

Rio+20 - How can Ecological Footprint Contribute to Green Economy in Africa?

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Introduction

Fundamentally we all depend on nature, the ecological infrastructure of the planet that provides the flow of goods and services upon which our livelihoods and economies are built. Yet Africa's ecosystems are changing faster than ever before through the combined impact of global and local pressures. Loss of ecosystem services is compromising future security, health and well-being, and effects are being borne disproportionately by the poor. Transitioning to a green economy involves maintaining our natural capital so it provides the ecosystem services, such as food, water, and livelihoods, we all depend on and being more prepared for climate change.

What is an Ecological Footprint?

The **Ecological Footprint (EF)** measures the amount of biologically productive land and water area required to produce all the resources an individual, population, or activity consumes and to absorb the waste they generate, given prevailing technology and resource management practices. This area can be compared with biological capacity or **biocapacity**, the amount of productive area that is available to generate these resources and to absorb the waste.

The ecological footprint introduces the concept of a **footprint of production** and explores the question, is the level of production in Africa leading to an **ecological deficit**? The footprint of production is the sum of the footprints of all resources harvested within a country's geographical borders. The footprint of production allows us to look at the demand placed on a nation's biocapacity regardless of whether the products are consumed within that nation or in other parts of the world as a result of trade. It provides an indication of the pressures being exerted by humans on the ecosystems in a given country. The relationship between a footprint of production and biocapacity is a reflection of the pressures being exerted on a country's natural systems. The situation can be considered unsustainable if the footprint exceeds biocapacity, i.e. an ecological deficit.

The ecological footprint related to biocapacity, a measure of the earth's bioproductivity, tells us whether we are living within the earth's means. The ecological footprint shows humanity's competing demands on the biosphere by comparing the renewable resources people are consuming to the regenerative capacity of the planet — or biocapacity. Ecological footprints vary enormously amongst countries and reflect different consumption patterns and lifestyles. If everybody on the planet lived the lifestyle of the average American citizen, by 2008, we would have needed four planets to support the global population.

Is Africa's ecological footprint on the right path?

In 2008, the total productive area, or biocapacity, of the planet was 12.0 billion gha (global hectares) or 1.8 gha per capita. **Humanity had an ecological footprint of 18.2 billion gha**, equivalent to 2.7 gha per

capita. This overshoot of approximately 50 percent means that in 2008, we used the equivalent of 1.5 earths to support our consumption, or in other words, it would have taken the earth approximately a year and a half to regenerate the resources used by humanity in that year. Much of the pressure on ecosystems can be traced to humanity’s voracious demand for goods and services, which is now exceeding the planet’s capacity to **regenerate resources** and absorb the wastes we produce. Humanity’s demand on the world’s living resources, its ecological footprint, has more than doubled since 1961 and now overshoots the planet’s regenerative capacity – or biocapacity - by about fifty percent (Fig.1).

