

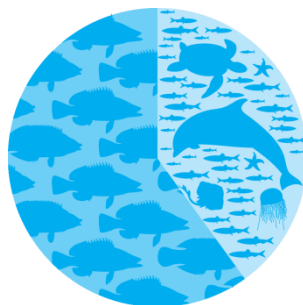
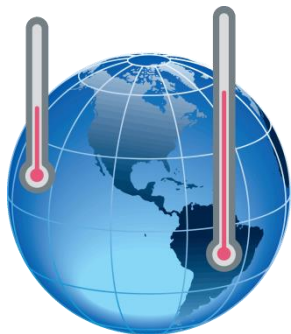


**INTERNATIONAL PERSPECTIVES
SUSTAINABLE DEVELOPMENT GOALS & THE
ROLE OF CITIZEN SCIENCE**





Knowledge Communities & Science Policy



July 9, 2015

M-15-16

MEMORANDUM FOR THE HEADS OF EXECUTIVE DEPARTMENTS AND AGENCIES

FROM: Sharyl Donovan
Deputy
Director of Management and Budget

Dr. John P. Holdren
Director
Office of Science and Technology Policy

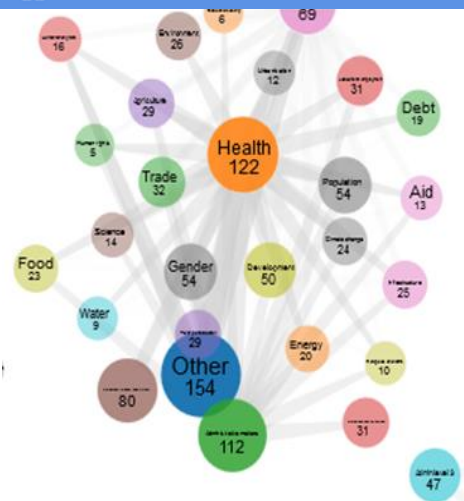
SUBJECT: Multi-Agency Science and Technology Priorities for the FY 2017 Budget

Scientific discovery, technological breakthroughs, and innovation are the primary engines for expanding the frontiers of human knowledge and are vital for responding to the challenges and opportunities of the 21st century. The Nation depends on science, technology, and innovation to promote economic growth and job creation, maintain a safe and sufficient food supply, improve the health of Americans, move toward a clean energy future, address global climate change, manage competing demands on environmental resources, and ensure the Nation's security.

Federal government funding for research and development (R&D) is essential to address societal needs in areas in which the private sector does not have sufficient economic incentive to make the required investments. Key among these is basic research—the fundamental, curiosity-driven inquiry that is a hallmark of the American research enterprise and a powerful driver of new technology. Simply supporting research is not sufficient, however. Federal agencies should ensure that the results of that research are made available to other scientists, to the public, and to innovators who can translate them into the businesses and products that will improve all of our lives.



UN SYSTEM DATA CATALOG





United Nations Environment Programme
environment for development



Climate Change



Disasters & Conflicts



Ecosystem Management



Environmental Governance



Chemicals & Waste



Resource Efficiency



Environment Under Review

LATEST: Launch of the [GEO-8 Pan-European assessment](#) in Batumi

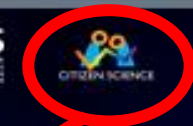
[Communities of Practice](#)

[Web Intelligence](#)

[Mapping](#)

[Subscriptions](#)

Science Policy Portal



Citizen Science Portal

UNEP Live

OUR CHANGING ENVIRONMENT: PLACE BY PLACE


Country/Region/Global

or


Theme

or


SDG Synergies

or


Search

National Data, Open Data & Project

The image shows a screenshot of a web application interface. On the left, there is a map of East Africa with Kenya highlighted. On the right, a 'Country Profile' sidebar for Kenya is visible, showing details like Region (Eastern Africa), Currency (Kenyan Shilling (KES)), Surface area (551313 square kilometres), and Population in 2011 (41610,000). In the center, a modal window titled 'Availability of Energy Sources, by County - 2009' is open, displaying a table with columns for County, Electricity, Pressure Lamp, and Lantern. The table lists 14 counties with their respective percentages and bar charts for each energy source.

