



United Nations  
Educational, Scientific and  
Cultural Organization

Organisation  
des Nations Unies  
pour l'éducation,  
la science et la culture

Organización  
de las Naciones Unidas  
para la Educación,  
la Ciencia y la Cultura

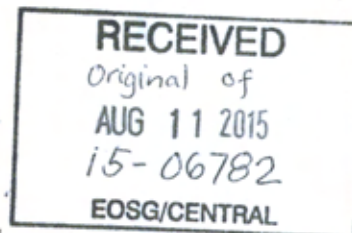
Организация  
Объединенных Наций по  
вопросам образования,  
науки и культуры

منظمة الأمم المتحدة  
للتربية والعلم والثقافة

联合国教育、  
科学及文化组织

The Director-General

*Central*



Mr Ban Ki-moon  
Secretary-General  
United Nations  
New York, NY 10017  
United States of America

30 JUL. 2015

Ref.: DG/2/15/6311

Dear Secretary-General,

It is my honour to submit to you herewith the report on the results of your Scientific Advisory Board (SAB) at its third session, held in Kuala Lumpur (Malaysia) on 25 and 26 May 2015.

The report has been approved by SAB members, whom I commend for their engagement and contribution. I wish also to thank Tan Sri Abdul Hamid Zakri, Science Advisor to the Prime Minister of Malaysia, for his readiness to co-chair the third session and for his excellent leadership and guidance on this occasion.

At its very productive session, the SAB agreed on a number of concrete deliverables in the form of policy briefs, which are described in detail in the report of the meeting. Agreement was reached on a number of further initiatives and steps leading up to the SAB's fourth session, scheduled to take place in Saint Petersburg (Russian Federation) on 14 and 15 December this year. I hope sincerely that you will be in a position to join us on that occasion.

Allow me to take this opportunity to thank you for welcoming the SAB members participating in the Ministerial breakfast that took place in the margins of the high-level segment of ECOSOC/High Level Political Forum, and myself in your office in New York on 9 July last. Your guidance will be instrumental with regard to future developments in the work of SAB. More specifically, I wish to suggest that all SAB members be notified of your decision that they will continue serving as members of the Board until the end of 2016. UNESCO, in its capacity as host of SAB, stands ready to take the necessary actions in this regard, in close consultation with your Office.

With my best personal regards, I remain,

*Cordially,*

Yours sincerely,

*Irina Bokova*

Irina Bokova

FILED

AUG 11 2015

sch/08/002, INR/04/001



# Scientific Advisory Board

of the Secretary-General of the United Nations

hosted by the

United Nations Educational, Scientific and Cultural Organization

---

## **REPORT OF THE THIRD MEETING OF THE SCIENTIFIC ADVISORY BOARD OF THE SECRETARY-GENERAL OF THE UNITED NATIONS**

25–26 May 2015  
Kuala Lumpur, Malaysia

---

## TABLE OF CONTENTS

1. Welcoming session .....	3
2. Working session.....	4
Consideration and endorsement of the SAB policy briefs.....	4
Climate risks .....	4
Data revolution.....	5
High Level Political Forum on Sustainable Development and the Global Sustainable Development Report.....	5
Means of implementation of the post-2015 development agenda.....	6
Results of the Delphi Study on top challenges for the future of the people and the planet.....	7
Recognition of indigenous and local knowledge .....	8
Discussion on application of advice provided by SAB to the Office of the Secretary-General.....	9
SAB work programme and timeline.....	9
Dates and venue of the fourth meeting of SAB.....	9
3. Closure of the meeting .....	10
ANNEX I – LIST OF SPEECHES .....	11
ANNEX II – LIST OF PARTICIPANTS .....	20
ANNEX III – MEETING PROGRAMME .....	22
ANNEX IV - MEDIA COVERAGE.....	24
ANNEX V - WORK PROGRAMME AND TIMELINE.....	25
ANNEX VI - LIST OF DOCUMENTS.....	26



## 1. Welcoming session

The Third Meeting of the Scientific Advisory Board of the Secretary-General of the United Nations (hereinafter referred to as "SAB") was held in Kuala Lumpur, Malaysia, on 25 and 26 May 2015, at the invitation of the Prime Minister of Malaysia, the Honorable Dato Sri Mohd Najib Tun Abdul Razak.