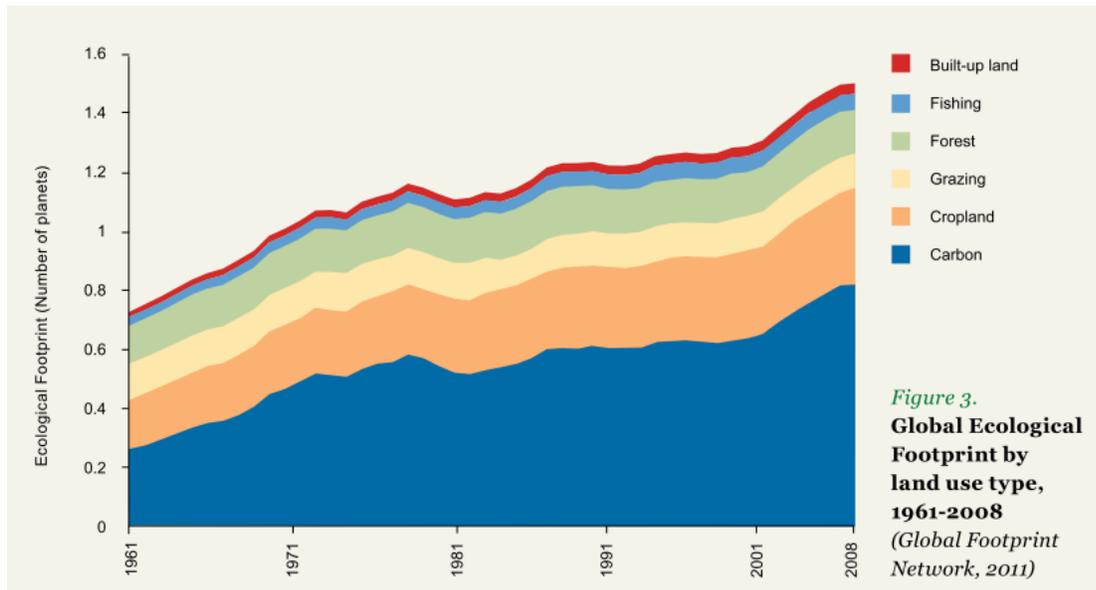


Figure 3.
Global Ecological Footprint by land use type, 1961-2008
 (Global Footprint Network, 2011)

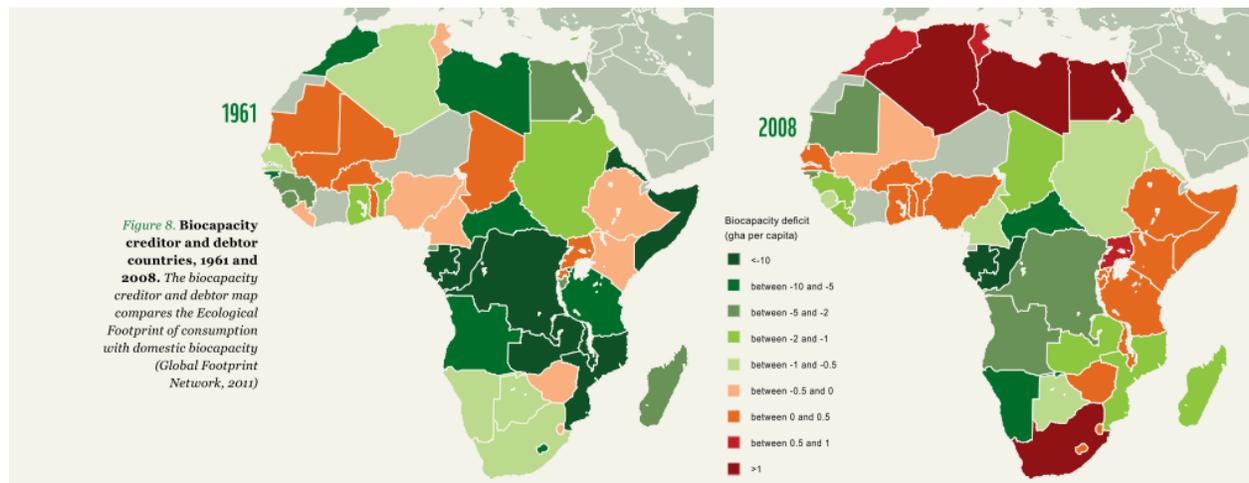
Fig. 1: Map showing the relationship between footprint of production and biocapacity. Countries in red are in ‘ecological deficit’

Africa comprises 2,960 million hectares of land, 1,815 million of which are counted as bioproductive area in the 2008 National Footprint Accounts. Of this bioproductive land area, 627 million hectares are forested, 246 million are cropland, and 911 million are grasslands. Infrastructure occupies 31 million hectares. Africa also has 115 million hectares of continental shelf area and 67 million hectares of inland water. Taking into account differences between average African yields and corresponding global yields for cropland, grazing land, forest, and fisheries, Africa’s total biocapacity is 1,423 million gha. The Living Planet Index reflects the state of the planet’s ecosystems. Published for the first time in the 2012 Living Planet Report, the Africa Living Planet Index (Fig. 2) shows a reduction of 38 per cent in animal populations over the 37 year period between 1970 and 2007.

