The Ecological Footprint

Global and Asian Perspectives

Global Footprint Network
Advancing the Science of Sustainability

LLDA

Climate Change Commission Philippines

Office of the Presidential Adviser for Environmental Protection

Metropolitan Manila Development Authority
MMDA
Marangal Matapat Disiplinado Ako.

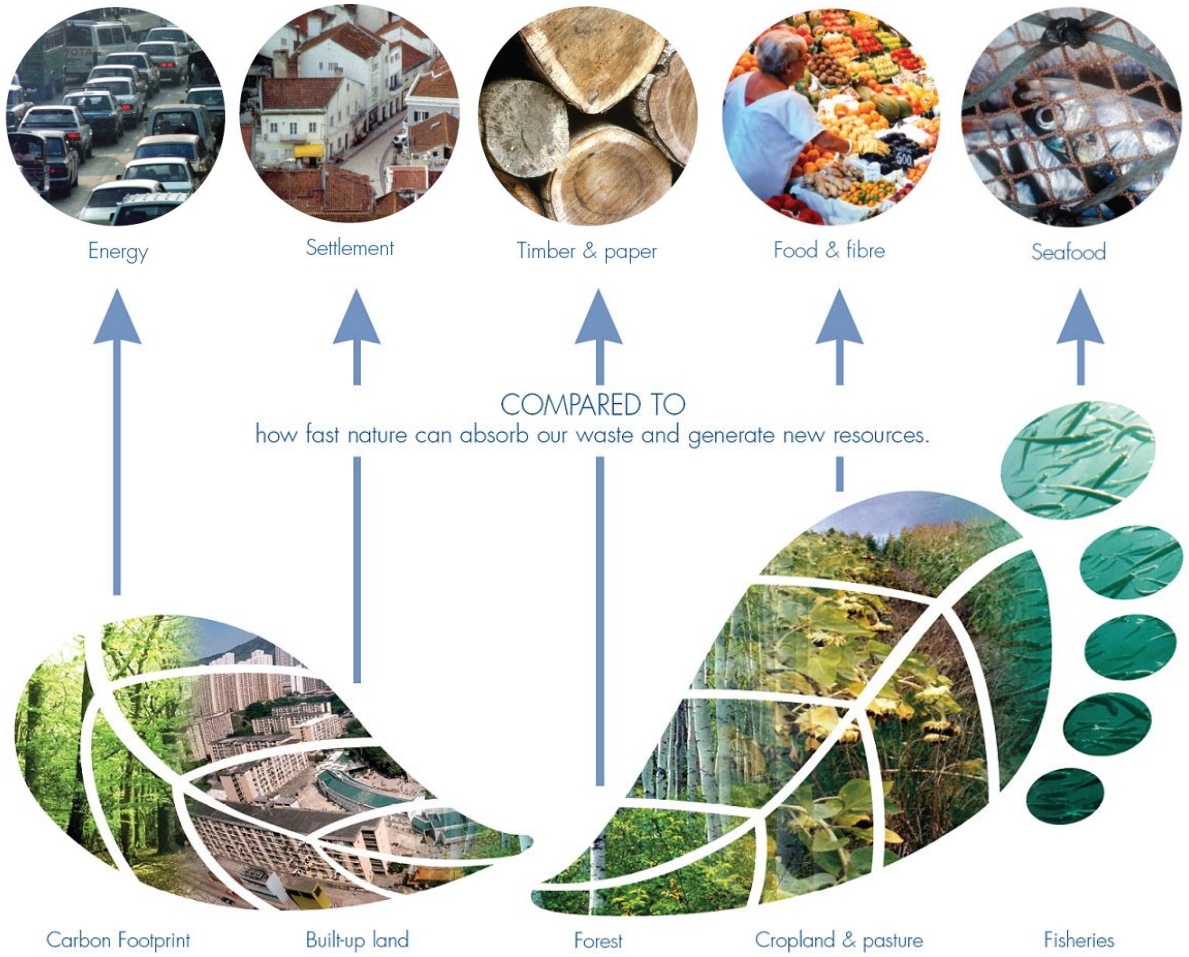
How much do we have,
and how much do we use?

What is the **Ecological Footprint**?

► The supply and demand of renewable natural resources

► The Ecological Footprint:

Measures how much productive land and sea area (known as biocapacity) a human population requires to produce the resources we consume and absorb our CO_2.



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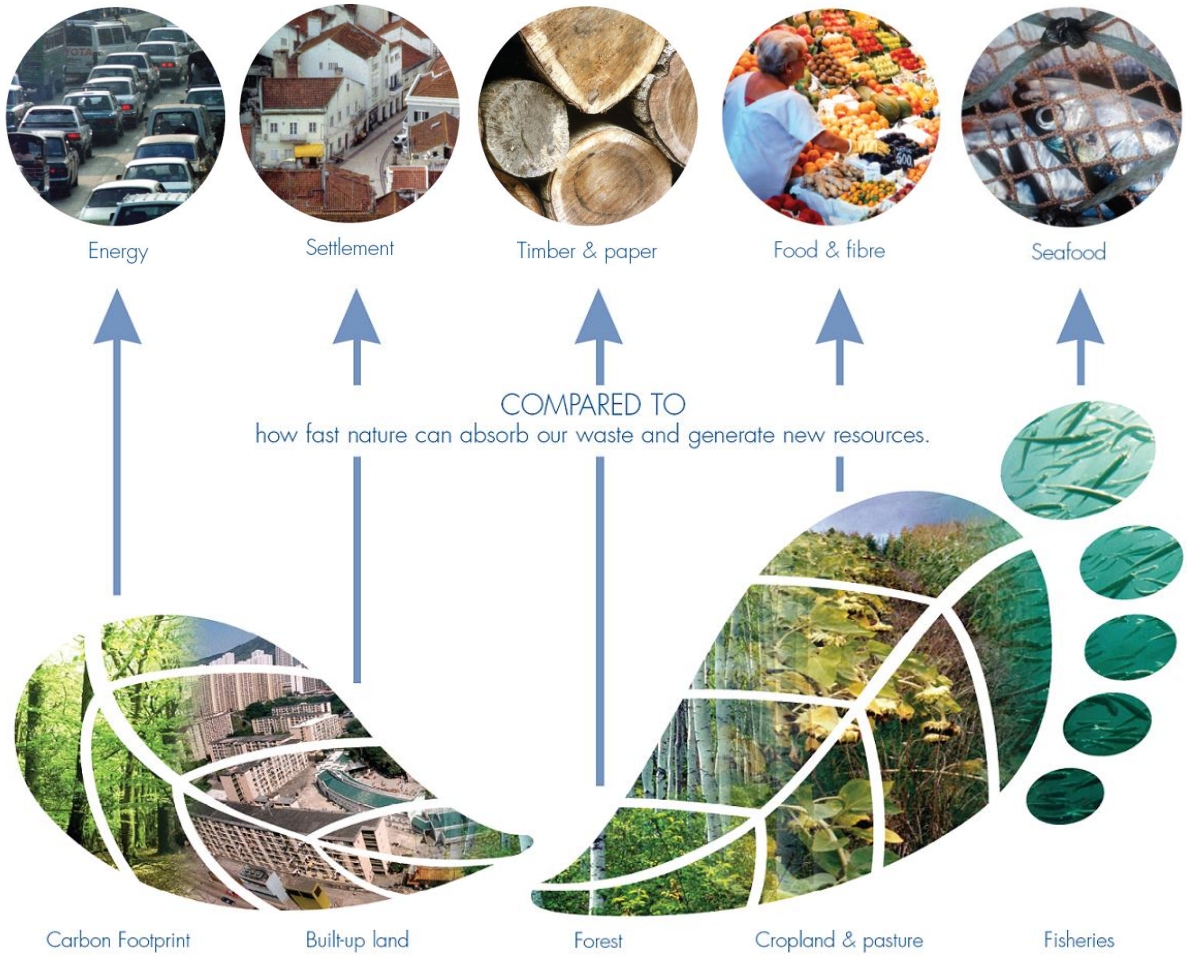
What is **Biocapacity**?