County	Electricity	Pressure Lamp	Lantern
1 Baringo	9.56%	0.39%	0.39%
2 Bomet	4.32%	0.33%	0.33%
3 Bungoma	4.51%	0.5%	0.5%
4 Busia	6%	0.32%	0.32%
5 Elgeyo Marakwet	7.15%	0.28%	0.28%
6 Embu	14.89%	0.75%	0.75%
7 Garissa	11.57%	0.56%	0.56%
8 Homa Bay	3.32%	0.48%	0.48%
9 Isiolo	18.51%	0.49%	0.49%
10 Kakamega	39.83%	0.82%	0.82%
11 Kericho	5.61%	0.5%	0.5%
12 Kericho	11.76%	0.4%	0.4%
13 Kiambu	53%	0.69%	0.69%
14			

Using Near Real-Time Monitoring, Traditional Knowledge, Citizen Science Knowledge Sources

UNEP Live

SDG Synergies Select Country/Region/Global Select Theme

Home > Theme

Mapping Communities of Practice Select Language Search

Air Quality-Health-Climate Change

Maps Graphs Web Intelligence

Click here to change parameter

- PM 2.5 ($\mu\text{g}/\text{m}^3$)
- PM 10 ($\mu\text{g}/\text{m}^3$)
- Ozone ($\mu\text{g}/\text{m}^3$)
- Carbon Monoxide (mg/m^3)
- Sulfur Dioxide ($\mu\text{g}/\text{m}^3$)
- Nitrogen Dioxide ($\mu\text{g}/\text{m}^3$)

Showing Values For PM 2.5 ($\mu\text{g}/\text{m}^3$)

OpenAQ

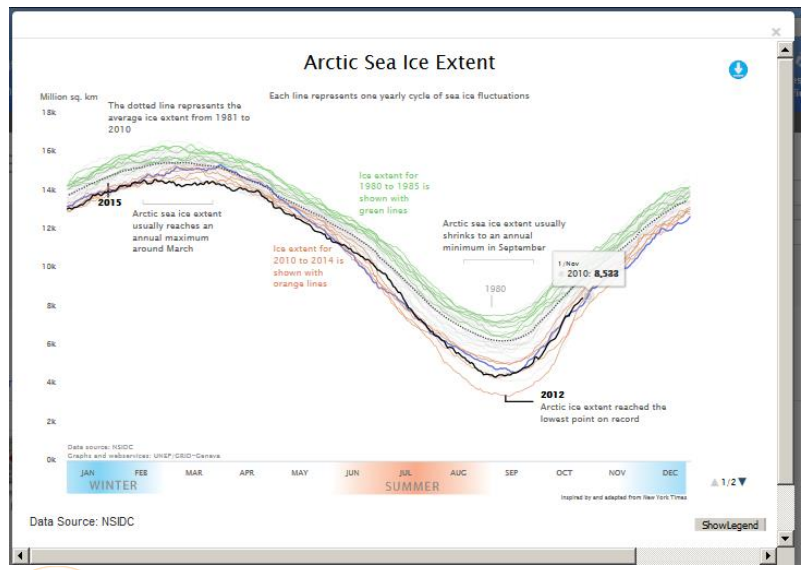
The Open AQ initiative collects and aggregates data from public real-time data sources for PM10, PM2.5, sulphur dioxide (SO2), carbon monoxide (CO), nitrogen dioxide (NO2), ozone (O3), or black carbon (BC).

The mechanisms that aggregate the data from disparate sources is open source and available at github.com/openaq

Data source: All originating official data sources can be found on the OpenAQ "Sources" Page

The following criteria are used by OpenAQ to collect the data:

- Data must be of one of the following pollutants: PM10, PM2.5, SO2, CO, NO2, O3, BC, selected as they are the most commonly measured major outdoor pollutants. Black carbon is also selected due to its impacts on regional and global climate.
- Data must be from an official-level stationary, outdoor air quality monitoring station or unit, defined as data produced by a government entity or international organization. At this stage, data



HEALTH

HealthMap is an established global leader in utilizing online informal sources for disease outbreak monitoring and real-time surveillance of emerging public health threats. It delivers real-time intelligence on a broad range of emerging infectious diseases for a diverse audience including libraries, local health departments, governments, and international travellers.