The ecological footprint of all **African countries increased by 240 per cent between 1961 and 2008** (Fig. 2) as a result of growing populations as well as increased per capita consumption in a minority of

countries. The average per capita footprint in Africa in 2008 is now rapidly approaching the available per capita biocapacity within Africa's borders of 1.5 gha.

Figure 2: Ecological creditor and debtor countries, 1961 and 2008. The ecological creditor and debtor map above compares the ecological footprint of consumption with domestic biocapacity.



Why should we care?

Africa has choices in terms of its development pathways. Pursuing a more sustainable approach to development than those taken in some other parts of the world can generate benefits in terms of environmental security, human well-being and increased competitiveness. The choices made today about infrastructure, energy and food production will shape our opportunities and options far into the future.

It is becoming evident that over exploitation of natural resources can lead to the depletion of natural capital and a decline in ecosystem services, eventually slowing economic development and human well-being. In response to the on-going decline of the global environment, the “green economy” is now evolving from being just an ideal, to an approach that is gathering more and more support from countries worldwide. **The green economy is moving to take centre stage at the 2012 Rio +20 United Nations Conference on Sustainable Development (UNCSD).**

Transitioning to a green economy involves maintaining our natural capital, so it provides the ecosystem services we all depend on. These services provide food, water, energy and our livelihoods and help us be more prepared for climate change. In Africa the sustainable use of natural resources needs to be mainstreamed in economic development. The timing is now right for making green economies a reality, and we have seen excellent initiatives started both by individual countries and by smaller country groups. Making economies more efficient in terms of how they use resources and invest in new technologies and innovation will help these initiatives further. **With Africa hosting 15 percent of the planet's population and 13 percent of the planet's biological capacity,** its governments, business

leaders and investors need to show ever greater leadership if the continent's natural resources are to be used sustainably.

The 2012 Africa Ecological Footprint

Published and launched for the first time on the continent, this edition of Africa Ecological Footprint Report focuses on green infrastructure for Africa's ecological security. **The report is a joint publication between the African Development Bank (AfDB) and the World Wildlife Fund for Nature (WWF).** Specifically, it sets out some of the challenges associated with lifting Africa's growing population out of poverty and ensuring their well-being can be sustained in a resource constrained world. It analyses the current demand for land and water resources in Africa. It argues that Africa is still endowed with a lot of bio-capacity, although witnessing a decline in biodiversity and under major stresses because of significant drivers such as trade, climate change, and unsustainable development decisions. This report presents examples of solutions that promote the creation of wealth and alleviation of poverty through more sustainable management of the natural capital of the continent. These strategies focus on:

- ✓ reducing the negative effect of human consumption on natural capital;
- ✓ maintaining natural capital with additional and targeted investment; and
- ✓ highlighting the socio-economic benefits from investing in natural capital and natural resources management.

The 2012 report raise awareness on ecosystem-based approaches to development as an imperative to crafting a sustainable future for Africa nations. It further contributes to the AfDB's current refining of its strategic approach towards green and inclusive growth and natural resource management policies.

The report provides headway into challenges and issues that have been ignored by mainstream development and environmental planning in Africa. It takes stock of Africa's current and future demand for ecological resources as compared to the region's and the planet's supply. It initiates the process of addressing the sustainability challenge by exploring the implications of our current and proposed future development paths for regional and global ecosystems and makes policy recommendations on green economy pathways.

Core messages:

- ✓ The world today lives in a resource-constrained world – and many countries are living beyond their means.
- ✓ Africa, as a whole, is not yet in biocapacity deficit – where its ecological footprint exceeds available biocapacity – but continuing with business as usual would lead it into deficit within a generation.
- ✓ Ecosystem services on which we depend are being degraded as a result of human pressures on the environment linked to our demand for natural resources. Consequently, we are losing these services, increasing our vulnerability to economic and environmental shocks and stifling development.

- ✓ Africa has choices in terms of its development pathways. Pursuing a more sustainable approach to development than those taken in some other parts of the world can generate benefits in terms of environmental security, human well-being and increased competitiveness.

What's at stake?