► The supply and demand of renewable natural resources

► **Biocapacity,** the ability of an ecosystem to regenerate and provide services that compete for space, including producing useful biological materials and absorbing waste such as carbon dioxide emissions from fossil fuel.

► **Biocapacity,** a measure of the amount of biologically productive land and water area available:

- •Grazing land
- •Cropland
- •Fishing grounds
- •Forest land
- •Forest for sequestration
- •Built-up land



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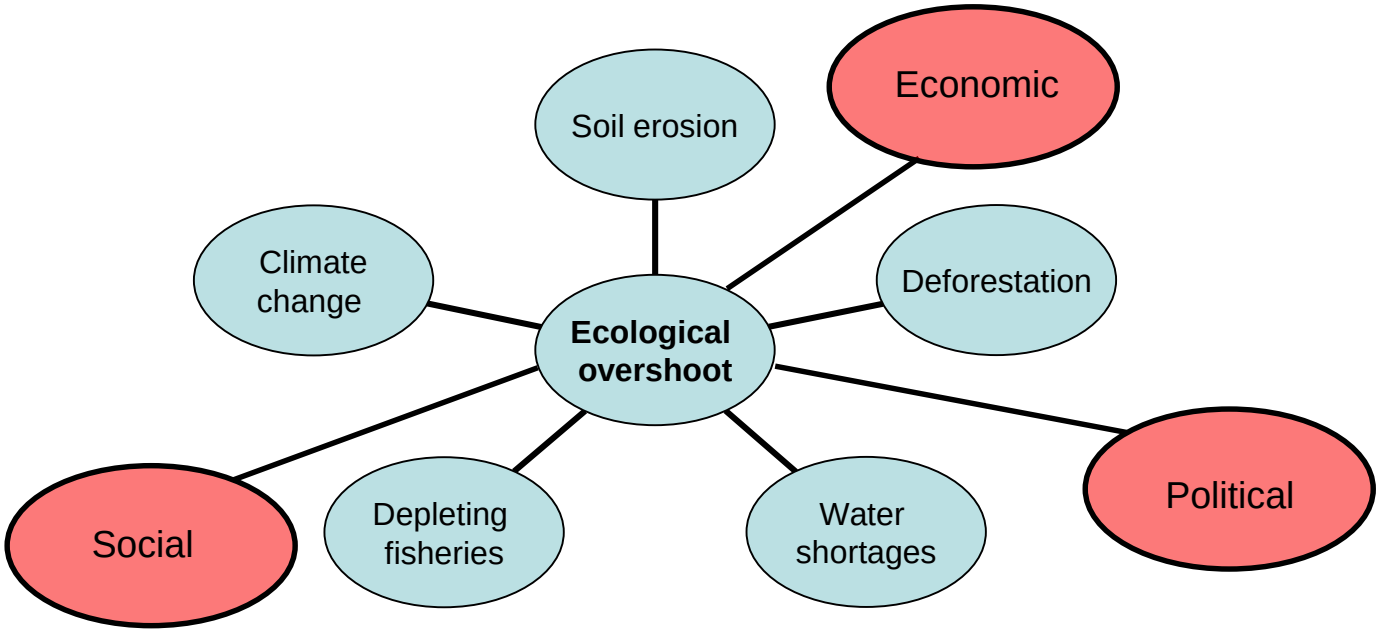
Ecological Overshoot

► Ecological overshoot: Since the 1970s, humanity has been in ecological overshoot, meaning our annual demand on resources exceeds what the Earth can regenerate in a year.

► It now takes the Earth one year and six months to regenerate what we use in one year.



