



Ecological Footprint Policy Application and Case Studies

May 23 – 24, 2018

Slovenian Environment Agency, Ljubljana

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Director of Research



Global Footprint Network

Global Footprint Network is an international NGO measuring how the world manages its natural resources and responds to climate change.

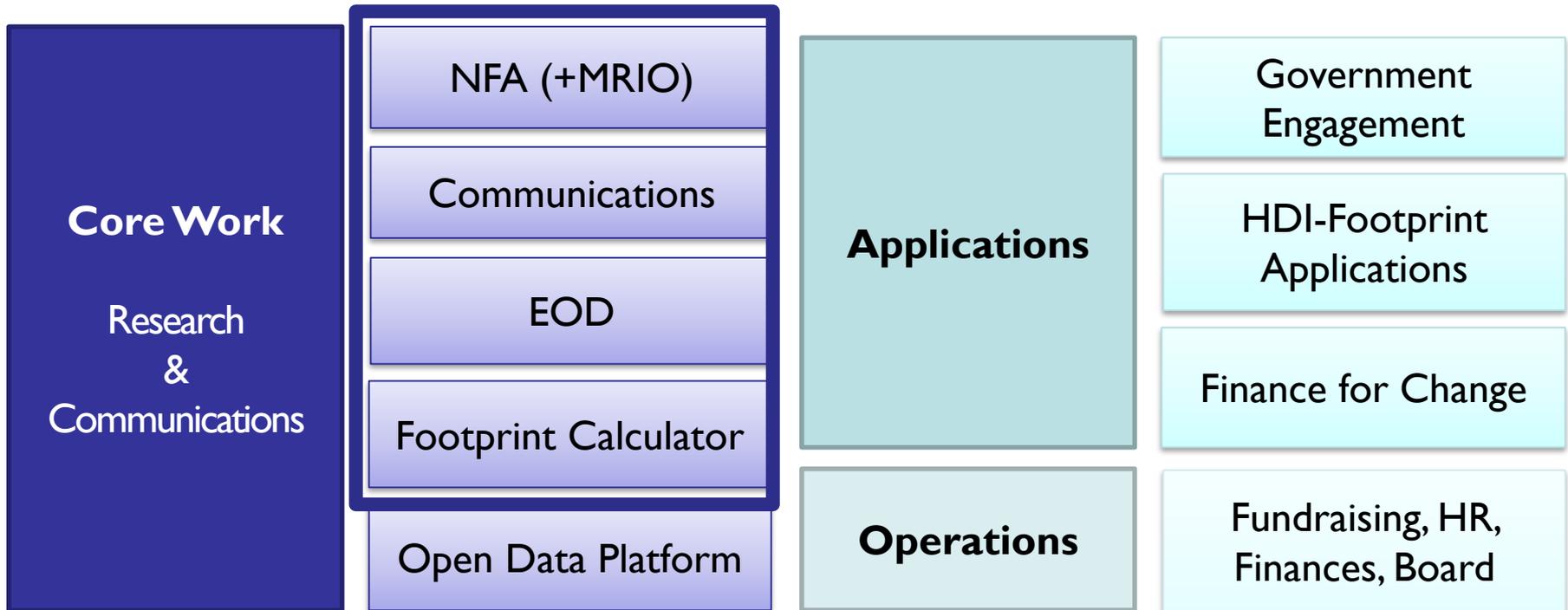
OUR MISSION: Help end ecological overshoot by making ecological limits central to decision making by promoting data, tools, and analysis.

The heart of our work is the **ECOLOGICAL FOOTPRINT**. It measures human demand on nature, expressed as a single, easy-to-understand number that's scalable from a global to individual level. We pioneered this methodology more than 20 years ago and continue to build on the science and design new tools for applying it.

Since 2003 we've engaged with more than **50 nations, 30 cities, and 70 global partners** to deliver scientific insights in support of policy and investment decisions.

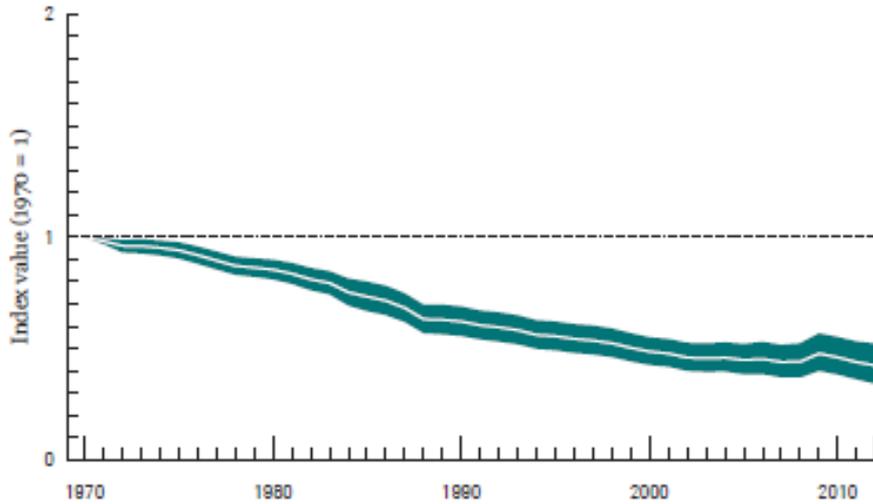


Our Approach - Global scope with regional programs

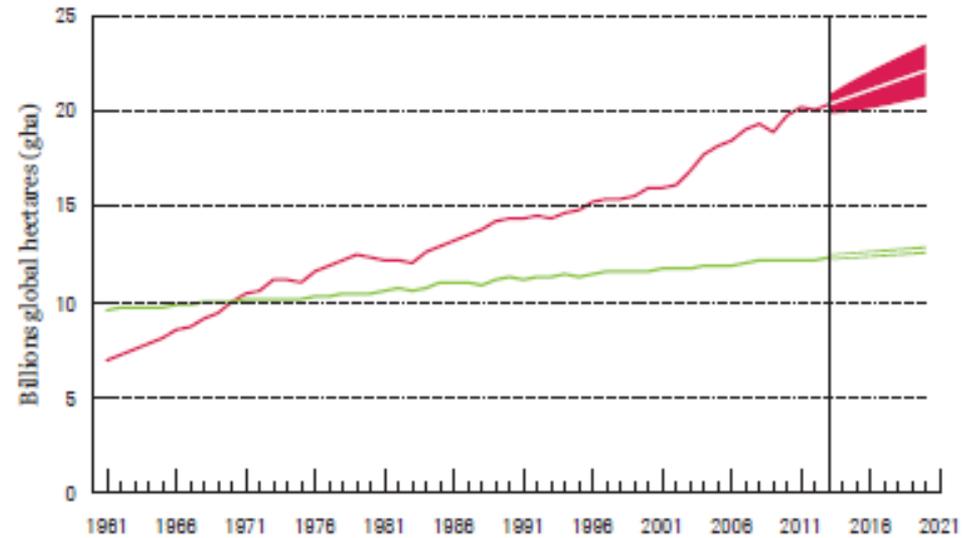




GLOBAL POLICY USE: FOOTPRINT AND BIODIVERSITY



Living Planet Index



Ecological Footprint







The 2010 Biodiversity Target

*"to achieve by 2010 a significant **reduction of the current rate of biodiversity loss** at the global, regional and national level as a contribution to poverty alleviation and to the benefit of all life on Earth"*



Biodiversity Indicators Partnership (BIP)



Aichi Target 4:
Sustainable production and consumption

By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.

Primary indicators

- > [Ecological Footprint](#)
- > [Red List Index \(impacts of utilisation\)](#)
- > [Percentage of Parties with legislation in Category 1 under CITES National Legislation Project \(NLP\)](#)
- > [MSC Certified Catch](#)
- > [Ocean Health Index](#)
- > [Cumulative Human Impacts on Marine Ecosystems](#)
- > [Human Appropriation of Net Primary Production \(HANPP\)](#)

Browse global indicators under the BIP

Aichi Targets

SDGs

MEAs

Themes

National Indicators

Goal A



Goal B



Goal C



Goal D



Goal E



See <https://www.bipindicators.net/indicators/ecological-footprint>



Communicating global progress

3rd edition - Global Biodiversity Outlook

- Flagship IYB product of CBD, **10 May 2010**
- Butchart *et al.* (2010) *Science* 328: 1164-8, **28 May 2010**
- Tittensor *et al.* (2014) *Science* 346: 241-4, **October 2014**