A Welcoming Ceremony of the meeting was held under the auspices of the Deputy Prime Minister of Malaysia, the Honorable Tan Sri Muhyiddin Mohd Yassin, in the presence of a mixed audience of approximately five hundred attendees, who included members of the Malaysian Government, other high government officials, heads of foreign missions, members of academia, and the general public.

The Ceremony was inaugurated by an address by Professor Zakri Abdul Hamid, Science Advisor to the Prime Minister of Malaysia and Member of SAB, who stressed the important role played by science and technology in economic and sustainable development. In his message, which was delivered by Ms Irina Bokova, Director-General of UNESCO and Chairperson of SAB, the UN Secretary-General thanked the Prime Minister of Malaysia and Professor Zakri Abdul Hamid for hosting the meeting and the Deputy Prime Minister Tan Sri Muhyiddin Yassin for officiating the welcoming function. He also thanked the Director-General of UNESCO for her leadership in coordinating the work of the Board. The UN Secretary-General tasked SAB members with the responsibility to contribute to raising public awareness on the post-2015 development agenda, including in relation to the need to support States in fulfilling the Lima-Paris climate action agenda.

In her address, Ms Bokova expressed her gratitude to the Government of Malaysia for hosting the meeting. She thanked Professor Zakri Abdul Hamid for his leadership and the Malaysian Industry-Government Group for High Technology (MIGHT) for its support in organizing the meeting. Ms Bokova stressed that the hosting of the meeting by Malaysia reflected the country's deep commitment to nurture science, technology and innovation for more sustainable and inclusive development, which was embodied in the vision of the Prime Minister of Malaysia and his *Science2Action Programme*, to transform the country's science, technology and innovation landscape. She emphasized the contribution of SAB in crafting new approaches to help States tackle the challenges of promoting equitable and inclusive growth, eradicating poverty, bolstering energy, water and food security, controlling diseases, mitigating disasters and building sustainable cities, through the inputs arising from the sciences.

In his address, the Deputy Prime Minister of Malaysia welcomed SAB members to Malaysia and stated that the country was honored to be the first emerging economy nation to serve as host of a SAB meeting. He underlined the importance of science, technology and innovation for development and the need for not only basic research, but also translational research, which is critical in providing solutions for the problems of the present and the future.

The full text of the above-mentioned addresses is included in **ANNEX I – LIST OF SPEECHES** to this report.

A session followed in which SAB members engaged in a discussion with the audience, which was moderated by Mr Kamarul Baharin Haron from the Malaysian news channel *Astro Awani*.



## 2. Working session

The meeting was co-chaired by Ms Irina Bokova, Director-General of UNESCO and Chairperson of SAB, and Professor Zakri Abdul Hamid, Science Advisor to the Prime Minister of Malaysia and Member of SAB. The meeting was attended by 18 SAB members; a representative of the ICSU Regional Office for Asia and the Pacific also attended as an observer. The full list of participants in the meeting can be found in **ANNEX II – LIST OF PARTICIPANTS** to this report.

In her opening statement Ms Bokova emphasized the role of SAB in helping States 'connect the dots' by contributing to the knowledge base necessary for countries to move forward together. She expressed her appreciation to SAB members who had attended the SAB Round Table held on the margins of the formal negotiations on Means of Implementation for the post-2015 development agenda in New York on 23 April 2015, and invited other members to engage in a similar fashion in SAB events of this kind in the future. Ms Bokova reiterated the importance of increasing the visibility of the SAB's work with the Office of the UN Secretary-General and vis-à-vis the general public.

The preliminary programme of the meeting was adopted as contained in **ANNEX III – MEETING PROGRAMME** to this report.

### Consideration and endorsement of the SAB policy briefs

#### *Climate risks*

Professor Carlos Nobre presented progress of the SAB working group, which he chairs, devoted to the production of the SAB policy brief on climate risks. The policy brief was developed in response to the request by the UN Secretary-General to SAB to produce advice on climate change ahead of the twenty-first session of the Conference of the Parties to the UN Framework Convention on Climate Change (COP21) in Paris on 30 November to 11 December this year.