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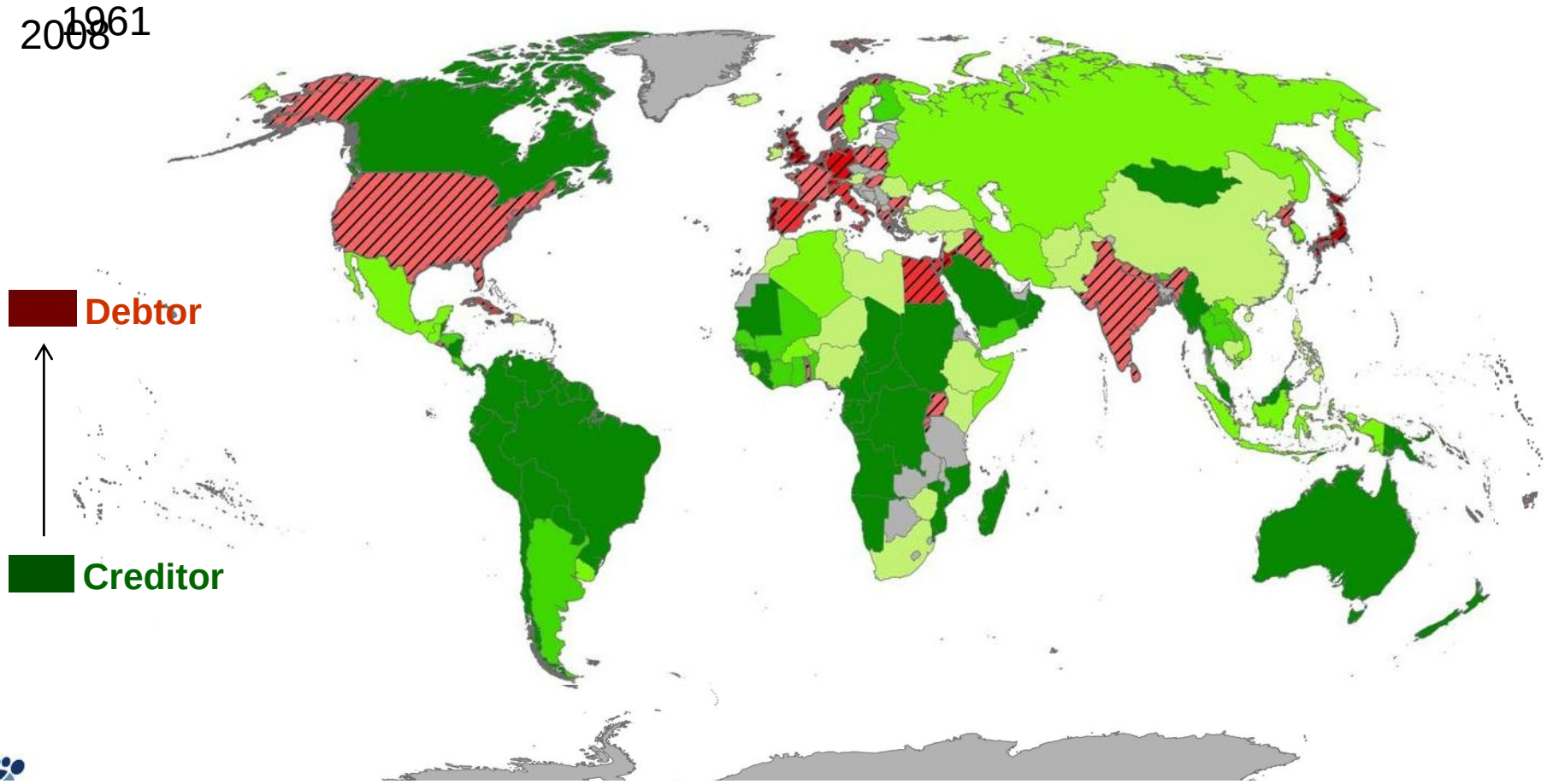
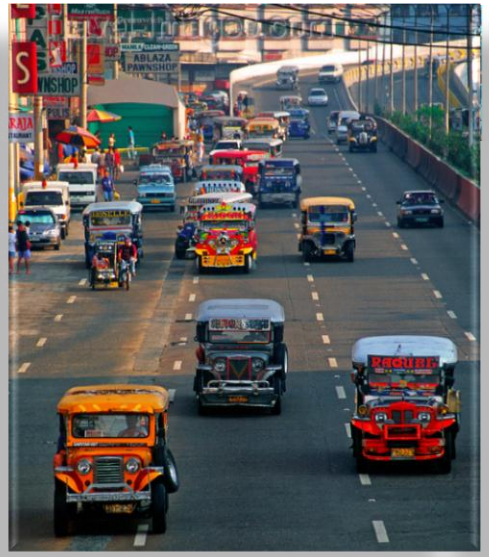
Ecological creditors and debtors



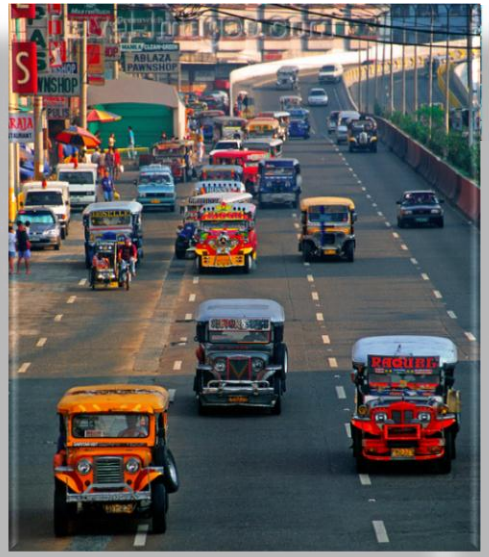
Today, more than 80 percent of the world's population lives in countries that use more resources than what is renewably available within their own borders.


- **Biocapacity Deficit**

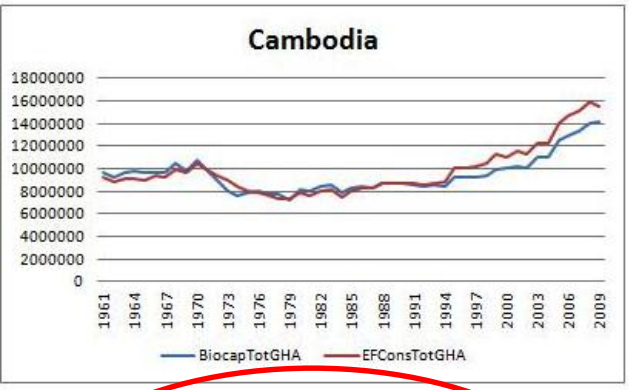
The difference between the Ecological Footprint and Biocapacity of a region or country, occurring when the Footprint of a population exceeds the biocapacity of the area available to that population.