Global Biodiversity Outlook 3



Global Biodiversity: Indicators of Recent Declines

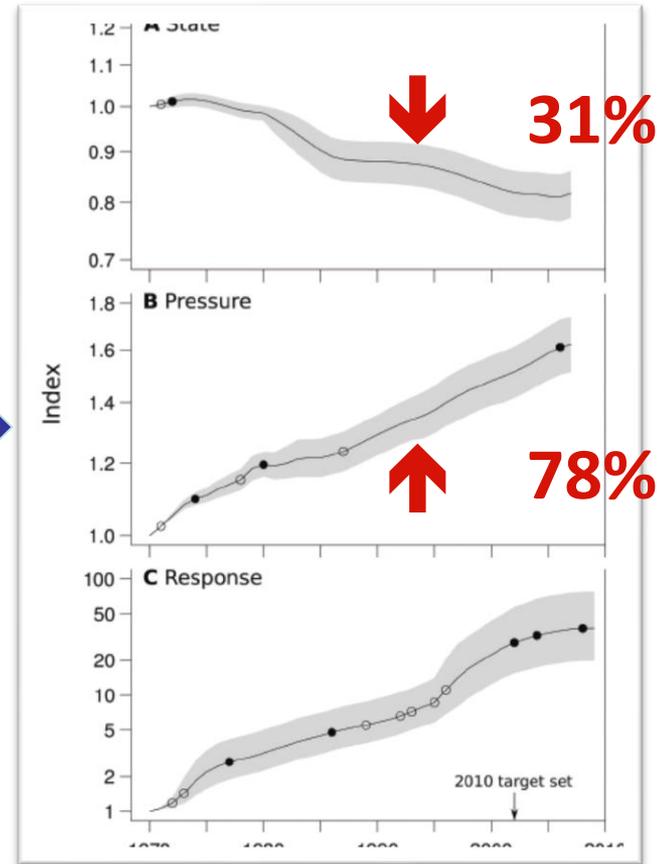
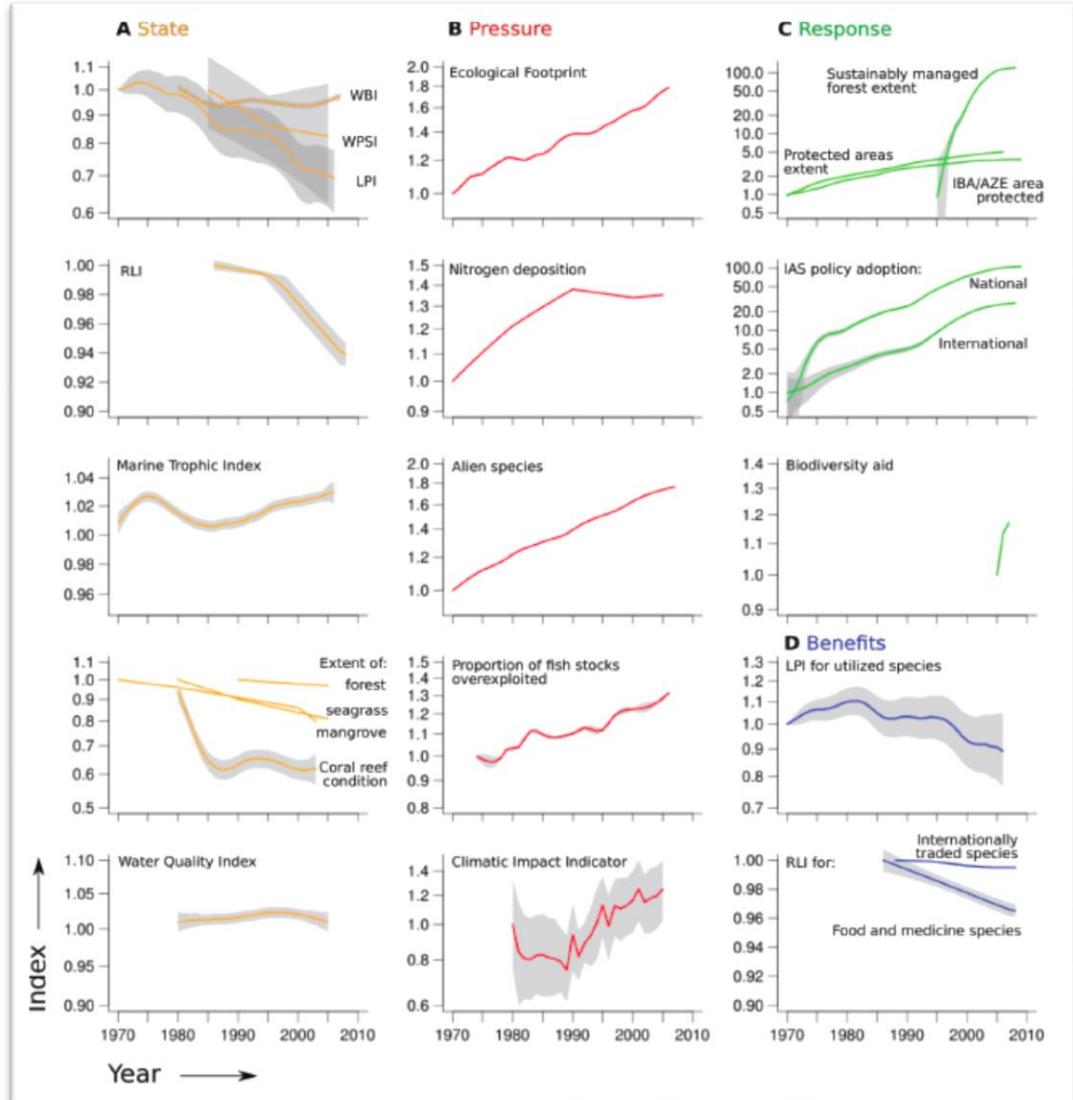
Stuart H. M. Butchart,^{1,2*} Matt Walpole,¹ Ben Collen,³ Arco van Strien,⁴
 Jörn P. W. Scharlemann,¹ Rosamunde E. A. Almond,¹ Jonathan E. M. Baillie,³
 Bastian Bomhard,¹ Claire Brown,¹ John Bruno,⁵ Kent E. Carpenter,⁶ Geneviève M. Carr,^{7†}
 Janice Chanson,⁸ Anna M. Chenery,¹ Jorge Csirke,⁹ Nick C. Davidson,¹⁰ Frank Dentener,¹¹
 Matt Foster,¹² Alessandro Galli,¹³ James N. Galloway,¹⁴ Piero Genovesi,¹⁵
 Richard D. Gregory,¹⁶ Marc Hockings,¹⁷ Valerie Kapos,^{1,18} Jean-Francois Lamarque,¹⁹
 Fiona Leverington,¹⁷ Jonathan Loh,²⁰ Melodie A. McGeoch,²¹ Louise McRae,³
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 Tristan D. Tyrrell,¹ Jean-Christophe Vié,³² Reg Watson²⁴

In 2002, world leaders committed, through the Convention on Biological Diversity, to achieve a significant reduction in the rate of biodiversity loss by 2010. We compiled 31 indicators to report

CONSERVATION TARGETS

A mid-term analysis of progress toward international biodiversity targets

Derek P. Tittensor,^{1,2*} Matt Walpole,¹ Samantha L. L. Hill,¹ Daniel G. Boyce,^{3,4}
 Gregory L. Britten,² Neil D. Burgess,^{1,5} Stuart H. M. Butchart,⁶ Paul W. Leadley,⁷
 Eugenie C. Regan,¹ Rob Alkemade,⁸ Roswitha Baumung,⁹ Céline Bellard,⁷
 Lex Bouwman,^{8,10} Nadine J. Bowles-Newark,¹ Anna M. Chenery,¹ William W. L. Cheung,¹¹
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 Jennifer van Kolck,⁸ Piero Visconti,³⁴ Yimin Ye⁹



Butchart et al. (2010) Global biodiversity: indicators of recent declines, *Science* 328: 1164-8



Intergovernmental Platform on Biodiversity and Ecosystem Services

- EF included in the list of IPBES Core Indicators: **direct (anthropogenic) drivers of change in the state of biodiversity and ecosystems functioning** (and their derived services) that affect the supply of nature's benefit to people.
- EF used in the recent IPBES global assessment report (& regional reports)

Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)
Assessment Report on Biodiversity & Ecosystem Services in Africa: A Primer

The world's biodiversity is being lost and nature's contributions to people are being degraded, which undermines human well-being.

The success of humanity's efforts to reverse the current unsustainable use of our irreplaceable natural assets and heritage requires the best-possible evidence, comprehensive relevant policy options and committed, well-informed decision makers. The IPBES assessment reports serve these ends, by providing the credible peer-reviewed information needed for informed decision-making.

- Forthcoming landmark assessment report on biodiversity & nature's contributions to people across Africa
- Best-possible evidence for decision makers to make informed choices balancing the needs of people & nature
- Prepared by more than 100 leading international experts from 25 countries over 3 years
- Draws on more than 2,000 scientific papers, Government reports, Indigenous and local knowledge & other sources
- Impacted by over 3,000 comments from more than 300 external reviewers, including Governments
- 1 of 5 major new science-policy assessment reports due to be launched in March 2018
- **Hot Topics:** Adapting to climate change; Sustainable use of natural resources; Sustainable land management; Combating desertification and ecosystem degradation; Invasive alien species; Impacts of trade and globalization; Rapid urbanization and advances in information & communications technology; Ocean and coastal protection; Cooperative governance of natural resources

Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)
Assessment Report on Biodiversity & Ecosystem Services in the Americas: A Primer

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- Forthcoming landmark assessment report on biodiversity & nature's contributions to people across the Americas
- Best-possible evidence for decision makers to make informed choices balancing the needs of people & nature
- Prepared by more than 120 leading international experts from 36 countries over 3 years
- Draws on more than 2,000 scientific papers, Government reports, Indigenous and local knowledge & other sources
- Impacted by over 2,000 comments from more than 300 external reviewers, including Governments
- 1 of 5 major new science-policy assessment reports due to be launched in March 2018
- **Hot Topics:** Transboundary ecological hotspots; Progress on Aichi Targets and SDGs; Policy risk options across sectors

Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)
Assessment Report on Biodiversity & Ecosystem Services in Asia and the Pacific: A Primer

The world's biodiversity is being lost and nature's contributions to people are being degraded, which undermines human well-being.

The success of humanity's efforts to reverse the current unsustainable use of our irreplaceable natural assets and heritage requires the best-possible evidence, comprehensive relevant policy options and committed, well-informed decision makers. The IPBES assessment reports serve these ends, by providing the credible peer-reviewed information needed for informed decision-making.

- Forthcoming landmark assessment report on biodiversity & nature's contributions to people across Asia and the Pacific
- Best-possible evidence for decision makers to make informed choices balancing the needs of people & nature
- Prepared by more than 130 leading international experts from 38 countries over 3 years
- Draws on more than 2,000 scientific papers, Government reports, Indigenous and local knowledge & other sources
- Impacted by over 2,400 comments from more than 300 external reviewers, including Governments
- 1 of 5 major new science-policy assessment reports due to be launched in March 2018
- **Hot Topics:** Adapting to climate change; Sustainable use of natural resources; Sustainable land management; Combating desertification and ecosystem degradation; Invasive alien species; Impacts of trade and globalization; Rapid urbanization and advances in information & communications technology; Ocean and coastal protection; Cooperative governance of natural resources

Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)
Assessment Report on Biodiversity & Ecosystem Services in Europe and Central Asia: A Primer

The world's biodiversity is being lost and nature's contributions to people are being degraded, which undermines human well-being.

The success of humanity's efforts to reverse the current unsustainable use of our irreplaceable natural assets and heritage requires the best-possible evidence, comprehensive relevant policy options and committed, well-informed decision makers. The IPBES assessment reports serve these ends, by providing the credible peer-reviewed information needed for informed decision-making.