This policy brief is intended to assess systemic risks at high degrees of climate change and to identify means for developing a risk-based approach to communicating those risks to policy-makers. Carbon emissions continue to rise, thus resulting in sea-level rise; heat stress is another of such risks, especially beyond the physiological threshold of 35 degrees Celsius. This increase in temperature also severely impacts the production of wheat, corn and rice, even though adaptive measures have been undertaken in some regions of the world. Risks are posed to biodiversity. The current pace of climate change is 50 to 100 times faster than during interglacial periods.

The discussion that ensued centered on how the policy brief could contribute to the Climate Science Conference "Our Common Future" in Paris in July 2015 and the negotiations on a climate agreement also in Paris later in the year. The brief should enable to frame the risks, possible opportunities and actions to be taken in the context of the current climate change debate. The Board agreed that the policy brief should provide advice on policy for climate risk action, adaptation and mitigation. SAB should move to complement the work of the Intergovernmental Panel on Climate Change (IPCC) and propose clear recommendations for decision-makers, which needs to be based on existing science, data and information, all of which is already collected and analyzed by the IPCC.

The policy brief will be further elaborated towards the provision of clear advice by SAB on risks posed by climate change and what can be done to tackle those. It was pointed out that the brief should reflect impacts not only for humans but also for biodiversity; it should also



reflect issues related to geographical and temporal scales; and the role of education in building a sense of responsibility related to the notion of global citizenship.

The Board agreed that the main findings of this brief will be presented at an event to be organized on the margins of the Our Common Future Conference in July 2015 as well as at the UN Summit in New York on 25 to 27 September this year. The final brief will be presented to the UN Secretary-General's attention ahead of its distribution at COP 21.

#### *Data revolution*

The SAB policy brief on a Data Revolution was based on a request by the UN Secretary-General to SAB to provide its views on the report "A World That Counts: Mobilizing the Data Revolution for Sustainable Development". SAB had already produced a note containing preliminary advice to the UN Secretary-General in March 2015. The policy brief is to be seen as a further expansion of the preliminary advice already produced by SAB on the topic of a data revolution.

Dr Tanya Abrahamse presented the draft policy brief, as prepared by the dedicated SAB working group, which is chaired by Professor Winston Soboyejo. The brief had benefited also from some of the contributions made by SAB members attending the SAB Round Table held in New York on 23 April 2015.

SAB members agreed that the policy brief needs to demonstrate the importance of the data revolution for improving the lives of the people. They reiterated the issue of equity of access to information and data as, ironically, the data revolution entails the possibility to create a far worse digital divide.

At the same time, the data revolution provides an opportunity for much more inclusiveness and transparency of societies and to harness people's views globally; to recognize indigenous and local knowledge; and a breakthrough opportunity for creating an adequate data infrastructure and policies, including on privacy. Other policies that need to be clearly defined are in relation to data access, data integrity, and the control of the quality of data and repositories of data. There is a need to design educational programmes that allow moving from multiple data to metrics. The data revolution, combined with citizen science, contributes to people's understanding of problems and the identification of solutions.

It is important that the potential of different sources of data available be harnessed such as in relation to food and water security. Information Technologies could act as a means to solve issues such as rural poverty and gender inequality. Lessons can be learned by existing initiatives related to data, for example, in the areas of meteorology, biodiversity and demographics. Equally, the efforts of existing institutions should be harnessed.

Going forward, it was decided that the policy brief will need to incorporate all these issues and that it should be ready on time for a SAB Ministerial Breakfast during the high-level segment of the High-Level Political Forum on Sustainable Development, on 9 July 2015.

#### *High Level Political Forum on Sustainable Development and the Global Sustainable Development Report*

The SAB working group on the High Level Political Forum (HLPF) on Sustainable Development and the Global Sustainable Development Report (GSDR) was tasked to prepare a policy brief articulating the role science could play in the HLPF context. Professor Maria Ivanova, leader of this working group, presented the premise of this stream of work of SAB, which relates to the practical role of science, the impact of science on policy, the responsibility of science and the scientist vis-à-vis society, as well as the need to engage



science into policy and decision-making process in a more robust and rigorous manner. She stressed that the framework to tackle such issues at stake, namely the HLPF, is mostly of a political nature. But it was noted that HLPF should also provide a space for science.

The recommendations of the dedicated SAB working group centered on the need to ensure adequate representation of science in HLPF. Several options exist to ensure representation of science in the HLPF, as outlines in the dedicated SAB policy brief. Science representation in HLPF would allow for science to inform policy in a more robust, rigorous way; for science to be reflective of politicians' preoccupations and priorities; and, for conducting scientific assessments of policy decisions, which goes back to original mandate and reason d'être of the SAB.

