

Personal Journey: Science Advice in the Region

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WHY DOES BIODIVERSITY MATTER TO US?

The air you breathe, the water you drink and the food you eat all rely on biodiversity, but right now it is in crisis - because of us. What does this mean for our future and can we stop it?

WHY DOES BIODIVERSITY MATTER TO US?

For many people living in towns and cities, wildlife is often something you watch on television. But the reality is that the air you breathe, the water you drink and the food you eat all ultimately rely on biodiversity. Some examples are obvious: without plants there would be no oxygen and without bees to pollinate there would be no fruit or nuts

Others are less obvious - coral reefs and mangrove swamps provide invaluable protection from cyclones and tsunamis for those living on coasts, while trees can absorb air pollution in urban areas

Biodiversity Loss

- Biodiversity and ecosystem services are declining at an unprecedented rate
- We're well acquainted now with the startling prospects: 1 of every 8 birds, 1 of every 4 mammals and 1 of every 3 amphibians is threatened with extinction.
- The same is true of 6 of every 7 marine turtles, and of one-third of our reef-building corals
- Some 75% of genetic diversity of agricultural crops has been lost
- Three-quarters of world fisheries are fully or over-exploited
- The catalogue goes on.



Biodiversity Loss

The issue of biodiversity loss and degradation of ecosystem services is not a new thing. It has been recognized most poignantly since the publication of Rachel Carson's "Silent Spring" in 1962. The book documented the detrimental effects on the environment --particularly on birds -- of the indiscriminate use of pesticides.



2010 Biodiversity Targets



Agreed by the world's Governments during the World Summit on Sustainable Development in 2002

“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”



2010 Biodiversity Targets

**The world didn't achieve the
2010 Biodiversity Targets**



The World Failing in Biodiversity struggle, UN Chief warns

- Recent reports have warned that species are disappearing at up to 1,000 times the natural rate of disappearance because of human activity and now climate change.
- UN states have missed an agreed 2010 deadline to achieve "a significant reduction" in the rate of wildlife loss, the UN chief said. "We have all heard of the web of life. The way we live threatens to trap us in a web of death," he commented.



The World Failing in Biodiversity struggle, UN Chief warns

"Too many people still fail to grasp the implications of this destruction," UN Secretary General Ban Ki-moon warned as he called for greater international action to protect plants and animals. I urge all leaders present today to commit to reducing biodiversity loss."

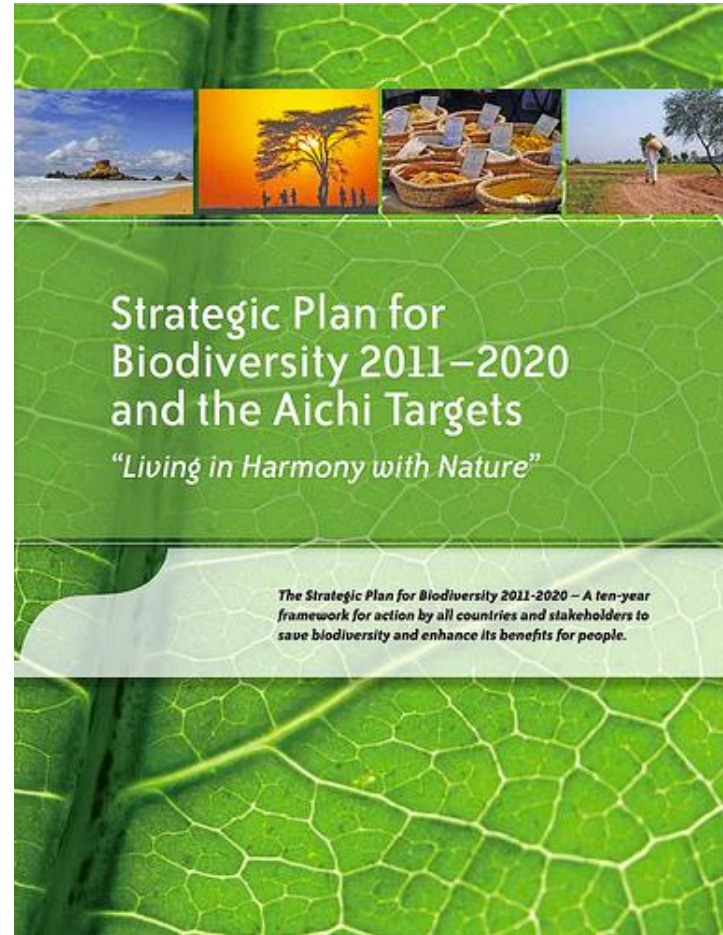
- April 2010



Aichi Biodiversity Targets

VISION

“By 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people”