- Forthcoming landmark assessment report on biodiversity & nature's contributions to people across Europe & Central Asia
- Best-possible evidence for decision makers to make informed choices balancing the needs of people & nature
- Prepared by more than 120 leading international experts from 36 countries over 3 years
- Draws on more than 2,000 scientific papers, Government reports, Indigenous and local knowledge & other sources
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- **Hot Topics:** Transboundary ecological hotspots; Progress on Aichi Targets and SDGs; Policy risk options across sectors

Sustainable Development Goals

Ultimate Goal



Safe Operating Space



Ultimate Means



SDG Performance compared to EF-HDI

- Africa
- Middle East/Central Asia
- Other Europe
- SDG-I ranking
- Central America/Caribbean
- South America
- North America
- EU

High Human Development

Very High Human Development

Best SDG Performance

Worst SDG Performance

World Biocapacity per person in 1961

- 149- Central African Republic
- 146- Niger
- 145- Chad
- 142- Guinea
- 135- Mali
- 136- Gambia
- 137- Yemen
- 141- Nigeria
- 148- Liberia
- 138- Sierra Leone
- 143- Burkina Faso
- 139- Afghanistan
- 144- Haiti
- 140- Madagascar

0.3 0.5 0.7 0.9 1.2
U.N. Human Development Index (HDI)

Global Sustainable Development Quadrant

Ecological Footprint per Person (gha)

- 1- Sweden
- 2- Denmark
- 3- Norway
- 4- Finland
- 5- Switzerland
- 6- Germany
- 7- Austria
- 8- Netherlands
- 9- France
- 10- United Kingdom
- 11- Belgium
- 12- Belgium



NATIONAL FOOTPRINT INITIATIVE STEPS

Verification

- Data
- Methodology
- Review
- Capacity building
- Media

Interpretation

- Capacity building
- Footprint Hotspots
- Identification of areas of intervention
- Dissemination

Application

- Scenario analysis
- SDROI, etc
- Economic implications
- Policy Advice
- Dissemination



TECHNICAL CAPACITY (R&D AND POLICY)

- Review NFA results and Footprint methodology (LPR)
- Contribute to advancing the Ecological Footprint methodology
- Suggest improvements for validation from National Accounts Review Committee



A research agenda for improving national Ecological Footprint accounts

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ABSTRACT

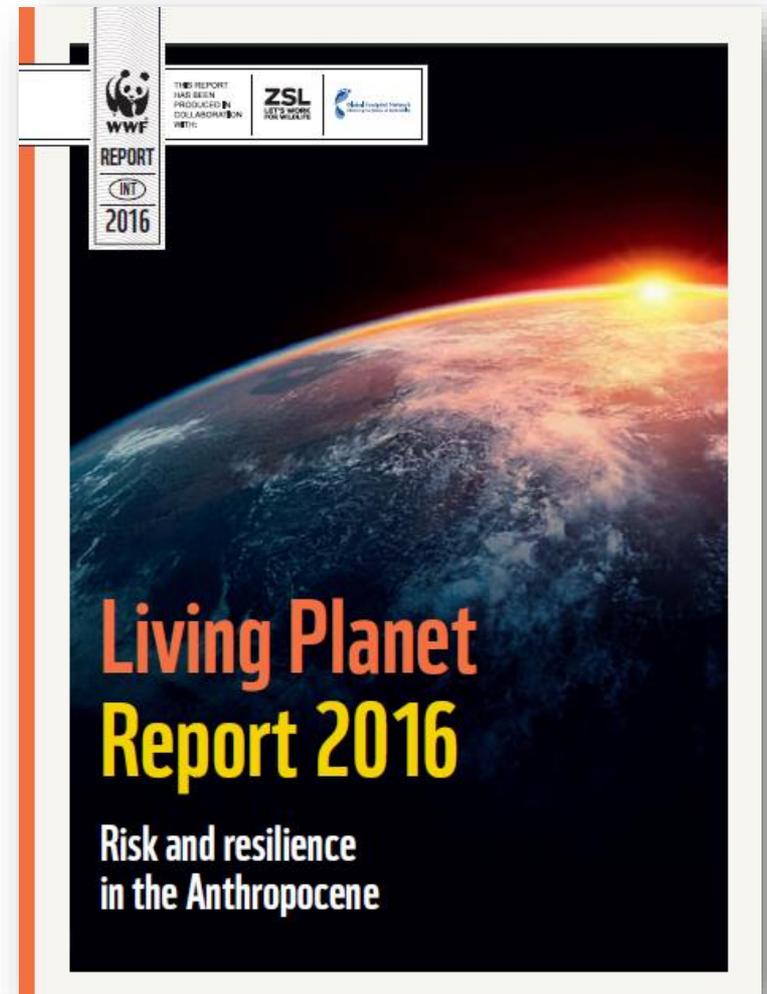
Nation-level Ecological Footprint accounts are currently produced for more than 150 nations, with multiple calculations available for some nations. The data sets that result from these national assessments typically serve as the basis for Footprint calculations at smaller scales, including those for regions, cities, businesses, and individuals. Global Footprint Network's National Footprint Accounts, supported and used by more than 70 major organizations worldwide, contain the most widely used national accounting methodology today. The National Footprint Accounts calculations are undergoing

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E-mail address: justin@footprintnetwork.org (J. Kitzes).



COMMUNICATION AND OUTREACH

- Managing the vast media opportunities that come with taking on an Initiative at a national scale (*e.g., Living Planet Report*).
- Assist tech team in building capacity on local media
- Online national Footprint calculator
- Use outcomes/messages for awareness campaigns
- Brief selected key stakeholders on Footprint results and message





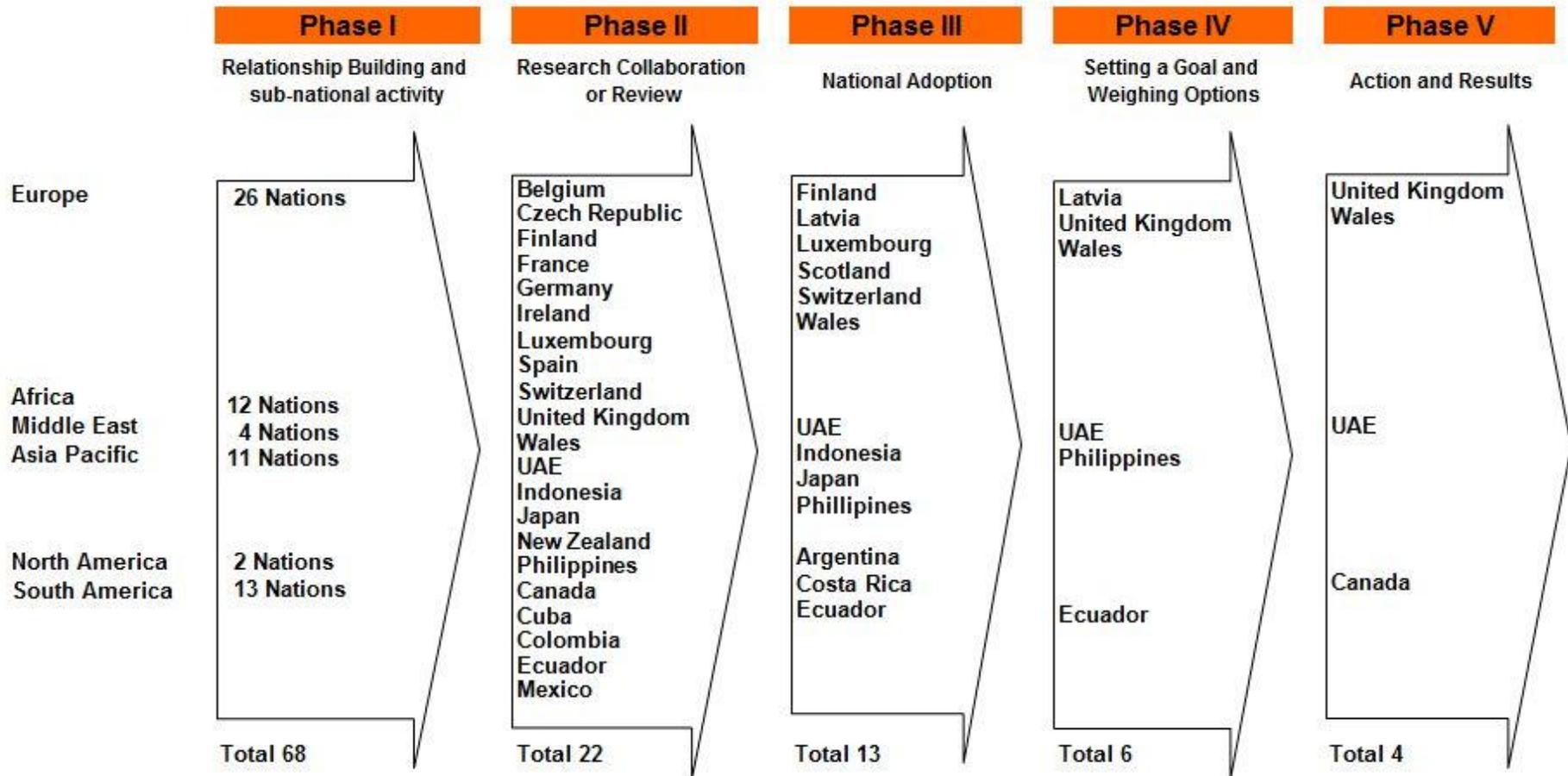
THE IMPORTANCE OF ENGAGING UNIVERSITIES FROM START

- Inclusion of highest technical University / College will ensure:
 - Long term life of the Initiative
 - Sustained knowledge transfer
 - Build future capacity
 - Institutionalization
 - Contribute to global dialogue
 - Source for pupils and researchers
 - Create generation of active participants
 - Adding value via local knowledge



**Same is true
for the Civil
Society**

Our work with nations





UAE ECOLOGICAL FOOTPRINT INITIATIVE



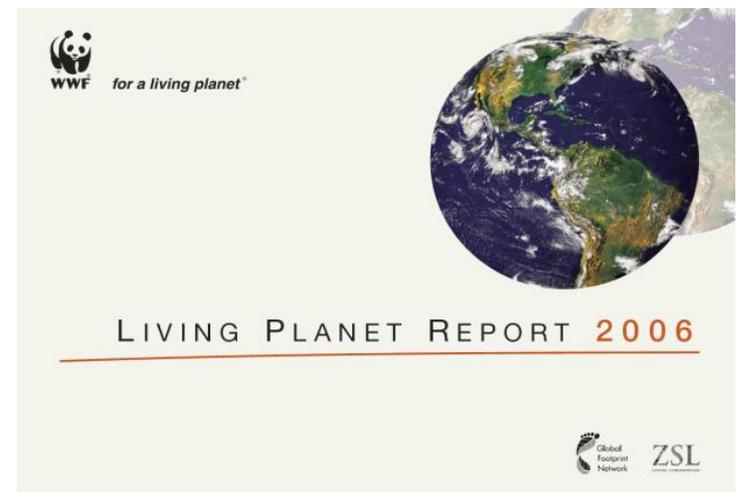
Partners of the Ecological Footprint Initiative

شركاء مبادرة بصمة الإمارات



Why the UAE started the Al Basama Al Beeiya (Ecological Footprint) Initiative?