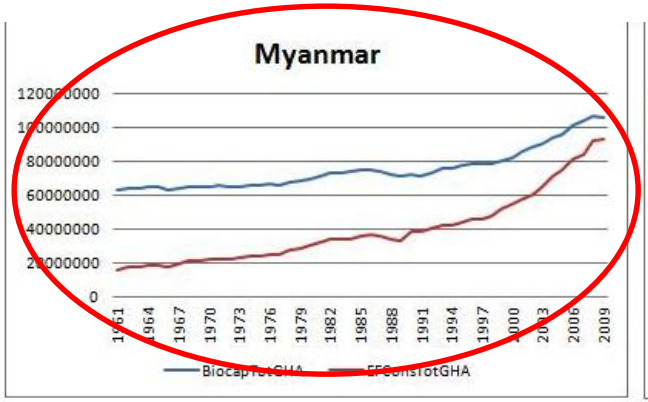


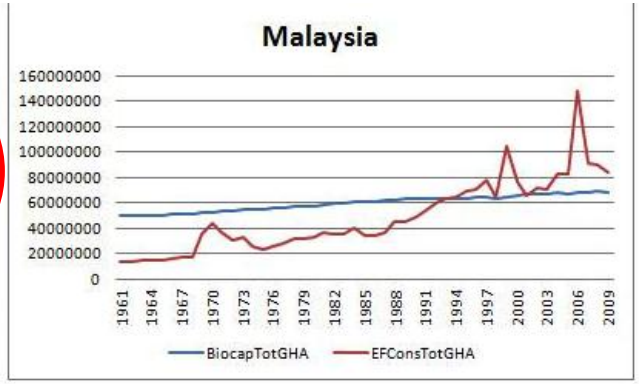
Initiatives

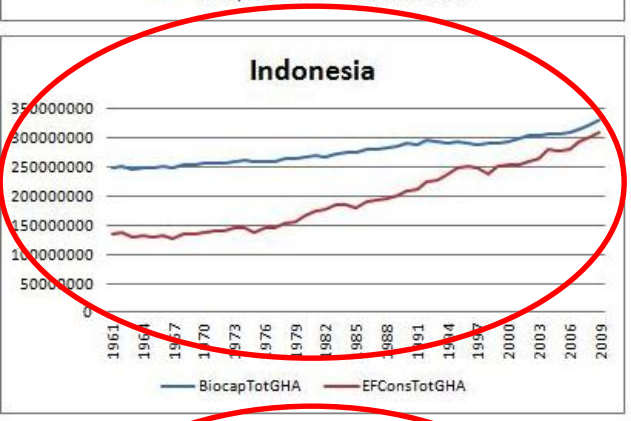


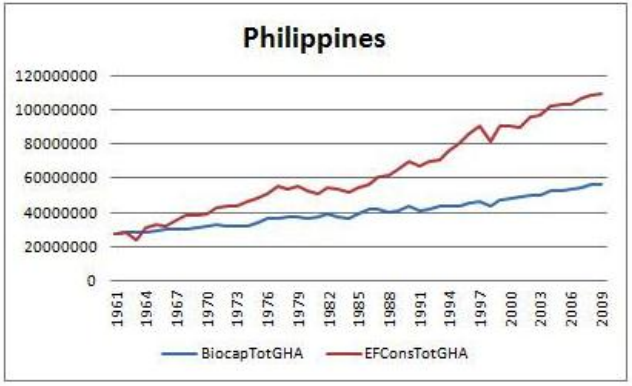
Asia Overview

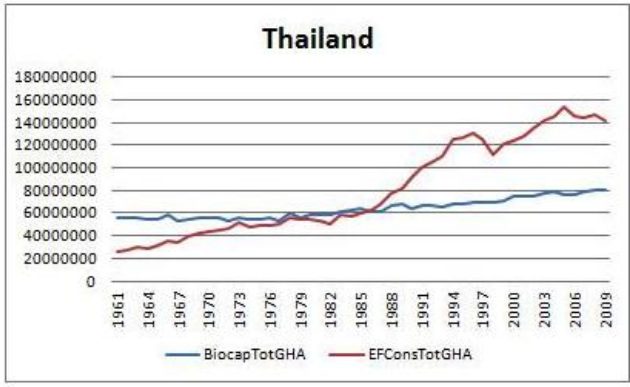


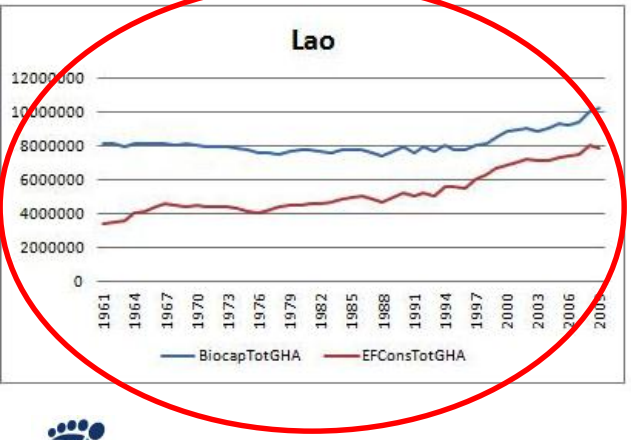


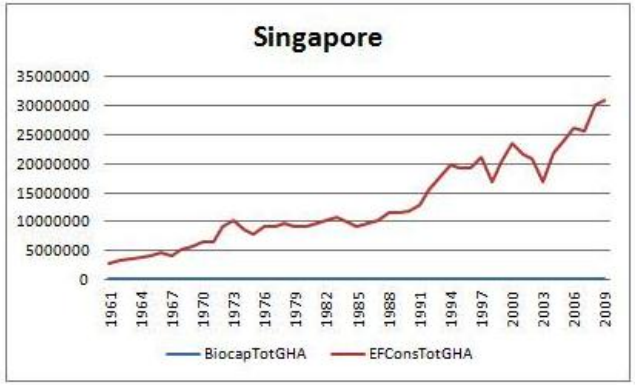


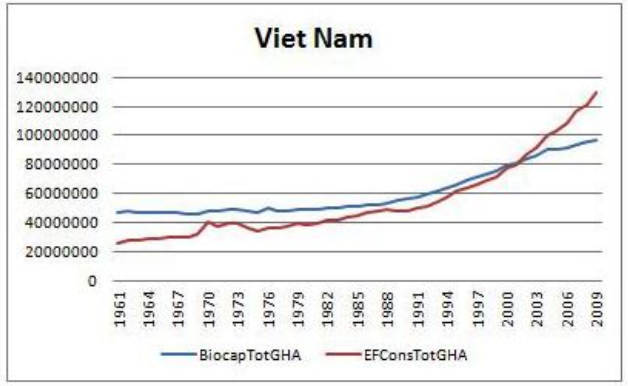