Aichi Biodiversity Targets

Mission

- “Take effective and urgent action to halt the loss of biodiversity in order to ensure that by 2020 ecosystems are resilient and continue to provide essential services, thereby securing the planet’s variety of life, and contributing to human well-being, and poverty eradication
- To ensure this, pressures on biodiversity are reduced, ecosystems are restored, biological resources are sustainably used and benefits arising out of utilization of genetic resources are shared in a fair and equitable manner; adequate financial resources are provided, capacities are enhanced,
- Biodiversity issues and values mainstreamed, appropriate policies are effectively implemented, and decision-making is based on sound science and the precautionary approach”

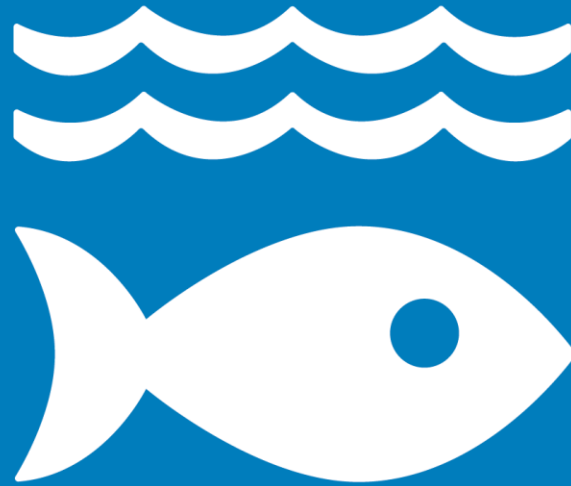
SUSTAINABLE DEVELOPMENT GOALS



15 LIFE ON LAND



14 LIFE BELOW WATER



Latest IPBES Findings (May 6, 2019)

Up to one million plant and animal species face extinction, many within decades, because of human activities, says the most comprehensive report yet on the state of global ecosystems.

Without drastic action to conserve habitats, the rate of species extinction – already tens to hundreds of times higher than the average across the past ten million years – will only increase, says the analysis

But doing so will require proactive environmental policies, the sustainable production of food and other resources and a concerted effort to reduce greenhouse-gas emissions

Politics of Biodiversity Loss

Interplay between nations, international organizations, business community and NGOs to halt biodiversity loss.



Biodiversity in the Political Agenda

The report sought to recapture the spirit of the United Nations Conference on the Human Environment - the Stockholm Conference (1972) - which had argued for environmental considerations into the formal political development debate. “Our Common Future” placed environmental issues squarely on the political agenda, thus putting the balance between environment and development into one single package.



Convention on Biological Diversity (CBD) Earth Summit 1992

- Conservation of biodiversity
- Sustainable use of biodiversity
- Access and benefit-sharing of genetic resources



My Experience as a Science Adviser

- Science Adviser to the Prime Minister of Malaysia (2010 – 2018)
- Secretary, National Science Council (2011 – 2018)
- Secretary, Global Science and Innovation Council for Malaysia (2011 – 2018)
- Member, Scientific Advisory Board to UN Secretary- General Ban Ki-moon (2013 – 2016)
- Chief Science Advisors and Equivalents Group, Asia- Pacific Economic Cooperation (APEC)(2013 – 2017)
- Member, Scientific Advisory Board to the President of the Islamic Development Bank (2017 – present)
- Vice-Chair, Governing Council, UN Technology Bank for Least Developed Countries (2018 – present)

Science -Policy Nexus

- Co-Chair (with Sir Robert Watson) of the Millennium Ecosystem Assessment (2001 – 2005)
 - This is the precursor of IPBES. Undertaken by 2,000 experts from 95 countries to assess the state-of-health of the world's ecosystems
- Founding Chair of the 132- Member States Intergovernmental Panel on Science – Policy Advice on Biodiversity and Ecosystem Services