- UAE interest in understanding and measuring sustainability began at the World Economic Forum in Davos (Switzerland) in 2006, where the Environmental Performance Index was presented (UAE ranked as 47th out of 133 countries).
- This interest was reinforced with the launch of the Living Planet Report 2006 which ranked UAE as the country with the highest per capita Ecological Footprint amongst over 150 countries.





The publishing of the LPR 2006 lead to several questions:

- What is the Ecological Footprint?
- Why is the UAE placed highest in the chart?
- What kind of data goes into the Footprint calculation?
- Can we compare UAE, a desert country, with other temperate and tropical countries with abundant natural resources?
- We must be up there because we are an oil producing country...



But it also lead to the acknowledgement that:

- Robust environmental and other data for the UAE were needed.
- Regardless of the ranking, the UAE needs to look seriously at understanding its consumption patterns and devising strategic policies towards that end.





Al Basama Al Beeiya (Ecological Footprint) Initiative was launched in October 2007 as the UAE's national effort to ensure a sustainable future by measuring and understanding the impact of its way of living on planet earth

Partners of the Initiative:

- Ministry of Environment & Water
- Abu-Dhabi Global Environmental Data Initiative
- Emirates Wildlife Society (EWS-WWF)
- Global Footprint Network

Success of the project is the ability to work with organizations / institutions across the country

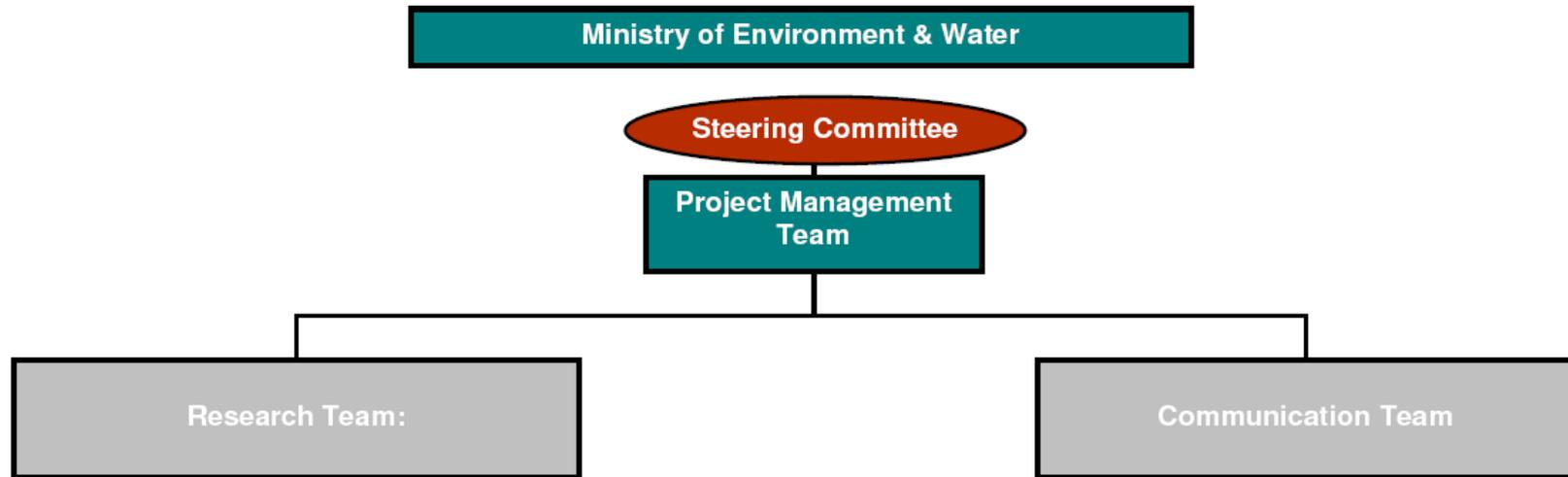




- Aims of the initiative:
 - Data review → Building of a strong and reliable database
 - Methodology → Contribute to international research
 - in the verification of national data (UAE)
 - strengthening the global calculation methods
 - Incorporate bio-geographical / local context
 - Building own expertise/ capacity in the process (key to the long term goal of institutionalizing the Ecological Footprint)
 - Recommend and assist in policy development → resource use and data management.
 - Relationship building



Governance Structure



- ▶ This Working Group will review the national data accounts
- ▶ This Working Group will work on methodological improvement and nation-specific research.

- ▶ This Working Group coordinates and assists in the implementation of the communications strategy



THE UAE ECOLOGICAL FOOTPRINT INITIATIVE

SUMMARY REPORT 2007-2010

YEAR ONE

In year one, the EFI's focus was on conducting in-depth data sourcing and analysis in order to evaluate the scope and representativeness of the EF value calculated in the *Living Planet Report*, along with determining the applicability of the EF as an evaluative tool.

The land categories that made up the Ecological Footprint for 2005 are outlined in *Figure 4*, which is a snapshot of the pressure placed by UAE residents on the Earth's various ecosystems and natural resources. The UAE's carbon Footprint component was a key driver in the high UAE results, comprising 83% of the overall Footprint (WWF, 2008).

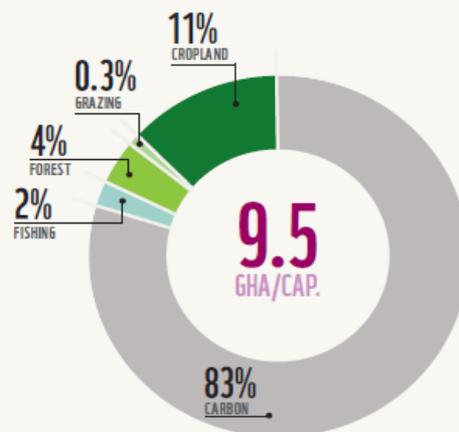


Figure 4: UAE Ecological Footprint by land type, 2005

Source: Al Basma Al Beeiya Brochure, EWS-WWF, 2010



Phase I – Research:

Activities:

- Review of population and energy data used in the calculation
- Understanding of the methodology behind the carbon Footprint component
- Contribution to Living Planet Report 2008

Outcomes:

- UAE has high per capita GDP and high standard of living
- It is an arid country and relies on natural resources from outside its borders to sustain its population (global responsibility)
- Maintaining a high standard of living despite the harsh arid climate is particularly energy demanding
- Options for a resource conscious lifestyle did not exist



Phase I – Research:

POPULATION:

- Review work revealed the use of incorrect population value to calculate per capita Footprint in LPR 2006.
- Better population data were provided for the re-issue of the LPR 2006 and for the LPR 2008
- The partnership recommended using FAOSTAT population data (4,496,000) for the LPR 2008 (local data was estimated at about 4.4 millions).

CARBON FOOTPRINT:

- There was no nationally-generated GHGs Inventory for the UAE for the year 2005.
- An official, nationally-generated 1994 GHGs Inventory for the UAE is available (about 60 Mt CO₂ yr⁻¹) UNFCCC
- An updated GHGs Inventory (with 2000 data) for the UAE will be released by early 2009 (in 2nd report to UNFCCC).
- Inclusion of gas embodied energy coefficients
- Recommendation to use SITC trade data



Phase I – Research:

United Arab Emirates
National Bureau of Statistics



دولة الإمارات العربية المتحدة
المركز الوطني للإحصاء

United Arab Emirates

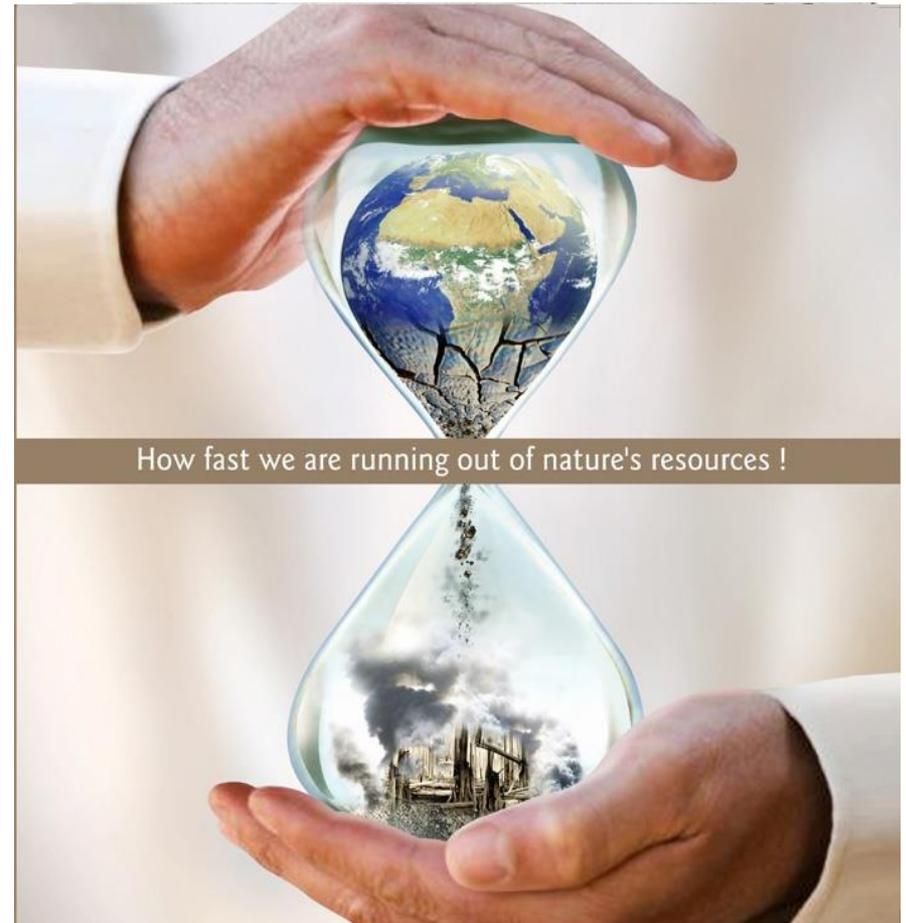
Tel : 0097 | 25592000
Fax : 0097 | 25592999
www.nbs.gov.ae
info@nbs.gov.ae



Phase I – Communication:

Activities:

- Streamlining definitions & understanding – Capacity building
- Stakeholders engagement
- Media engagement
- Web-site
- Ministerial council in Nairobi
- Environmental awareness - Energy Campaign

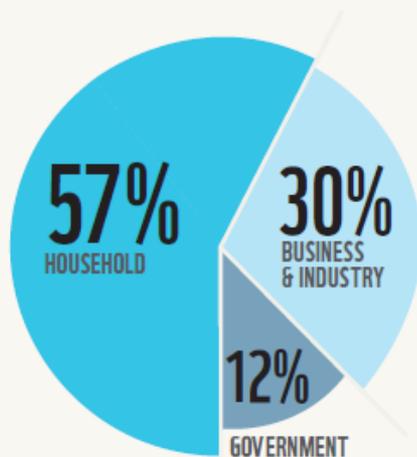




PHASE II – RESEARCH & COMMUNICATION

YEAR TWO

Once the UAE's EF value was established as a representative and useful indicator, the next step was to develop greater knowledge of key Footprint-driving sectors. This was accomplished by applying the Environmentally Extended Input-Output Analysis method, where researchers were able to break down the UAE's 2005 EF and identify Footprint 'hotspots'.