Outbreaks Near Me - Subscribe to the Mobile application

Contribute to Disease Daily

129 alerts for all diseases, current location, in the past week

Outbreaks in Current Location

Zika outbreak

Meningitis (1)

2 Vectorborne Alerts

Zika virus (2)

2 Hemorrhagic Alerts

Crimean-Congo Hemorrhagic Fever (2)

HealthMap About Mobile Projects Disease Daily Log In



新打造的空气水污染源地图

详细的描述及详尽的数据，全地图模式呈现
让你对周边环境一目了然

WASTE ATLAS

Choose Data Category

Apply to the Map

The Waste Atlas is a crowdsourcing free access map that visualizes municipal solid waste management data across the world for comparison and benchmarking purposes.

Participation in the Sustainable Development Goals

SDG Synergies

SDG Demo: [Play](#); [Download](#)

[Feedback](#)

[SDGs](#)

[MEAs](#)

[Synergies](#)

[Ontologies](#)

[Web Intelligence](#)

Search for a term:



Co-production of knowledge through active participation

UNEP **Live** Communities of Practice

Home Communities of Practice

Communities of Practice / GEO-6 Community of Practice - IGMS

GEO-6 Community of Practice - IGMS



GEO-6 Community of Practice - IGMS

- Community activity
- Community blog
- Community bookmarks
- Community discussion
- Community files
- Community news
- Community pages

Online members



Add a topic of discussion

EDIT COMMUNITY

INVITE FRIENDS

LEAVE COMMUNITY

CREATE A SUB-COMMUNITY

Welcome to the GEO-6 Community of Practice!

With its core mandate of 'keeping the global environment under review', UNEP coordinates integrated environmental assessments, which involve extensive consultations and participatory processes to deliver scientific findings - underpinned by reliable evidence - to policy makers so that they can make informed decisions. Five Global Environment Outlook (GEO) assessment reports have been produced to date, and now UNEP is now embarking on GEO-6.

Through the public GEO-6 CoP, stakeholders will have access to national, regional and global data and information, through UNEP Live, plus schedules, meetings, and relevant background papers and reports.

Following the Intergovernmental Multi-stakeholder Consultation, governments and stakeholders will be asked to nominate experts to participate in different GEO-6 processes. Nominated experts will be selected to participate in global and/or regional assessments, data and information sharing; content development; policy analysis; and reviewing of GEO-6 outputs.

Separate specific CoPs will be opened up within the GEO-6 CoP to support different components of the assessments. These specific CoPs will be moderated by world renowned experts who will be responsible for coordinating and motivating the substantive discussions and analyses under selected topics or for individual regions, and