Ecosystem services underpin all aspects of our lives and economies yet are often taken for granted. At the same time the Millennium Ecosystem Assessment found that “over the past 50 years, humans have changed ecosystems more rapidly and extensively than in any comparable period of time in human history, largely to meet rapidly growing demands for food, fresh water, timber, fiber, and fuel”. The loss of services derived from ecosystems has been identified as a significant barrier to the achievement of the Millennium Development Goals to reduce poverty, hunger, and disease.

What is the connection with Rio+20?

The 2012 Ecological Footprint report was launched on the continent at the Bank's Annual Meeting in Arusha, Tanzania and globally at Rio+20, in Rio de Janeiro, Brazil June.

As we all know, the Rio+20 conference will mark the 40th anniversary of the Stockholm United Nations Conference on the Human Environment (Stockholm Convention); 25th anniversary of the Brundtland report; 20th anniversary of the United Nations Conference on Environment and Development, the outcome of which was Agenda 21; and the 10th anniversary of the World Summit on Sustainable Development, referred to as the Johannesburg Summit. The principal objectives of the Conference are to secure renewed political commitment to sustainable development, assess the progress and implementation gaps in meeting already agreed upon commitments, and address new and emerging challenges. The Rio+20 Conference is consequently seen as a much needed platform to address, in a coherent and coordinated manner, the emerging challenges across world regions associated with the implementation of sustainable development.

The AfDB and WWF launch of the report and the video that illustrates the report aims at demonstrating that a green development path is possible for Africa if we can chart development paths that invest in green infrastructure for sustainable development in Africa and in other countries that derive resources from Africa.

To what gain?

- i. To raise awareness on the concept of “ecological infrastructure” – and to demonstrate that new “green” investment in the protection, maintenance and enhancement of ecological infrastructure is essential for sustainable growth;
- ii. To demonstrate that the ecological footprint of Africa coupled with a deficient level of investment in ecological infrastructure does or could contribute to the potential breach of planetary boundaries;

- iii. To show the implications of breaching planetary boundaries, as well as the opportunities for mitigation and increasing ecosystem resilience through investment in environmental infrastructure;
- iv. To provide policy- and decision-makers with compelling and logical cases for further investment in protecting, maintaining and enhancing environmental infrastructure such as sustainable fisheries, well-managed forests, protected areas, biodiversity protection, sustainable agriculture and sustainable use of freshwater resources; and
- v. To raise awareness for ecosystem-based approaches to development as an imperative to crafting a sustainable future for African nations and further contribute to the Bank's current refining of its strategic approach towards green and inclusive growth and natural resource management policies.

Potential contribution to the outcome of UNCSD/Rio+20

The Ecological Footprint launch and roundtable discussion will contribute to the Rio+20 outcomes by raising awareness around the following imperatives:

- Invest in Africa's ecological infrastructure;
- Halt and reverse forest loss;
- Manage water as the crucial link in the water, energy and food security nexus;
- Enable sustainable production and access to markets;
- Put renewable energy at the heart of a green economy;
- Incorporate environmental performance and resource scarcity in measures of societal progress;
- Use full accounting to capture social and environmental externalities;
- Develop and implement an incentive framework to improve environmental performance.

Fact sheet of Africa Ecological Footprint

- 1 Africa's total biocapacity is **1,423 million gha**.
- 2 Nations with high per capita biocapacity such as Congo and Central African Republic tend to be dominated by forest areas.
- 3 **Gabon** – the continent leader with high per capita biocapacity – also has major fishing and grazing lands.
- 4 Grazing land makes a significant contribution in other biocapacity leaders like **Mauritania** and Botswana while fishing lands predominate in **Namibia**.
- 5 At the other end of the scale countries with lowest per capita biocapacity are often relatively densely populated and/or have productivity affected by unfavourable climate conditions, particularly low year-round rainfall.
- 6 Eight countries - **Burundi, Rwanda, Kenya, Mauritius, Algeria, Ethiopia, Egypt, and Libya** have available biocapacity per capita within their national borders of less than 1.2 gha per capita.
- 7 The Ecological Footprint of all African countries increased by **149% between 1961 and 2008**.