*Figure 5: UAE Footprint by demand sector
Contribution to the UAE's Footprint by the three main EF-driving sectors*

HEROES OF THE UAE

CAMPAIGN AIMED AT RAISING AWARENESS ON ENERGY AND WATER CONSERVATION

Energy Hero





PHASE II – RESEARCH & COMMUNICATION

bed - Dizio... Mail - Ales... SD 54 Search ... Is Europe ... My Research D... Top 10 bu... Madame F... Why E O ... Cardiff Uni... monteneg... UA...

https://www.youtube.com/watch?v=nP1nzCqoT9g UAE Ecological footprint video

Scopus ASB@home Science ISI GoogleMaps Kiva Arabic Phrases Salesforce OUP Oxford Bibliographies Altmetric it Harvest GFN Visualization Project Syndicate SDGs_Post 2015 process

YouTube

UAE Ecological Footprint
www.heroesoftheuae.ae

UAE Ecological Footprint Animation- English

WWF UAE

Up next

Autoplay

The Ecological Footprint Explained
Moovly
15,147 views
1:21

Ecological footprint: Do we fit on our planet?
Sustainability Illustrated
53,870 views
6:14

MAN
Steve Cutts
17,813,476 views
3:37

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Green Ninja
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One Planet Budgeting: making sustainability real with the ecological footprint
GoogleTalksArchive
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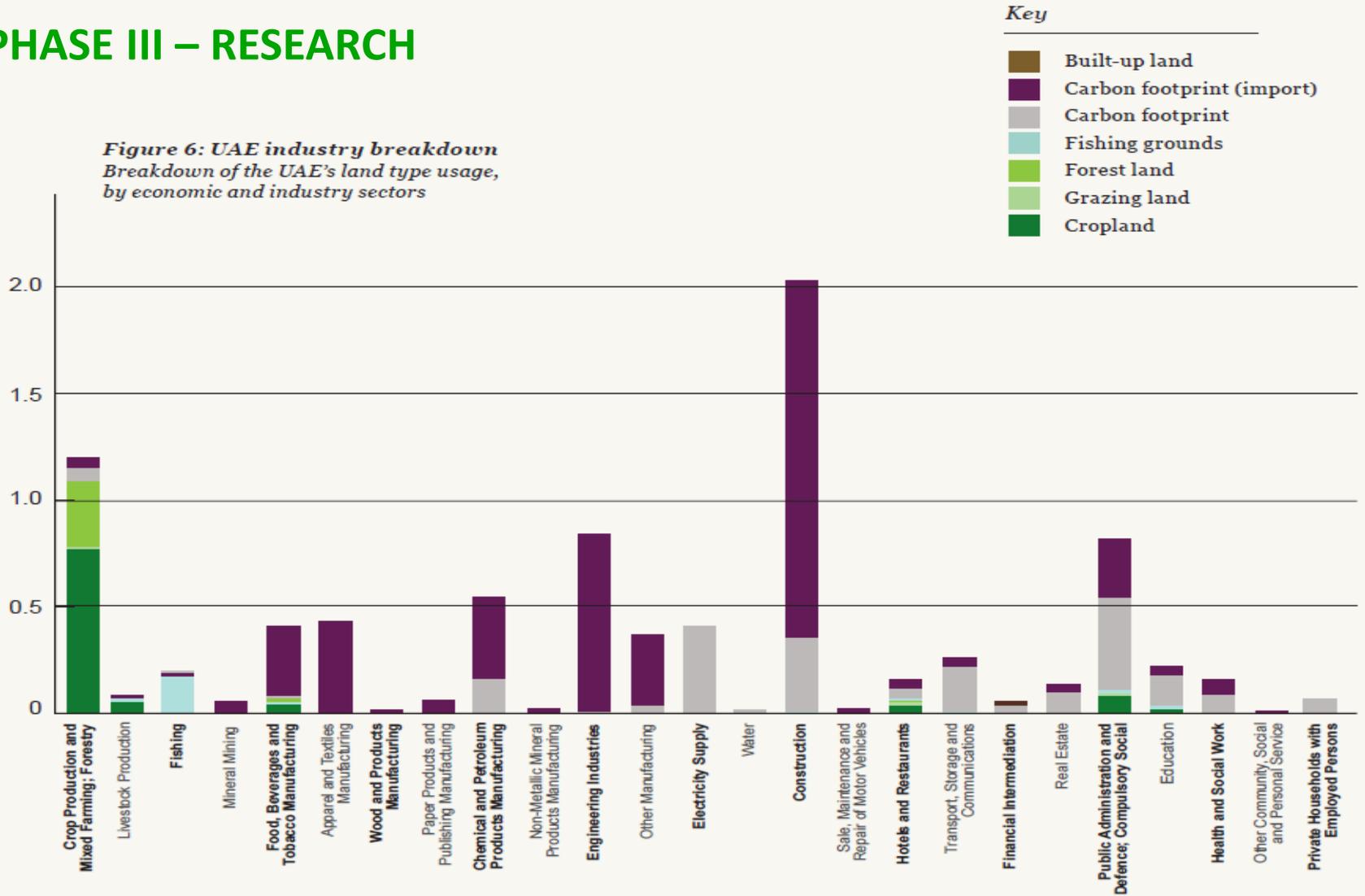
Ecological Footprint Informational Video

8:40 PM 3/8/2016



PHASE III – RESEARCH

*Figure 6: UAE industry breakdown
Breakdown of the UAE's land type usage,
by economic and industry sectors*



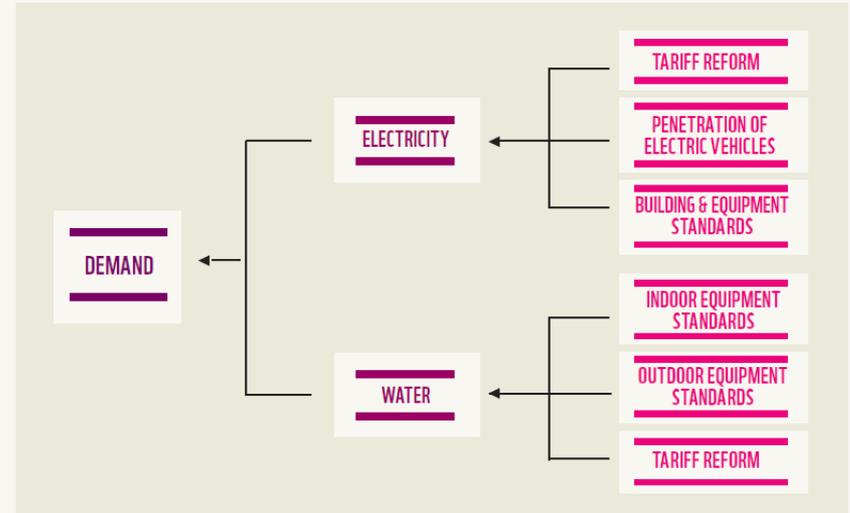


PHASE III – RESEARCH

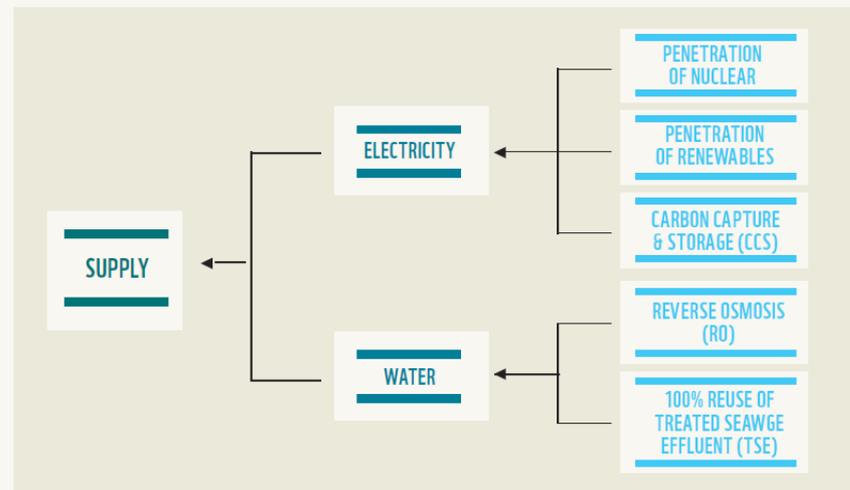
SCENARIO
MODELLING
TOOL DEVELOPED
TO ASSESS THE
IMPACT OF POLICIES
ON ABU DHABI'S
CO₂ EMISSIONS
AND ECOLOGICAL
FOOTPRINT UP
TO 2030

First of a kind scenario modelling tool developed to help assist policy-making process

Demand side measures



Supply side measures





Scenario definitions for Figures 8 and 9

SCENARIO A

- Four nuclear power plants by 2021
- 15% renewable energy by 2020
- 10% carbon capture and sequestration by 2030

SCENARIO B

- 200% increase in electricity tariff
- Four nuclear power plants by 2021
- 15% renewable energy by 2020
- 10% carbon capture and sequestration by 2030

SCENARIO C

- Indoor and outdoor water equipment standard
- 100% TSE reuse by 2030
- Installation of 13 reverse osmosis (RO) plants by 2018-2030