Science Diplomacy in Action

Earth Summit 1992



Science Diplomacy in Action

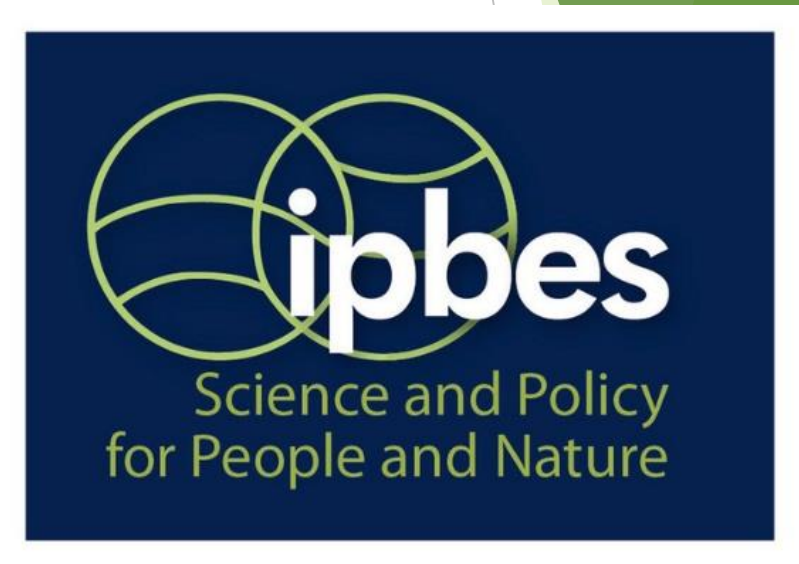


Science Diplomacy in Action



Birth of IPBES

- A need quickly became apparent for a sustained, ongoing mechanism to bridge the gap between policymaking and the scientific world's ever-accumulating insights
- In response, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) was established in 2012



Birth of IPBES

Zakri to head UN biodiversity panel

PARIS: A prominent Malaysian biologist was yesterday named first chief of a United Nations scientific panel which aims to turn the world's spotlight on species loss, as a Nobel-winning counterpart has done for climate change.

In their first plenary meeting, members of the Intergovernmental Platform on Biodiversity and Ecosystem Services, or IPBES, chose Zakri Abdul Hamid as chairman, a spokesman said.

Zakri, 64, will serve for three years under the decision, reached in tough overnight discussions in the former West German capital of Bonn, a European delegate added.

The idea of IPBES was floated in January 2005 by the then French president, Jacques Chirac, but took five years to be approved, and two more years to reach organisational status.

It has 102 nations as members, according to its website.

Its goal is to emulate the success of the UN's Intergovernmental Panel on Climate Change (IPCC), in which thousands of scientists draw up an assessment of global warming to help policymakers.

IPBES will also quantify damage inflicted on life-sustaining ecosystems long taken for granted, from depleted water tables to deracinated mangroves to rivers and air poisoned by pesticides and pollution.

Some biologists say Earth is in the early stages of a sixth mass extinction, a man-made phenomenon driven by habitat loss, hunting, introduced species and climate damage.

The current pace of species die-off is 100 to 1,000 times higher than average.

Science - Policy Nexus

The interface between science and public policy formation from the perspective of what policy makers require and what the science community can provide, both responsively and proactively.