There is also a need to organize dialogues on science, on a systematic basis. One concrete option in this regard is provided by the possible creation of a global science forum, endorsed by HLPF and implemented by UNESCO, which would act as a platform to assess all existing efforts in showcasing how science can bring solutions to policy-makers.

It was stressed that a world science forum would be important but only if root causes of sustainability were discussed in an open and thorough manner. The forum's scope would span from issues related to the need to develop appropriate science policies to making policymakers understand how science can bring solutions to society. Focus should be on actionable ideas, for example, how to address inequalities, jobs, and economic productivity.

It was also noted that, at the same time, science is an endeavor demanding patience, investment and thinking, which does not equate with fast, instant success. In this regard, science education is an important endeavor, as "[s]cience is about acquiring new knowledge and transferring it on to the next generation" (Francis Bacon).

As to GSDR, it should not only report on the consequences of unsustainability but also the root causes of it. The stature of the GSDR needs to be elevated to match that of the Human Development Report. Hence the report will need to be hosted by a specialized agency of the UN.

In addition to the proposed establishment of a global science forum, SAB also recommended the development of a global science report with the goal to collate and assess all current scientific work on critical global issues so that this critical information could feed into HLPF and GSDR.

It was agreed that the SAB policy brief on HLPF and GSDR will be ready for distribution at the SAB Ministerial Breakfast during the high-level segment of the High Level Political Forum, scheduled to take place in New York on 9 July 2015. Subsequently it will also be presented at a dedicated SAB event during the UN Summit in September and the World Science Forum in November this year.

#### Means of implementation of the post-2015 development agenda

Responding to the UN Secretary General's request for thoughts by SAB on means of implementation for the post 2015 development agenda, SAB members discussed their contribution to the ongoing intergovernmental discussions on this question.

In particular, Professor Zakri, Professor Hacker, Professor Maria Ivanova and Ms Joji Cariño reported on their contributions to the SAB Round Table Discussion on "Science, Technology and Innovation: Critical Means of Implementation for the SDGs", which took place on 23



April 2015 at the UN headquarters in New York on the margins of the fourth session of the post 2015 intergovernmental negotiations.

They respectively summarized their reflections during the Round Table Discussion in terms of:

- the need for investment in science, technology and innovation (STI) and research and development (R&D) with a target of minimum 1% of the GDP for science and R&D;
- the importance of considering STI, not just as a tool and as such as a means of implementation in the process toward sustainability, but also as a public good that is critical for achieving any of our common goals;
- the significance of evidence-based implementation and monitoring of the Sustainable Development Goals (SDGs);
- the need for STI to be understood as embedded and linked to the full diversity of knowledge systems within society and, in particular, to the full range of indigenous and local knowledge.

SAB members agreed that the SAB Round Table Discussion in New York in April 2015 provided an excellent opportunity for SAB to interact with Member States, UN organizations, civil society, and academia on the key issues pertaining to the post-2015 development agenda, the SDGs and financing for development. In this context, they encouraged other similar events to be organized at UN headquarters in New York.

It was decided that the reflections from the Round Table Discussion in New York should be summarized with the help of the Secretariat. The summary of the reflections, endorsed by SAB, will be shared with the Secretary-General and interested Member States.

#### Results of the Delphi Study on top challenges for the future of the people and the planet

At the second SAB meeting in Paris, the Secretary-General requested the SAB to raise scientific concerns about the future of people and planet that would require global responses and hence his attention and the attention of the UN. This was seen as a great opportunity to identify and leverage the wisdom and the vast and varied experience of all members of the SAB, and to amplify the value of their advice to the Secretary-General. Professor Abdallah Daar led a working group which employed a Delphi method to identify these concerns.

The Delphi method is a rapid, simple, scientific and effective method using structured and sequential questioning to attain one 'big idea' from each SAB member. The questioning was performed via email, over three rounds which consisted of discerning such big ideas and ranking them. The working group started by defining the characteristics of a big idea, which ideally should be a bold challenge or concern that might address or solve multiple sustainability problems in relation to the due agenda.