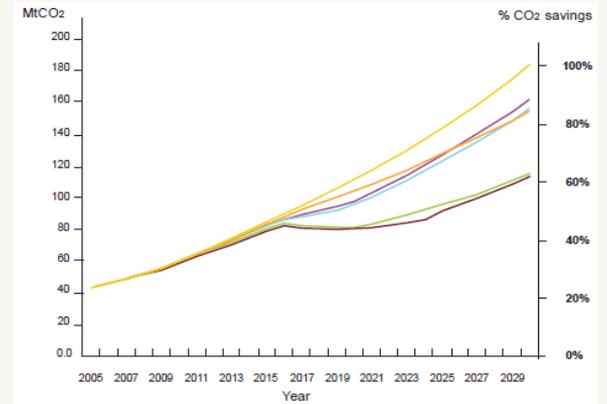
SCENARIO D

- 200% increase in electricity and water tariff by 2030
- 50% electric vehicle penetration by 2030
- Four nuclear power plants by 2021
- 15% renewable energy by 2020
- 10% carbon capture and sequestration by 2030
- 100% TSE reuse by 2030

SCENARIO E

- Strong building envelope standard with 60% reduction in cooling demand
- High-end electrical equipment standard
- Indoor and outdoor water equipment standard
- Four nuclear power plants by 2021
- 15% renewable energy by 2020
- 10% carbon capture and sequestration by 2030
- 100% TSE reuse by 2030
- Installation of 13 RO plants by 2018-2030

Figure 8: Hypothetical scenarios for Abu Dhabi's CO₂ emissions
Percentage reduction of Abu Dhabi's CO₂ emissions for five hypothetical scenarios compared to the baseline (2005-2030)



Key
 Business as usual
 Scenario A
 Scenario B
 Scenario C
 Scenario D
 Scenario E

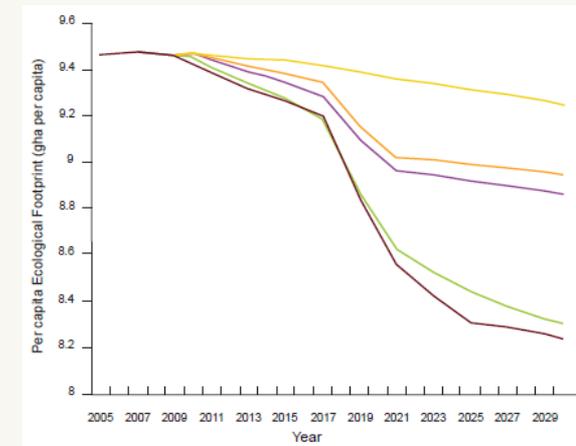


Figure 9: Hypothetical scenarios for the UAE's Ecological Footprint
Reduction in the UAE's Ecological Footprint per capita for hypothetical scenarios compared to the BAU baseline (2005-2030)

Key
 Business as usual
 Scenario A
 Scenario B
 Scenario D
 Scenario E

UAE ENERGY EFFICIENCY LIGHTING STANDARD

WHAT DOES IT
MEAN FOR YOU?

WHY A LIGHTING STANDARD?



The UAE has one of the highest Ecological Footprints per capita. This means we waste a lot of resources such as energy, water, and goods. If everyone lived the same way, we would need 4.5 planets to sustain us.



71%

OF THE UAE'S ECOLOGICAL FOOTPRINT IS FROM CARBON, SO REDUCING ENERGY USE WILL MEAN LESS CO₂ BEING EMITTED TO THE ATMOSPHERE

57%

OF THE UAE'S ECOLOGICAL FOOTPRINT COMES FROM HOUSEHOLDS

20%

OF ELECTRICITY CONSUMED BY HOUSEHOLDS GLOBALLY IS USED FOR LIGHTING



ENERGY EFFICIENT LIGHTS PROVIDE
EXCELLENT
ENERGY SAVING POTENTIAL

HOW DOES THE STANDARD WORK?

EFFECTIVE FROM MID 2014

The standard prevents low quality indoor bulbs from entering the UAE market. It considers energy efficiency, electrical safety, hazardous chemical limits, functionality and safe disposal. *(Exceptions are made for specialised lighting such as those in hospitals and laboratories.)*

The country will be supplied with the following high efficiency bulbs:



COMPACT FLUORESCENT LAMPS (CFLs)
Much more efficient than incandescents



LIGHT EMITTING DIODES (LEDs)
Offer high efficiency and much longer lifetimes than most lamps



HALOGENS
More efficient than traditional incandescents



High quality and energy efficient bulbs offer a wide range of mood lighting

HOW DO WE BENEFIT?

Cuts UAE energy consumption annually by up to

500 MW

EQUAL to

Not needing to use an average gas power station for

6 months



Significant CO2 emission reductions of approx

940,000 tonnes/year

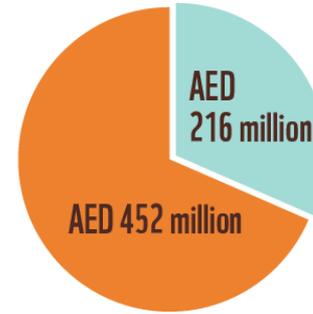
EQUAL to

Removing **165,000 cars** off the road annually



UAE can save

AED 668 million/year



- net savings from households' reduced electricity bills
- savings from the government in terms of reduced subsidies

A medium size villa in Dubai can save up to

AED 2,315/year



SOURCES

Emirates Authority for Standardisation and Metrology. Emirates Wildlife Society in association with WWF. Executive Affairs Authority. International Energy Agency. WWF.



المعهد الإماراتي للمواصفات والمقاييس
Emirates Authority For Standardization & Metrology



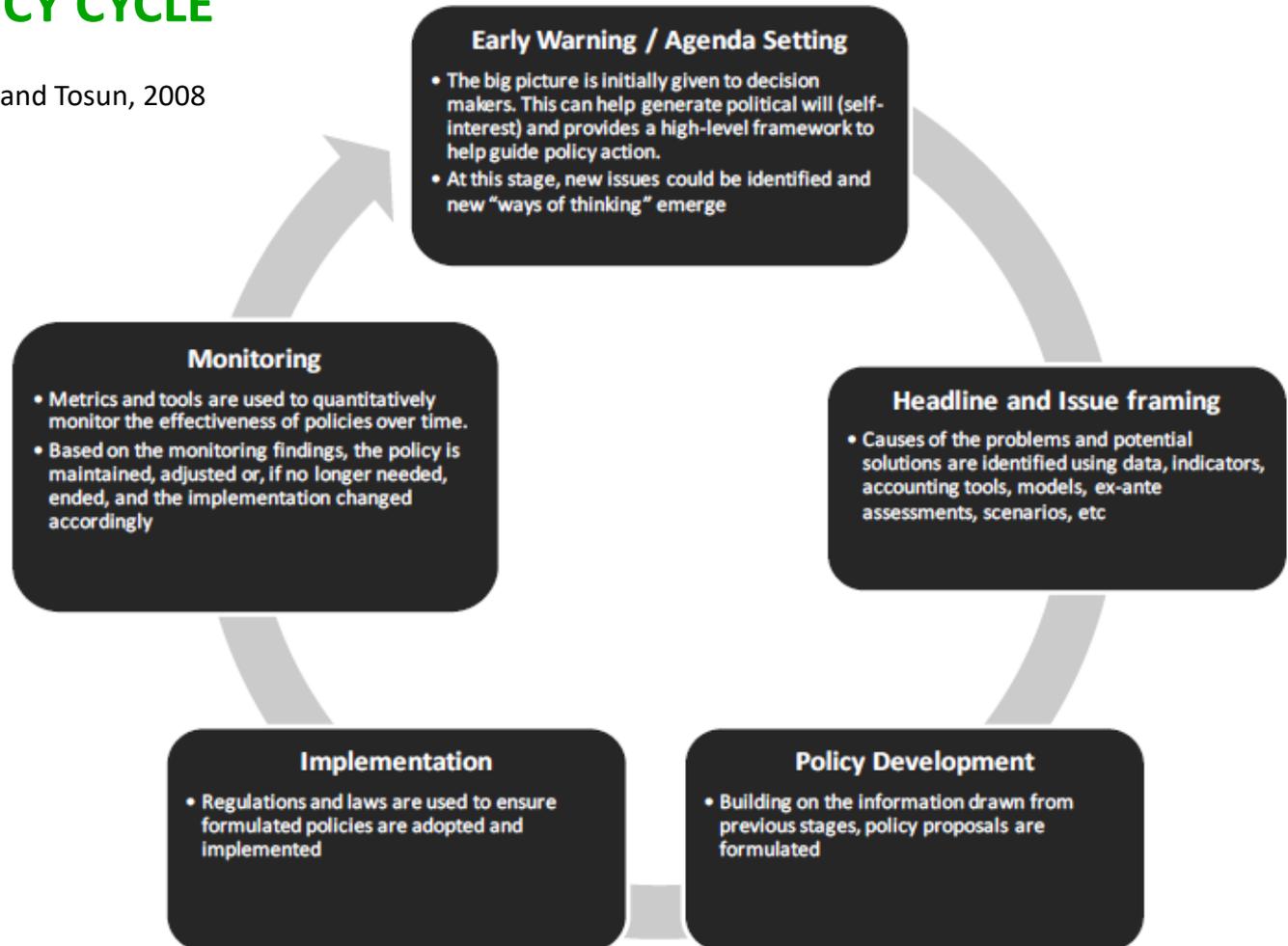
The UAE Energy Efficiency Lighting Standard is a step taken by the UAE Ecological Footprint Initiative, which is a public-private partnership between the Ministry of Environment and Water, the Environment Agency – Abu Dhabi, EWS-WWF, the Global Footprint Network and Emirates Authority for Standardization and Metrology, working to develop science-based policy recommendations to help reduce the UAE's carbon emissions and per capita Ecological Footprint.