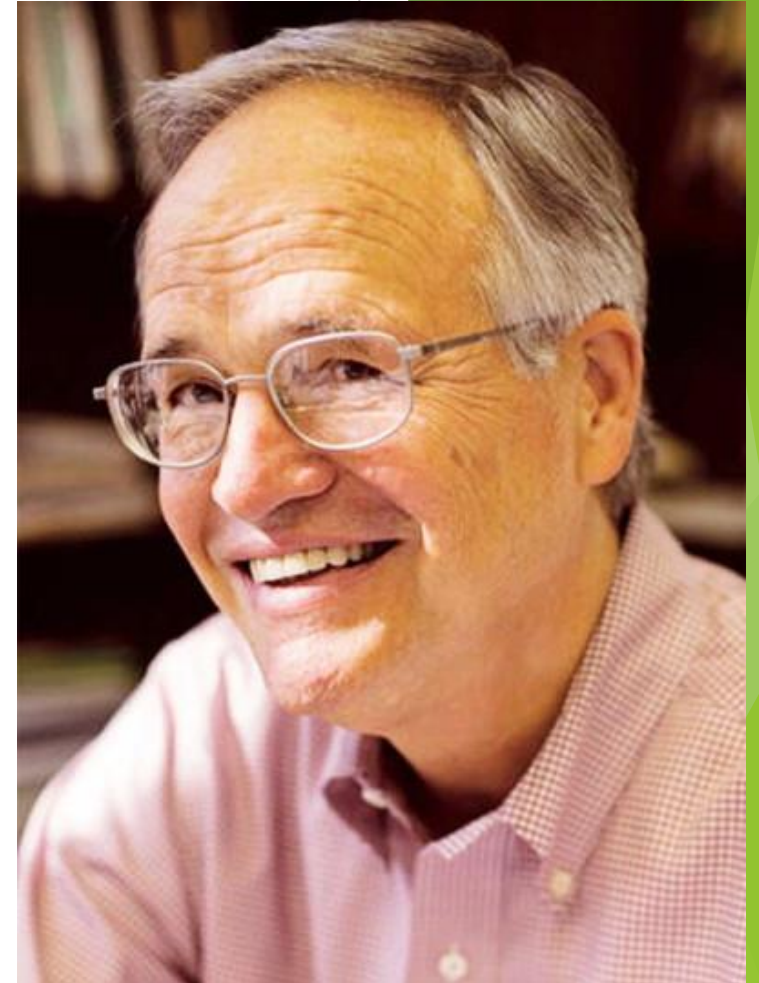


“What do you see as the biggest environmental challenge facing us today?”

“ I used to think that the top environmental problems were biodiversity loss, ecosystem collapse and climate change. I thought that 30 years of good science could address these problems. I was wrong. The top environmental problems are selfishness, greed and apathy, and to deal with these we need a cultural and spiritual transformation.

And we scientists do not know how to do it.”

- Gus Speth



“We scientists don’t know how to do that”

- In other words, even if armed with an avalanche of data and scientific information, nothing changes if policymakers and citizens aren’t moved to take action.
- Earth scientists collect and analyse information on topics such as biodiversity loss, ecosystem collapse and climate change. We take a systematic, logical approach to discovering how things in the universe work.
- The word ‘science’ itself is derived from a Latin word, scientia, defined as knowledge based on demonstrable and reproducible data — measurable results arrived at through

“We need a cultural and social transformation”

- Science is based on facts. We have always assumed that people would understand and appreciate the problems and act accordingly, taking the necessary actions when they are presented with the stark reality of these looming calamities. But for many decades nothing much has happened.
- As noted by several observers, most people continue to live their lives as normal; they have done little or nothing to address climate change issues. Indeed, many people continue to deny

“We need a cultural and spiritual transformation”

And it surely doesn't help when the leader of the US, the world's largest economy, ignores the science, announces the withdrawal of his country's signature on the world's climate agreement signed in Paris, having declared that global warming is a foreign conspiracy.



“We need a cultural and social transformation”

- As Speth stresses it, science has no answer to “selfishness, greed and apathy”. Not many people would voluntarily trade their standard of living for less, although we know that we are living in a very inequitable world.
- For example, developed countries use more than their share of resources. The average American uses 20 times the energy of a Costa Rican and 70 times that of a Bangladeshi.
- The world’s richest one billion people use 80 per cent of the world’s resources. That means, the other seven billion plus people use

Cultural And Spiritual Transformation Needed

- Sustainable Development Goal (SDG) #12 (Responsible Consumption and Production) of the 17 Global Goals agreed to by heads of governments in 2015 at the United Nations talks about promoting resource and energy efficiency, sustainable infrastructure, and providing access to basic services, green and decent jobs and a better quality of life for all.
- Its implementation helps to achieve overall development plans, reduce future economic, environmental and social costs,

Cultural And Spiritual Transformation Needed

- When Speth talks about the need for a “spiritual and cultural transformation”, he has in mind a paradigm shift in our attitude towards caring for the environment while we concurrently pursue economic development and social well-being
- The monumental environmental challenges we face today are largely anthropogenic in nature, and largely due to our self-centred human behaviour
- Earth scientists are essential guides to the identification of current conditions, drivers of change, trends, future scenarios and potential solutions, but notorious in their inability to move mountains
- It is fitting, therefore, that we reassess our approach to setting things right and engaging the many branches of social science as well

