasingly important causes of deforestation. In Indonesia, the conversion of tropical forest to

commercial palm tree plantations to produce bio-fuels for export is a major cause of deforestation on Borneo and Sumatra.

The main culprits for this clearing of land are the big multinational agricultural companies in particular Cargill, which is responding to the high demand of soya beans from China. Technology, including satellite and drones, are improving our ability to track the whole chain from clearing to storage and shipment and finally to end suppliers and users.

The Brazilian Amazon is the world’s largest rain forest. The “save the rainforest’ movement forced changes that slowed down deforestation across the Amazon in the decades that followed. In 2006, Brazil issued a moratorium on forest clearing for soy production and between 2006 and 2015 Brazil has reduced deforestation by almost two-thirds, according to estimates by Mongabay.org. However, activity is now roaring back again. In 2015 deforestation rose for the first in nearly a decade to nearly 2 million acres (1 acre = 4047 sq. meters = approximately 64 meters x 64 meters) from August 2015 to July 2016. This is to be compared with 1.5 million acres from the year before and 1.2 million acres before that, according to estimates by Brazil’s National Institute for Space Research.

Brazil’s Ministry of the Environment is very uncomfortable with the image of the rise in deforestation. However, at the same time the government has cut its funding by half amid budget problems. The multinationals like Cargill are also trying to improve their images. Over in Bolivia, the situation is worse because there are fewer restrictions on land clearance. There about 865,000 acres have been deforested annually for agriculture since 2011. It is driven by

Figure 1. The following is a series of ariel photos by the New York Times for the area delineated in a little square in the map of Brazil on the right most picture.
food security and the country has declared that it expects to clear almost 14 million more acres of forest by 2025 to convert into farmland.

The good news is that, spurred by the action of the UN at the Climate Summit in 2014, a New York Declaration on Forests has been put forth. This is a non-legally binding political declaration that grew out of dialogue among governments, companies and civil society. For the first time, world leaders endorsed a global timeline to cut natural forest loss in half by 2020, and strive to end it by 2030. The Declaration also calls for restoring forests and croplands of an area larger than India. Meeting these goals would remove between 4.5 and 8.8 billion tons of carbon pollution every year—about as much as the current emissions of the United States. The Declaration is endorsed by dozens of governments, the world’s biggest companies, and more than 50 influential civil society and indigenous organizations.

The Declaration will target eliminating deforestation for agricultural land producing commodities like palm oil, soy and beef products by 2020. With the original deadline, experts believed that the New York Declaration of Forests would require companies to immediately start making their sourcing more sustainable. The deadline has since been moved to 2030, but even before the New York Declaration, Cargill has made significant efforts to buy palm oil sources only from land not linked to fresh deforestation. *I suppose it is the least they can do!*

To reach this target the world needs to annually restore 57 million acres. But at the moment the world is still deforesting and degrading 37 million acres annually.

And if we are to wait till 2030, there will be no forest left!

**Desertification in Northern China**

Lack of forests in the past and climate change has led to the advance of the Gobi Desert. Since 1975, China has lost 54,400 sq. km of forest and the desert is currently advancing at a rate of more than 3470 sq. km per year. In 2001, it was estimated that full-fledged deserts lie just 160 km from Beijing and are advancing at a rate towards Beijing of about 3 km a year. This has caused violent sandstorms in Beijing in 2017 and the government is undertaking a reforestation project being called the Great Green Wall.

**How to Re-green the Forests**

In 2015, the World Resource Institute published six steps to re-greening success. They are:

1. Identify and analyze existing re-greening successes.
2. Build a grassroots movement for re-greening.
3. Address policy and legal issues to enable conditions for re-greening.
4. Develop and implement a communications strategy.
5. Develop or strengthen agroforestry value chains.
6. Expand research activities.
Beginning with the first item, three good examples of re-greening successes come to mind:

(1) In Niger, farmers have built new agroforestry systems on 50,000 sq. kilometers in just 20 years, which comes to be on average 2500 sq. kilometers annually. External funding costs were below $42000 per sq. kilometer. The main asset is that small farmers themselves protected and managed the natural regeneration of woody species of trees and shrubs on their farmland and by doing so they added 200 million new trees without costly external assistance for tree-planting. These on-farm trees help increase crop yields and produce fodder for animals as well.

(2) Northern Ethiopia is now greener than it has ever been during the last 145 years. Here local communities organized themselves to control livestock grazing and wood cutting on degraded plateaus and mountain slopes. This allowed vegetation to regenerate naturally. Their efforts were complemented with community labor invested in rainwater harvesting alongside downstream development of irrigated agriculture. Through these combined efforts, landscapes have been completely transformed by grassroots restoration. This has helped small farmers and their communities diversify and increase crop production, secure water supplies, and build resilience to drought.

(3) Costa Rica provides another example of a country that has overcome a history of deforestation largely through assisted natural regeneration. Policy reforms that reduced subsidies to farmers engaged in converting forests to pastures for livestock production, along with the recognition in Costa Rica of the economic benefits of forest restoration, helped to drive changes in land use. As forests have been restored, ecotourism has flourished, which now provides significant economic incomes.

These three examples show the importance of smallholder farmers who are often the key private investors in tree-based restoration. Greater success in achieving ambitious forest restoration targets may well depend on mobilizing a “restoration movement” of millions of smallholders in ways that both enable lower-cost restoration and encourages behavior changes that address root causes.

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