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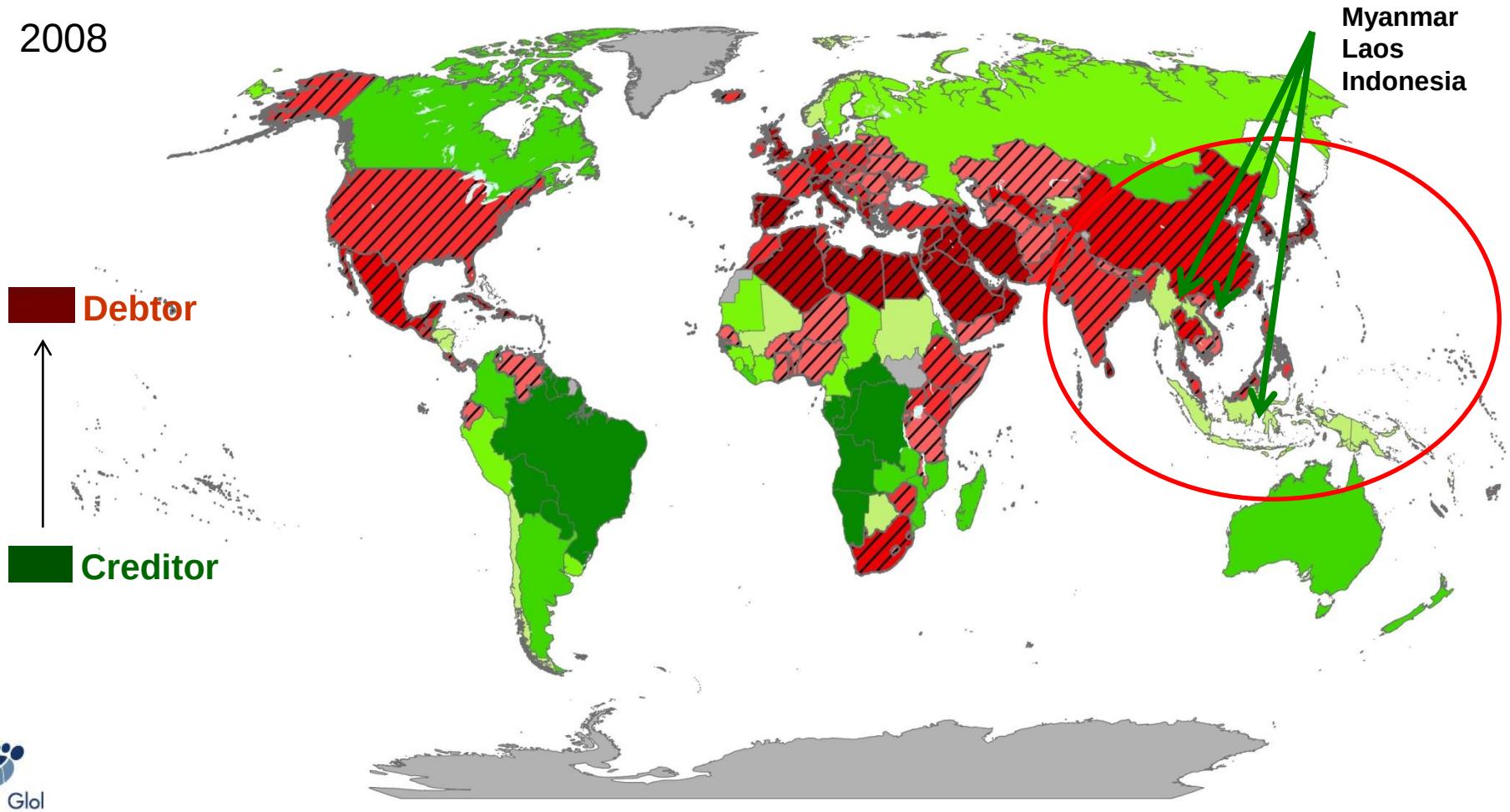
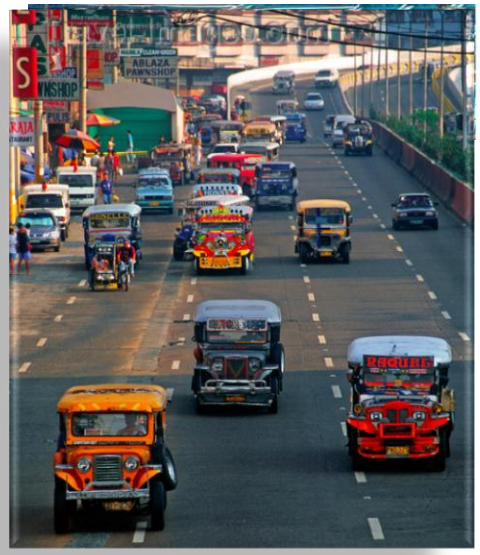
Ecological creditors and debtors

2008





Philippines

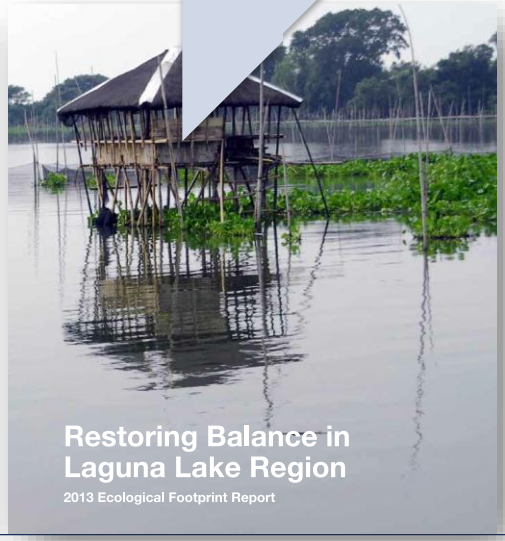
Philippines

Phase 1: National Footprint collaboration

Phase 2: Subnational Footprint: Laguna Lake Region

Phase 3: National sectorial analysis

- Forestry?
- Mining?
- Disaster relief management/ climate change mitigation?