Moderator: Admin

Community members: 83

GEO 6
NOMINATIONS
PORTAL

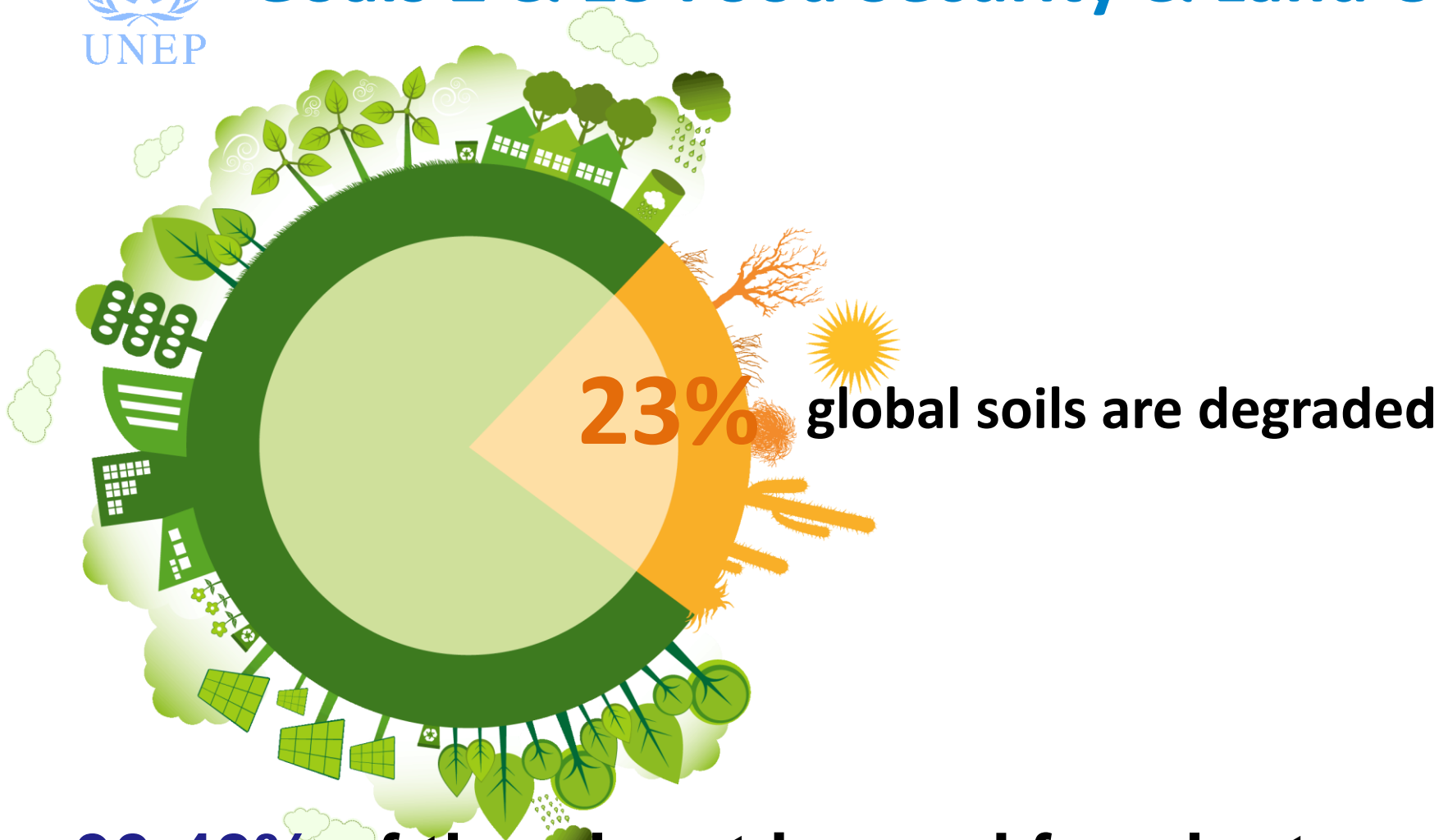
AFRICA REGIONAL
ASSESSMENT

ASIA PACIFIC
REGIONAL
ASSESSMENT

EUROPEAN
REGIONAL
ASSESSMENT



Goals 2 & 15 Food Security & Land Use



30-40% of the planet is used for plant production



Land Use



Early 1900s



Today

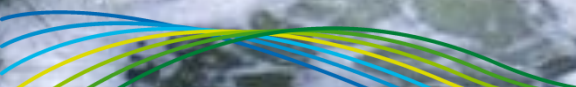
30-40% of the planet is used for plant production



GOAL 3 UNHEALTHY ENVIRONMENTS

GOAL 6 WATER QUALITY

90% wastewater in developing countries flows untreated into rivers, lakes and the sea





GOAL 11 Urbanization



60-80%

**of global energy
consumption
is used by urban cities**

75%

**of carbon emission comes
from urban cities**

GOAL 12 UNSUSTAINABLE PRODUCTION





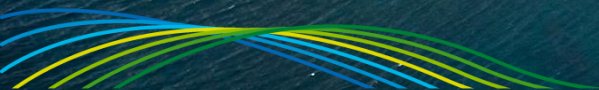
GOAL 13 WIDESPREAD OBSERVED IMPACTS

A CHANGING WORLD

Temperature increases, sea-level rise,
ocean acidification, changing seasons,
new rainfall patterns