Find out more at www.ewswwf.ae and www.esma.gov.ae



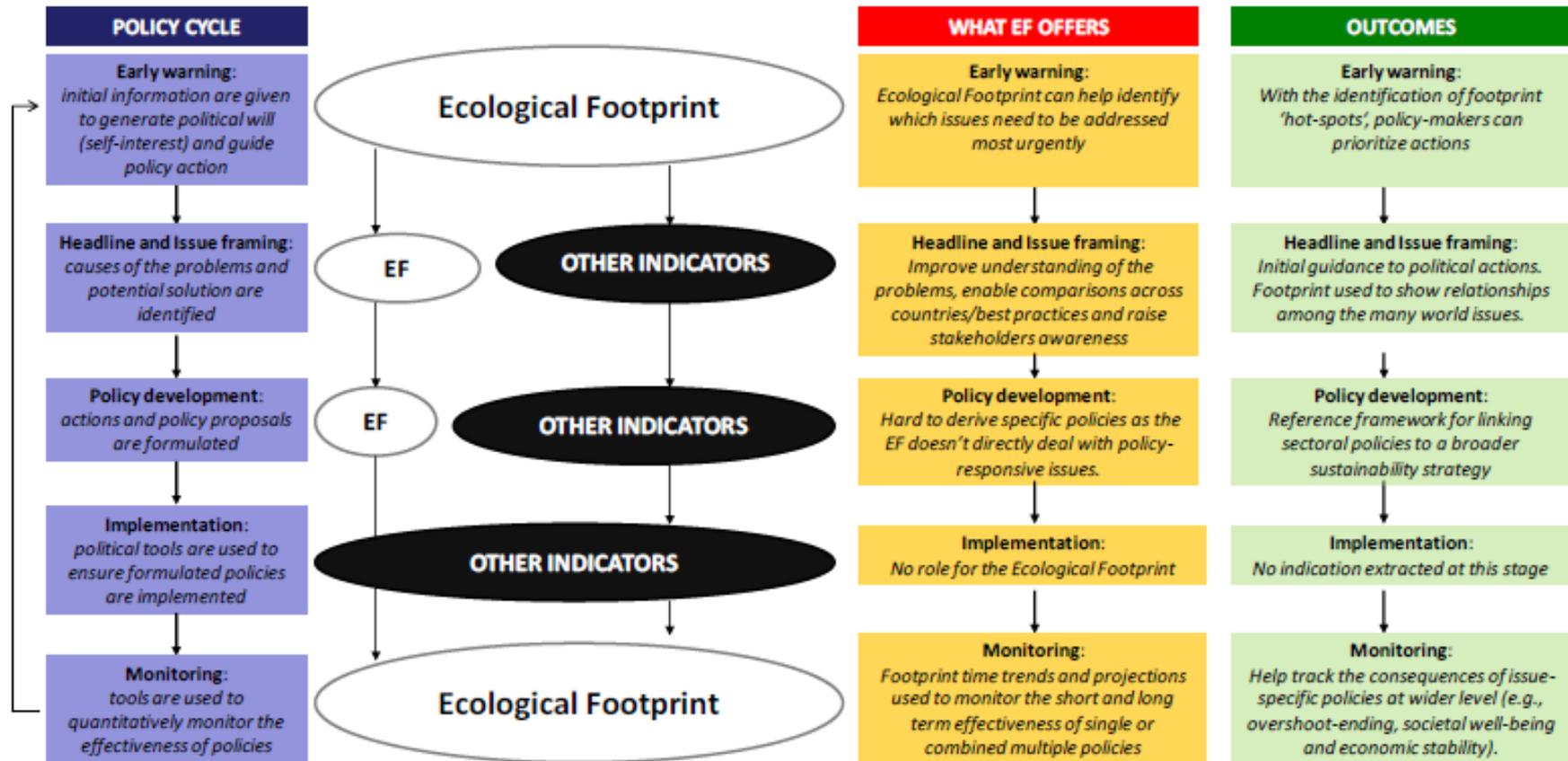
FIVE-STEP POLICY CYCLE

Source: adapted from Knill and Tosun, 2008





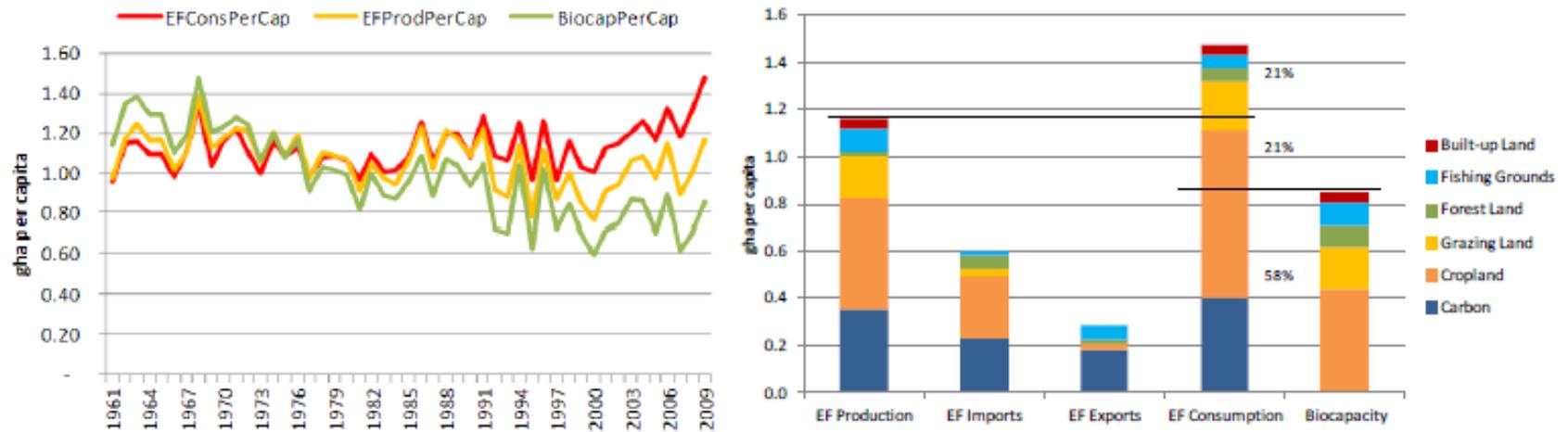
ECOLOGICAL FOOTPRINT AND FIVE-STEP POLICY CYCLE





EARLY WARNING

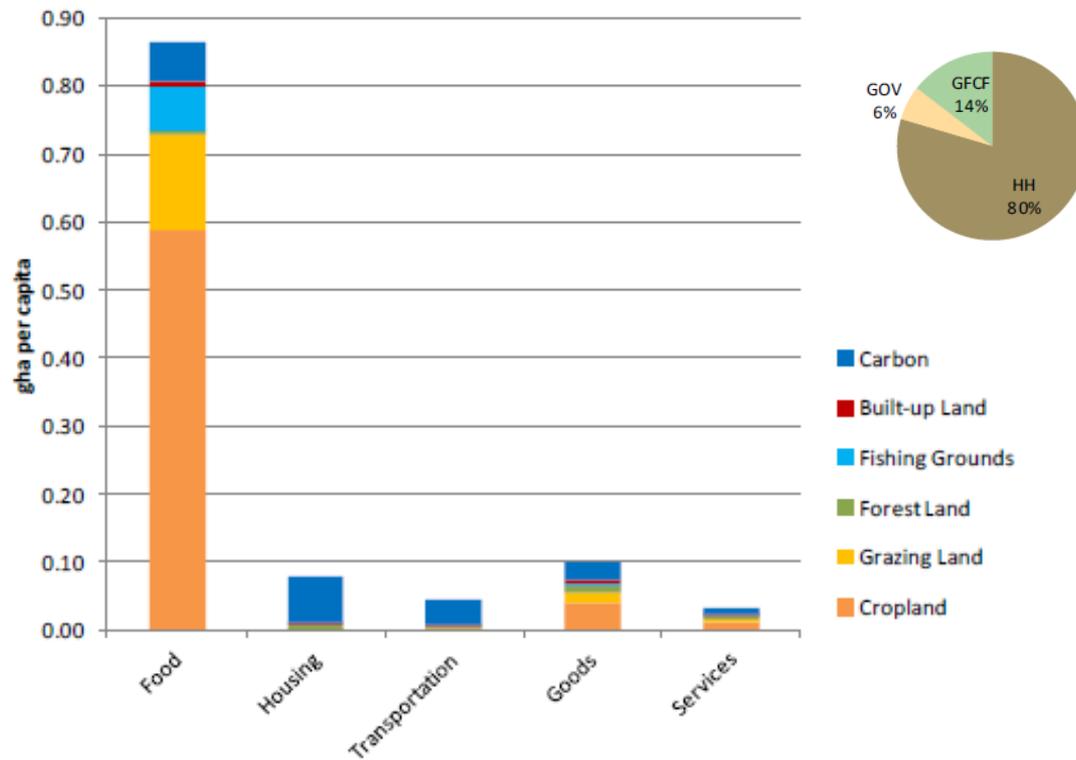
FIGURE 3: Morocco's Ecological Footprint of production (EF_P) and consumption (EF_C) activities compared to available biocapacity (BC), 1961–2009 (left graph) and their detailed disaggregation (right graph) for the year 2009.





HEADLINE AND ISSUE FRAMING

FIGURE 4: Breakdown of the per capita Ecological Footprint of an average Moroccan resident, by land type and main consumption category, in 2009.





HEADLINE AND ISSUE FRAMING

Resource Throughput

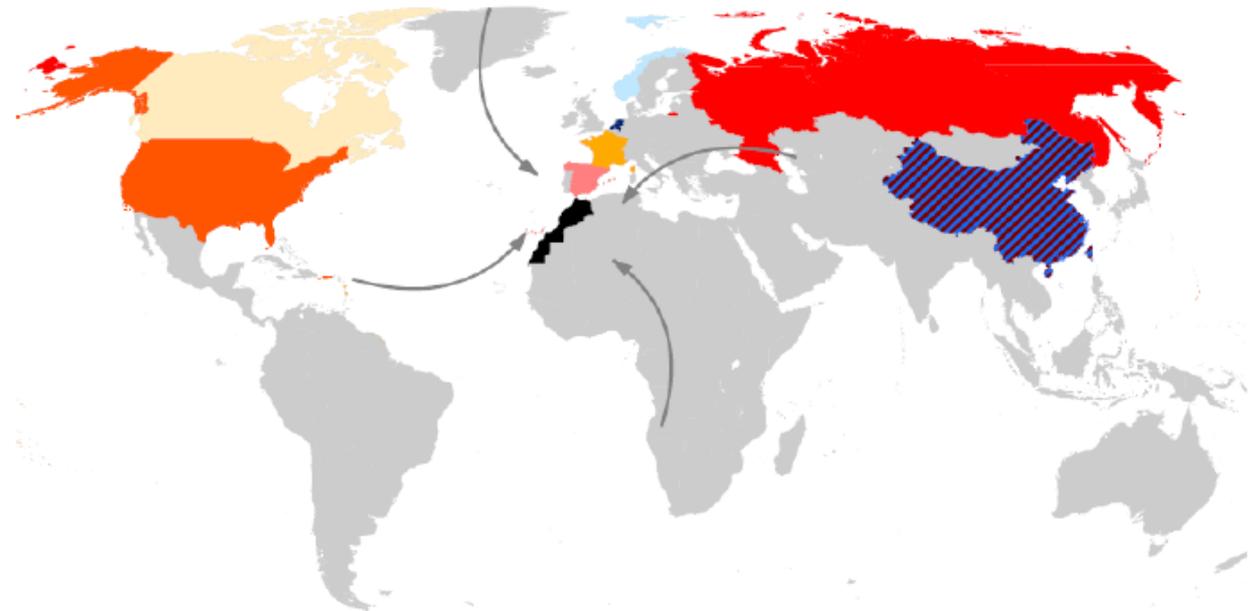


Fig. 6 – Cropland Footprint flows through the Morocco's economy, in global hectares, 2010. Inputs to the economy are local production and imports. Outputs from the economy are exports and internal consumption. The sum of the inputs is equal to the sum of outputs; from the Ecological Footprint point of view this relationship can be expressed as $EF_P + EF_I = EF_C + EF_E$.