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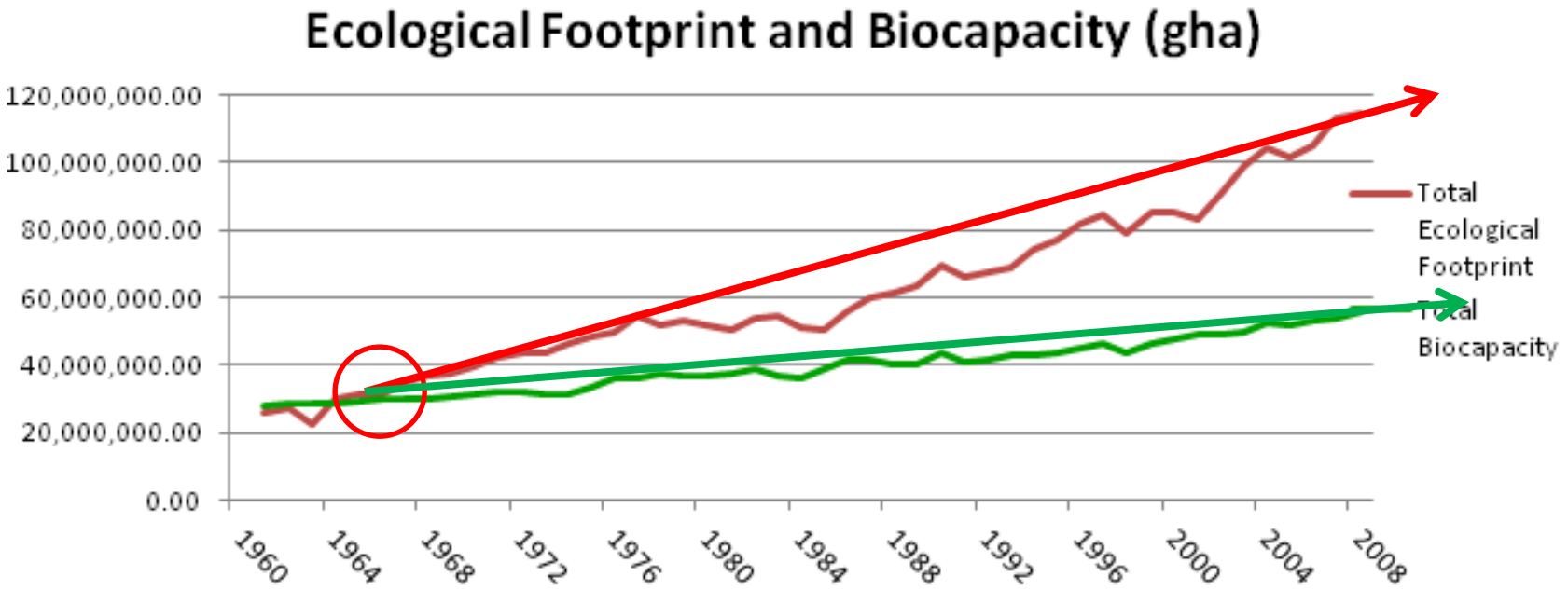
Findings



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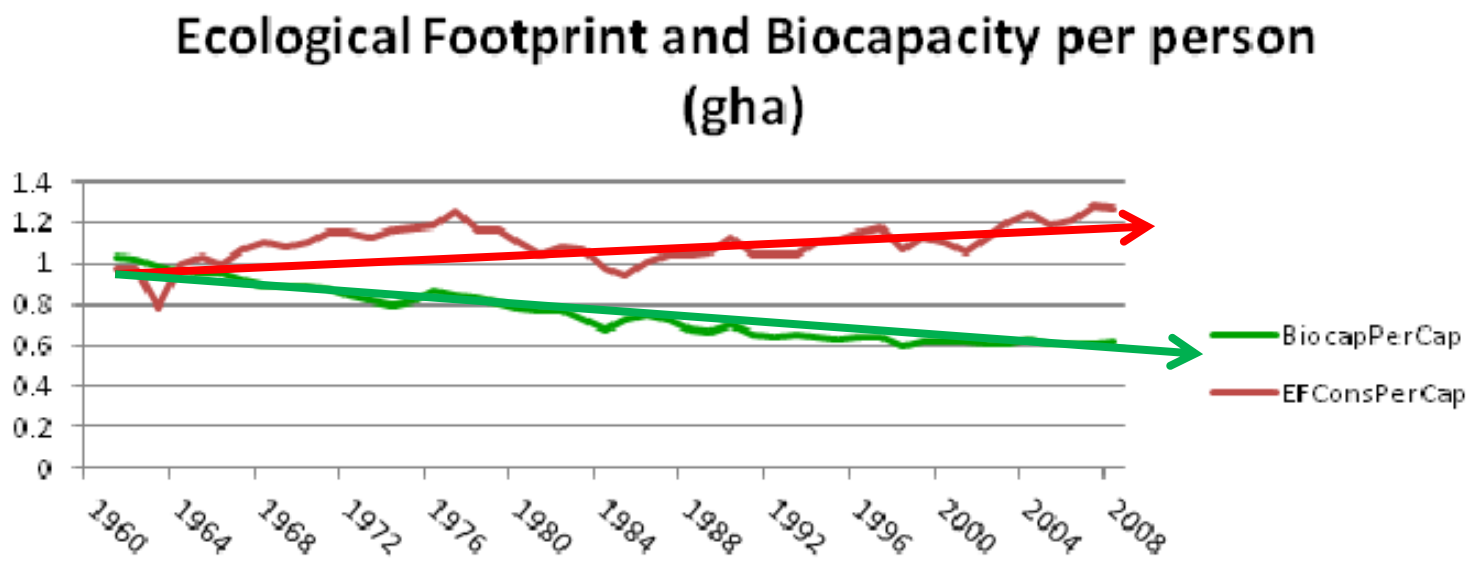
Findings


Ecological Footprint and Biocapacity per person (gha)
1.4
1.2
1
0.8
0.6
0.4
0.2
0
1960
1964
1968
1972
1976
1980
1984
1988
1992
1996
2000
2004
2008
BiocapPerCap
EFConsPerCap

Key Questions


- Where are the risks and opportunities?
- What policies are in place that address your ecological deficit?
- Who are your major trading partners and what do their ecological budgets look like?
- Is your country prepared for a world of growing resource constraints?