GOALS 9 & 13 VULNERABLE STATES

threatened by sea level rise
and extreme events



GOALS 13, 14 & 15 CORAL REEFS

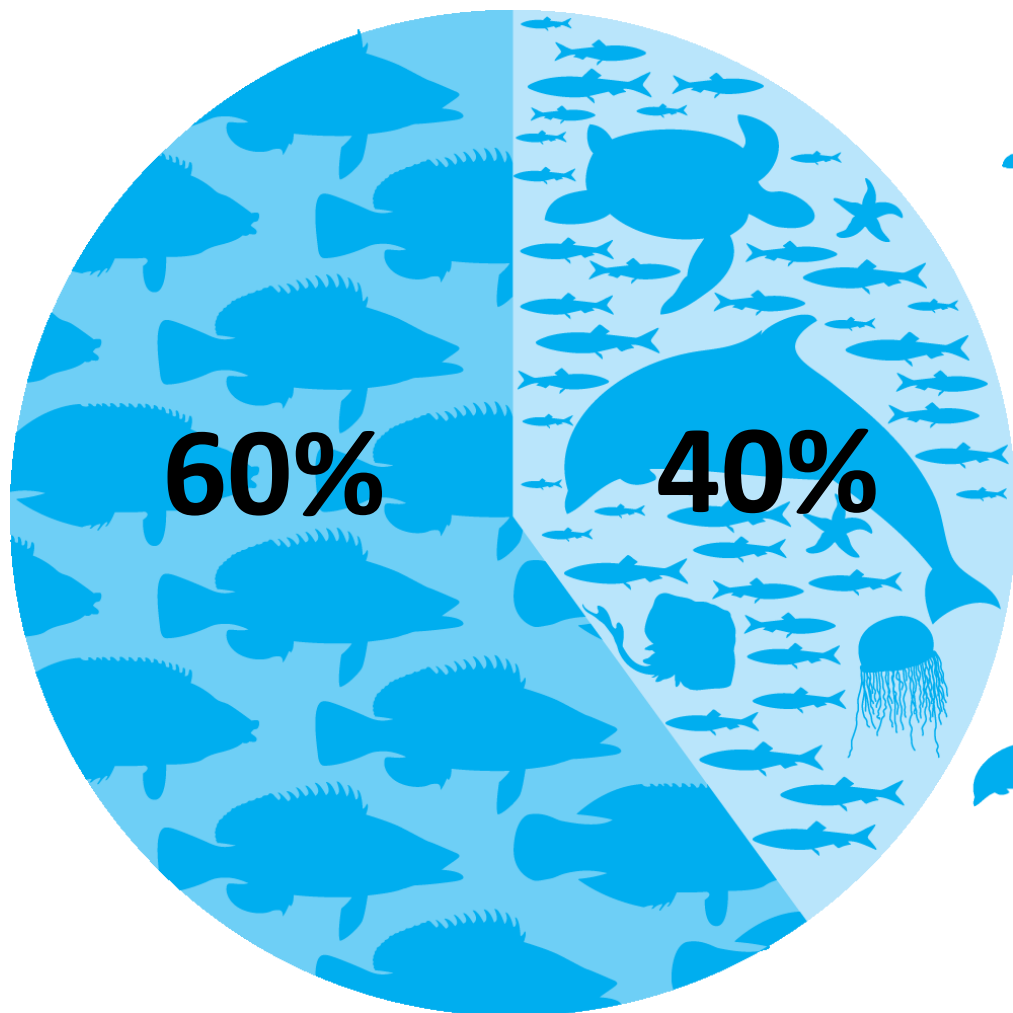
50% globally

threatened due to climate
change, coastal development
& land-based pollution





Goal 14 Fisheries



85,000 per year



600,000 per year

Goal 15 PROTECTED AREAS

40% natural vegetation legally protected by parks and indigenous reserves

>50% marine regions remain unprotected





COMMON

A

SHARING

WEALTH

OF

KNOWLEDGE