Scientists Must Link Up With Political Leaders

- ▶ WHILE climate change concerns have been expressed at several G20 meetings in the past, the most recent G20 meeting in Osaka, Japan marked the first time that the issue of biodiversity loss shared the centre stage.
- ▶ A final communique from the leaders' forum of 19 countries and the European Union included the following: "Noting the important work of the International Panel on Climate Change (IPCC) and Intergovernmental Science-policy Platform on Biodiversity and Ecosystem Services (IPBES), and in the light of recent extreme weather events and disasters, we recognise the urgent need for addressing complex and pressing global issues and challenges."

Scientists Must Link Up With Political Leaders

- ▶ The reference to IPBES is the result of a stark report it released on May 6 in Paris that warned that, without “transformative change”, one million of the world’s eight million plant and animal species are being pushed to extinction, many of them within the next few decades, with serious consequences for the rest of life on Earth – humanity included.
- ▶ The report is based on a review of more than 15,000 scientific and government sources, compiled by hundreds of expert authors from 50 countries, with inputs from another 310 contributing authors – the first comprehensive look at the state of the planet’s biodiversity since 2005.
- ▶ It also systematically incorporated, for the first time, indigenous and local knowledge.

Scientists Must Link Up With Political Leaders

- ▶ It is interesting to consider how the IPBES report achieved such prominent traction in the world's top political echelons.
- ▶ And, as cliché as it sounds, it's always good to have friends in high places.
- ▶ After the report launch in Paris, a delegation of IPBES leaders met at the Élysée Palace with French President Emmanuel Macron, who promised to advance their cause.
- ▶ “What is at stake is the very possibility of having a habitable Earth,” Macron said at the time.
- ▶ “Biodiversity is as important a subject as climate change and we can't win this battle without working all the levers,” he stressed.
- ▶ And indeed, biodiversity will be further stressed next month when Macron hosts the G7 in a French resort town, Biarritz.

Scientists Must Link Up With Political Leaders

- ▶ One take-home lesson for the scientific community is to note that although we could be excellent knowledge generators and gatherers, in today's complex world, we need to link up with our political leaders for our voices to be amplified and heard.
- ▶ This could be no better exemplified than the collaboration between former US vice-president Al Gore and the IPCC on climate change.
- ▶ The panel reports its findings every six years. But it was the charismatic Gore who truly drove home and galvanised world attention on the dangers of global warming.
- ▶ Sharing the 2007 Nobel Peace Prize with the IPCC, Gore was recognised by the Nobel Committee as “one of the world's leading environmentalist politicians” and “probably the single individual who has done most to create greater worldwide understanding of the measures that need to be adopted”.

Scientists Must Link Up With Political Leaders



Scientists Must Link Up With Political Leaders

- ▶ The need for a strong connection between science and policy is never lost within the scientific community.
- ▶ The IPCC and IPBES are two highly successful mechanisms for achieving that, and others are in the works.
- ▶ At the World Economic Forum last January, the Sweden-based Future Earth organisation and partners announced their intent to launch an “Earth Commission”.
- ▶ Envisioned is a group of top scientists who assess existing research to provide the science needed to define targets for sustaining the resilience of our planet’s life support systems.

Working With Politicians



Working With Politicians



Science Diplomacy in Action



Science Diplomacy in Action



Working With Politicians

- ▶ “Getting re-elected has always been their #1 priority”
- ▶ Economy will always be their main concern (wealth generation and job creation)
- ▶ Social wellbeing (poverty alleviation and adequate healthcare)
- ▶ Environment (important but almost always, an afterthought)
- ▶ Science, Technology and Innovation is reluctantly recognised as an underpinning to Sustainable Development

Three Prerequisites of Convincing Policymakers

1. CREDIBILITY

2. RELEVANCE

3. LEGITIMACY





“Maliau decision farsighted”

Sabah ‘s Chief Minister announced no coal mining in Maliau Basin
- “Sabah’s Lost World - a 58,840 ha of pristine tropical forest

Ultimate Aspiration

Let us hope that the International Network for Government Science Advice will become another successful stage on which science and public policy can convene and intertwine

International Network for Government Science Advice



Thank You!