Biocapacity of Laguna Lake Region

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Biocapacity Research

Calculation of the biocapacity of 6 provinces contained within the jurisdiction of the LLDA using:

-Philippines biocapacity data

-LLDA Land Use Maps

-NPP satellite data

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Key Findings: **The LLDA Region contains 810,000 gha. The average hectare is more biologically productive than the average world hectare.**

WORLD	PHILIPPINES	LLDA	METRO MANILA
TOTAL BIOCAPACITY 12,000,000,000 gha	TOTAL BIOCAPACITY 52,000,000	TOTAL BIOCAPACITY 810,000	TOTAL BIOCAPACITY 140,000
POPULATION (2009) 6,800,000,000	POPULATION (2009) 85,000,000	POPULATION (2009) 14,600,000	POPULATION (2009) 8,600,000
BIOCAPACITY / CAPITA 1.76 gha/person	BIOCAPACITY / CAPITA 0.61	BIOCAPACITY / CAPITA 0.06 gha/person	BIOCAPACITY / CAPITA 0.02

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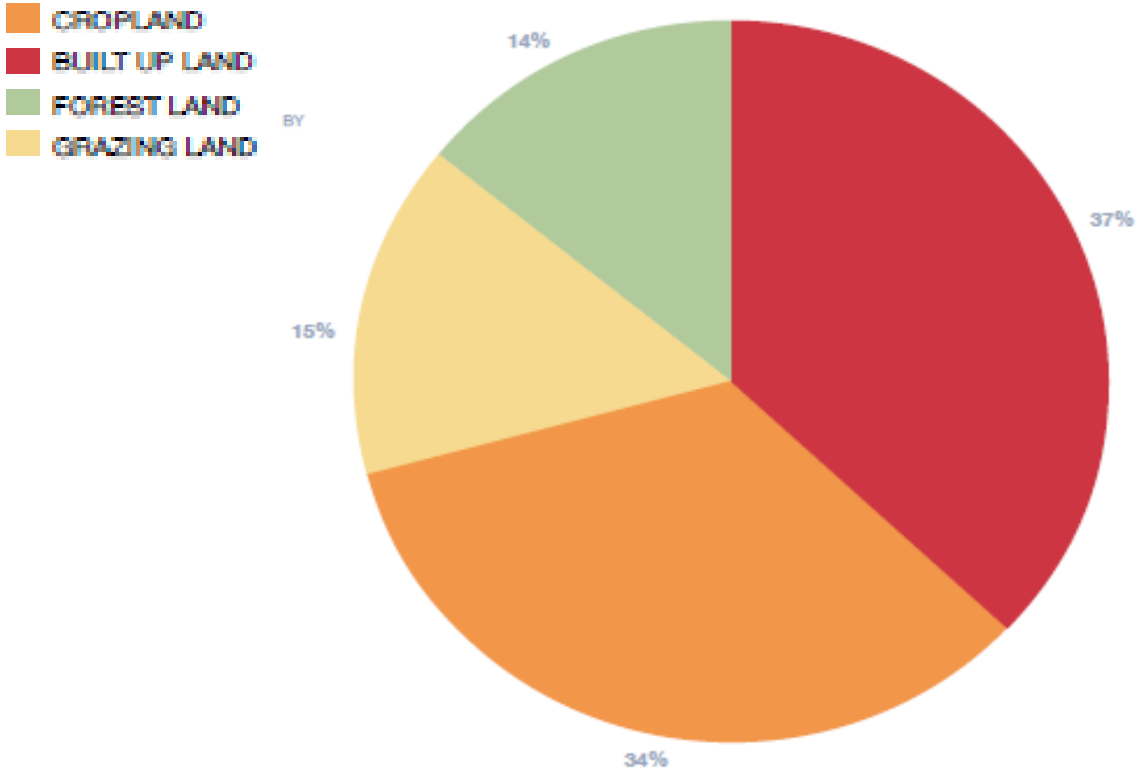
Key Findings:

Cropland and Built Up Land each account for approx. one third of the Total Biocapacity of LLDA Region.

Forest Land and Grazing Land together account for the remaining third of Total Biocapacity.

FIGURE 6.
THE PHILIPPINES HOUSEHOLD FOOTPRINT BY CONSUMPTION LAND USE CATEGORIES



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Key Findings:

The Per Capita Cropland Biocapacity for the LLDA Region (0.06 gha) amounts to only 300 kcal per person per day.

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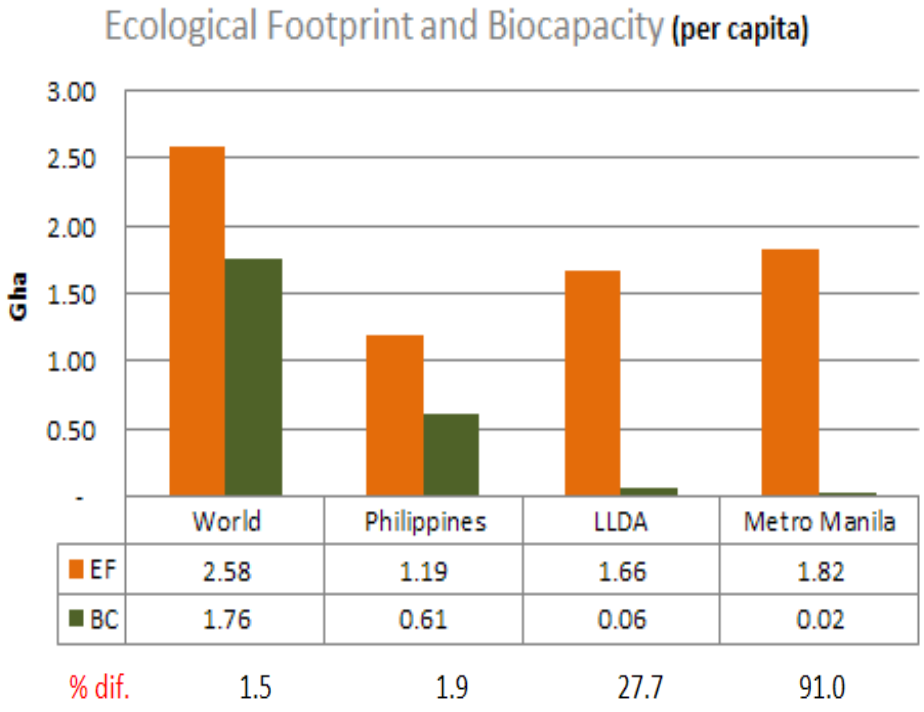
Key Finding 1: The biocapacity of 30 Laguna Lake regions are required to meet the demand of its population



	World	Philippines	LLDA	Metro Manila
EF	2.58	1.19	1.66	1.82
BC	1.76	0.61	0.06	0.02
% dif.	1.5	1.9	27.7	91.0