HEADLINE AND ISSUE FRAMING

FIGURE 5: Top three exporters to (top graph) and importers from (bottom graph) Morocco of cropland (shade of orange), fish (shade of blue) and carbon (shade of red) Footprint, 2009. Multiple colors are used for countries with which Morocco is trading more than one type of embedded biocapacity.



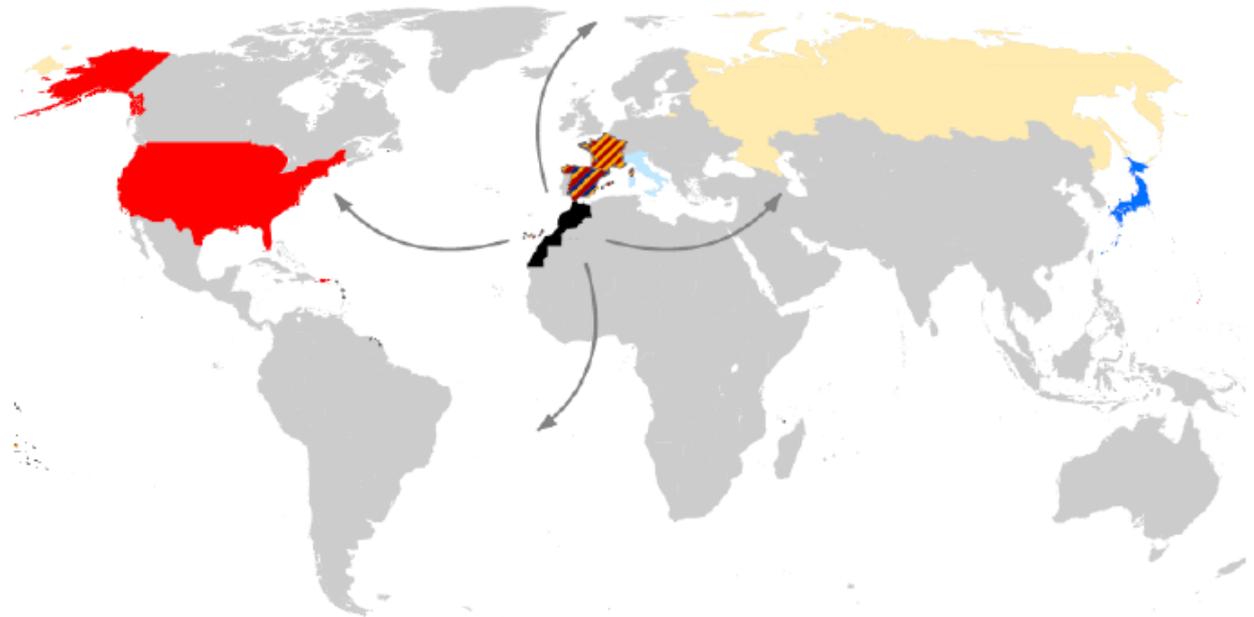
Three Highest Importers to Morocco of Fish, Cropland and Carbon

5 % Morocco Fish Imports	12 % Morocco Cropland Imports	8 % Morocco Carbon Imports
19 % Morocco Fish Imports	15 % Morocco Cropland Imports	11 % Morocco Carbon Imports
35 % Morocco Fish Imports	27 % Morocco Cropland Imports	24 % Morocco Carbon Imports



HEADLINE AND ISSUE FRAMING

FIGURE 5: Top three exporters to (top graph) and importers from (bottom graph) Morocco of cropland (shade of orange), fish (shade of blue) and carbon (shade of red) Footprint, 2009. Multiple colors are used for countries with which Morocco is trading more than one type of embedded biocapacity.



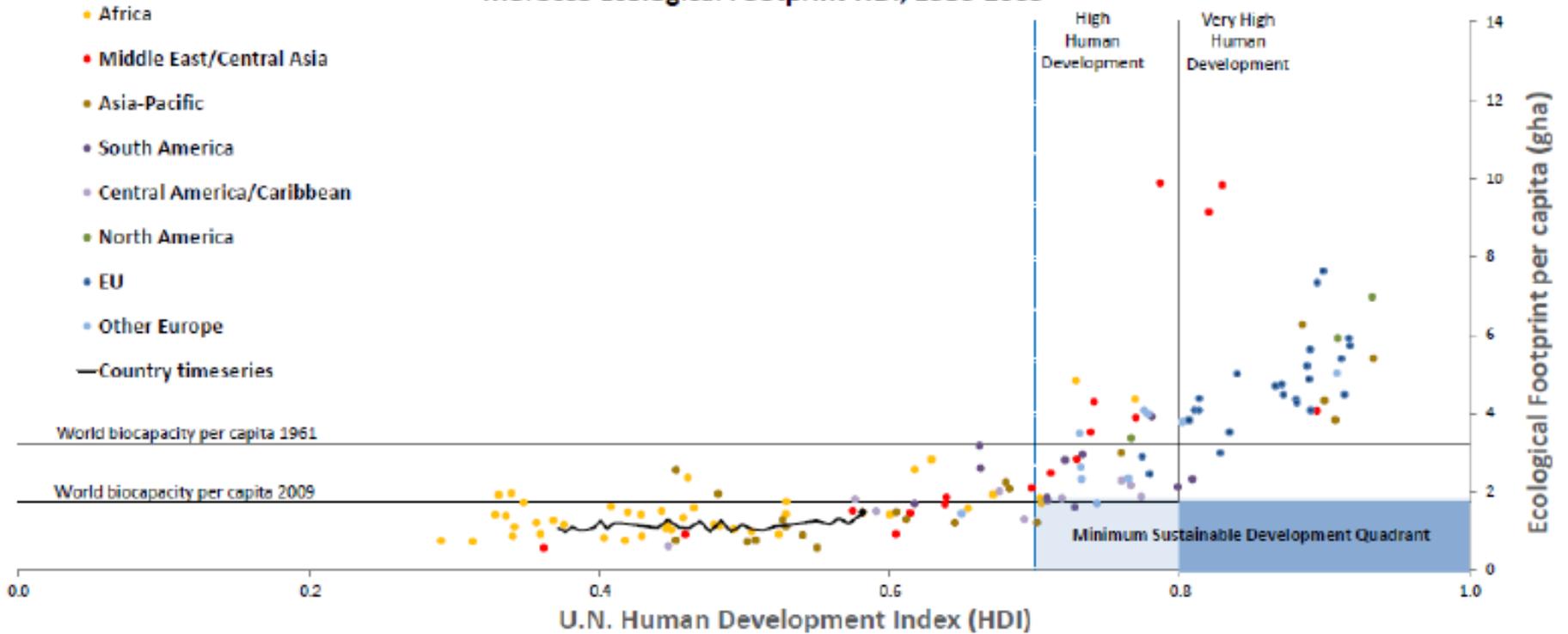
Three Highest exports from Morocco of Fish, Cropland and Carbon

	5 % Morocco Fish Exports		7 % Morocco Cropland Exports		11 % Morocco Carbon Exports
	7 % Morocco Fish Exports		24 % Morocco Cropland Exports		13 % Morocco Carbon Exports
	62 % Morocco Fish Exports		25 % Morocco Cropland Exports		



MONITORING

Morocco Ecological Footprint-HDI, 1980-2009





ECOLOGICAL FOOTPRINT: INSTRUCTION FOR USE

- While a systemic view is essential in dealing with sustainability, decisions and policies are implemented at national and local level.
- Multiple and diverse indicators are needed to fully track sustainability and bridge the science-policy gap.
 - **Punctual issue-specific indicators** needed to identify, draft and implement specific policies
 - **Systemic indicators** needed to verify the cumulative effects of the various target-specific policies and monitor sustainability's trajectories



ECOLOGICAL FOOTPRINT: INSTRUCTION FOR USE

- EF can provide **macro-level guidance** to the government, helping ensure that different sectoral strategies are **coherent** in their goals and quantitative targets, and monitor the **combined effect of such policies**.
- The main value-added of EF is highlighting trade-offs between human activities via **both a final aggregate indicator and an accounting framework** that shed light on the relationships between many of the anthropogenic drivers that contribute to ecological overshoot.
- The transition from several specific environmental issues to the global interconnected dimension of sustainability is crucial, and EF could offer a reference framework for this. **From “silo thinking” to “systemic thinking”**.
- EF served as a tool to bring together different stakeholders.

Building a global academic network



- York University will be the Hub
- We are searching for academic and government research partners

**THE
ECOLOGICAL
FOOTPRINT
INITIATIVE**

Measuring Sustainability
Locally, Nationally
and Globally

 Global Footprint Network®
Advancing the Science of Sustainability

 environmental studies

 YORK
UNIVERSITY

Earth Overshoot Day



- **Global Reach: 1.9 media impressions**
- **1800+ editorial articles in 84 countries**
- **Articles had 170,000+ Social Media Shares**
- **30+ partners**



Le Monde.fr ÉDITION GLOBALE

Planète

la Repubblica.it

Il mondo in diretta

24 ore su 24

Les Echos.fr



THE HINDU



Education and Outreach

Personal Footprint Calculator



The Footprint Calculator is one of the world's most popular environmental tools. It has served more than 13 million users in the last ten years.

Benefits include:

- Enables cities to more deeply engage with residents on sustainability issues.
- Inspires users to move from awareness to action.
- Is visual, easy to understand, scalable, and highly customizable.

City Applications: Portugal



We are working with 6 cities in Portugal on a novel multi-year project with partners Zero and the University of Aveiro.

Thank You!

Earth Overshoot Day #movethedate #oneplanet	www.overshootday.org
Footprint Calculator:	www.footprintcalculator.org
Footprint Data Explorer:	data.footprintnetwork.org
Cities, Government Engagment	www.footprintnetwork.org/cities

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