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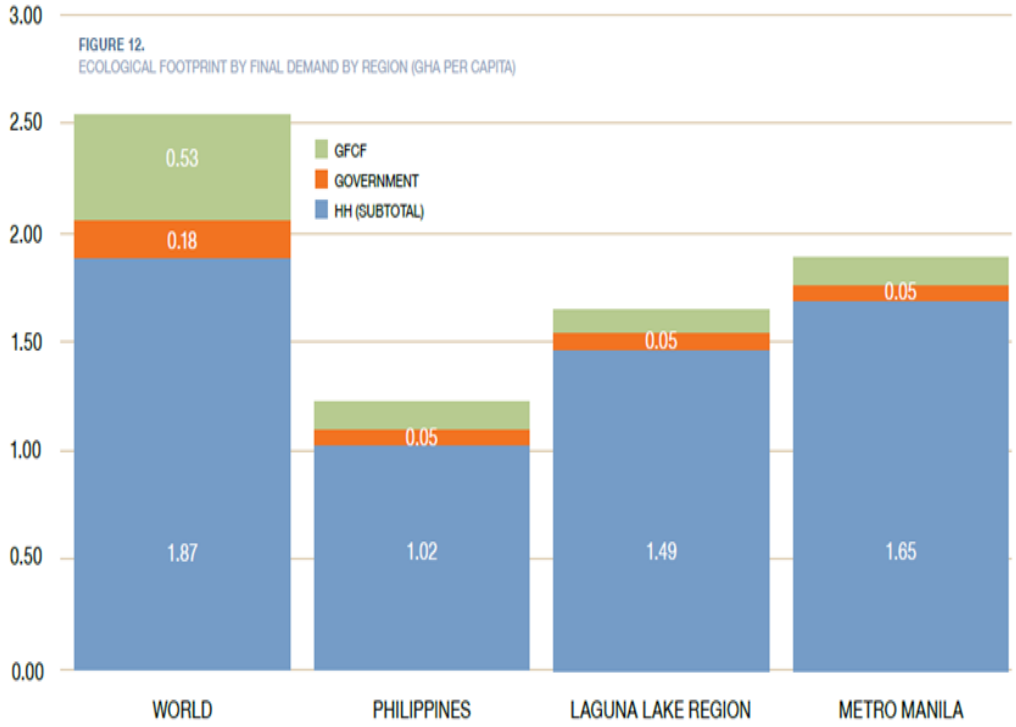
Key Finding 2-1: The household consumption accounts for 90 % of Laguna Lake region's Ecological Footprint



- The direct consumption by **households** accounts for 90 percent of Laguna Lake region's Ecological Footprint.
- This indicates that **residents' daily decisions** significantly impact regional Footprint trends.

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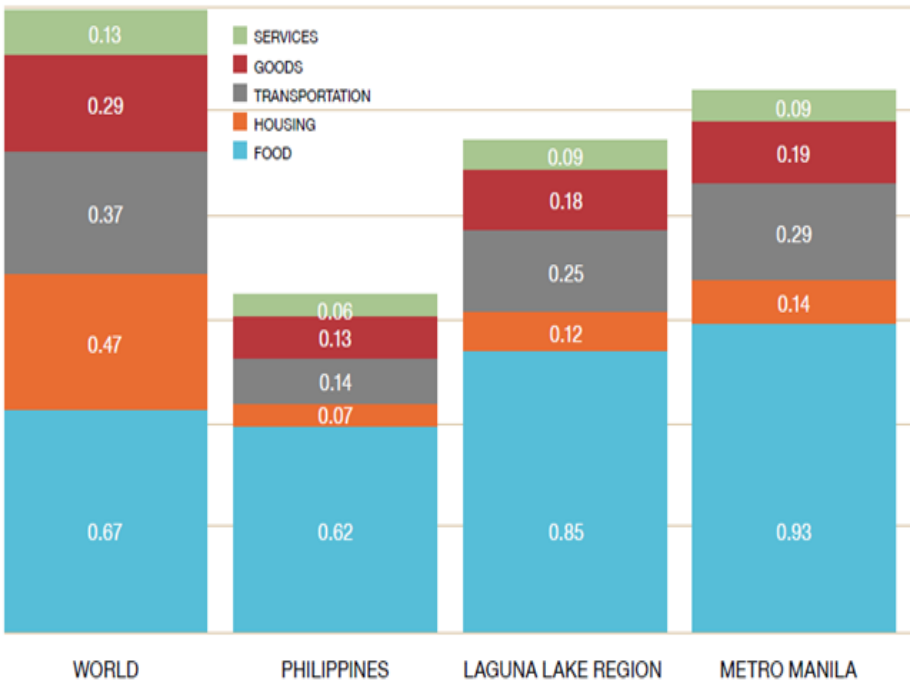
Key Finding 2-2: The main drivers for Laguna Lake region's and Metro Manila Footprint are Food and Transportation

FIGURE 14.
ECOLOGICAL FOOTPRINT BY CONSUMPTION (GHA PER CAPITA)



- The **food Footprint** for the Philippines is equivalent to the world average of 0.61 gha, and that both the Laguna Lake region and Metro Manila have higher food Footprints than the national average and the world average.
- This is likely due to the fact that these populations have relatively **higher incomes** than the national average.
- However, as resources become scarcer, food supply could pose a national security issue (as was witnessed in the 2008 rice crisis throughout Asia).

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Key Finding 3: Laguna Lake Basin is 10% more productive than the rest of the country

FIGURE 15.

RESOURCE INTENSITY (GLOBAL HECTARES/MILLION PESO)	PHILIPPINES	MANILA + CALABARZON	METRO MANILA	CALABARZON
I. AGRI, HUNTING, FORESTRY & FISHING	58.0	65.6	45.7	67.3
II. INDUSTRY SECTOR	5.6	4.3	5.6	3.5
III. SERVICE SECTOR	1.5	1.3	1.2	1.8
TOTAL	9.8	3.8	2.1	7.2

- Among the key findings of the production Footprint for the Laguna Lake region is that **resource intensity** Ecological Footprint for Producing Things in **the agricultural sector** is the highest per peso, both in the Philippines as a whole, as well as in the LLDA region.
- Agriculture, even though it is fundamental necessity, gets **a very small portion of the value added** of an economy.
- If agricultural production is grossly undervalued, it can lead easily to **its liquidation**.

Next Steps

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Phase 3: In-depth Footprint Analysis

- Map the flow to consumer of Ecological Footprint between industry sectors
- Link this flow to consumer final demand
- Direct more targeted outreach about resource use and waste generation to households and consumers
- Help government understand the ecological impacts of industrial sectors
- Include a scenario analysis and a plan for action towards sustainable development

THANK YOU FOR YOUR TIME!

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