The results of the Delphi Study brought about the following eight top challenges:

1. One Ocean, Many Countries: Building a Blue Economy Sustainably
2. Addressing Threats To Biodiversity and Establishing A New Paradigm for the Global Tropics
3. Develop a Comprehensive Strategy Against Infectious Agents, Including a Global System for Immediate Response
4. Invest a Fraction of GDP in Research and Education in Basic Science
5. Averting Enormous Human Disasters Through Prediction
6. Emissions Free Technology: Changing the Fossil Fuel Paradigm
7. Providing Drinkable Water for All



## 8. Finding Solutions for a World Overwhelmed by Unequal Resource-use and Continued Population Growth

SAB members agreed that while the process for identifying these top challenges was systematic and transparent, there was no need to rank such challenges but rather to present them as equally important.

Additional considerations were made in relation to some of these challenges. In relation to inequality and population growth, it was noted that inequality is scattered all over the world and that a Eurocentric view of population growth should not prime.

Another set of observations concerned the way in which R&D investment is calculated and the consideration that phrasing this as a percentage of GDP would entail limitations in passing the important message on the need to invest in research. An appropriate and useful approach is to refer to the need to invest in R&D from a broader basis, including education, the importance of ingenuity in discoveries, and the need to exemplify that without basic research, applications of research findings as common, nowadays, as transistors and GPS would not exist. Unfortunately, it was noted, the private sector tends not to invest in fundamental research, and governments are also reluctant to do so.

It was also noted that apart from investments in R&D, there also is a need to tackle the issue of braindrain, through the establishment of reinforcement of centers of excellence in research and science.

SAB agreed that the results of the Delphi Study would be further refined, with the view to complete the study on time for its presentation at a dedicated SAB event at the UN Summit in September 2015.

### Recognition of indigenous and local knowledge

Ms Joji Cariño introduced this agenda item with a comprehensive presentation of the definition and significance of indigenous and local knowledge (ILK), particularly with regard to environmental sustainability and the ongoing efforts to conserve and sustainably use biodiversity and natural resource and to monitor and adapt to environmental change, including climate change.

In the discussion that followed, SAB members provided several examples where ILK and science are successfully brought together, including in the context of adaptation to climate change, biodiversity related indicators, food security and agricultural practices, *in situ* conservation of genetic resources, pollination, infectious diseases, burning practices in Australia, the ecology of polar bear, the Satoyama approach to the conservation and management of socio-ecological productive systems, and community and cultural mapping in the Philippines where community data is combined with the government data to address deforestation.

Recalling the SG's request to promote greater commitment to integrating indigenous and local knowledge into sustainable development solutions, SAB members decided to produce a policy brief for the attention of the Secretary-General recognizing the important role of ILK for sustainable development and providing recommendations for enhancing the synergies between ILK and science moving forward. Ms Joji Carino agreed to take the lead on this task.



### Discussion on application of advice provided by SAB to the Office of the Secretary-General

In introducing this agenda item, the Secretariat noted that the UN Secretary-General is regularly briefed about the work of SAB through a designated focal point in his Executive Office. As per the Secretary-General's instructions, all SAB reports and briefs have been transmitted by the Director-General of UNESCO to the Secretary-General. Regular exchanges takes place between the Director-General and the Secretary-General on matters related to the Board, and the SAB Secretariat is closely collaborating with the Secretary-General's Office on SAB-related issues.

With regard to SAB's engagement with other UN organizations, their executive heads were invited to designate focal points for SAB. These focal points are invited to attend SAB meetings in an observing capacity and also receive all SAB reports and briefs.

SAB members expressed high appreciation for the valuable and insightful inputs and in-depth interactions they have with the Director-General of UNESCO during SAB meetings and in preparation of such meetings, through the SAB Secretariat.

In order to further reinforce their communication with the Secretary-General, SAB members agreed that a physical meeting with the Secretary-General and with the relevant members of his office, at least once a year, would be important for the achievement of SAB objectives and for the full realization of the Board's potential.

With regard to increasing the visibility of SAB and its work, SAB members agreed that a more comprehensive and strategic SAB communication and outreach strategy needs to be developed. Proposals in this regard included the following:

- SAB members could reach out more frequently to the relevant press, for example through Op-eds and opinion pieces in *Science* and *Nature* or in SciDev.Net;
- editors of key journals could be invited to SAB events or meetings;
- SAB policy briefs could be featured on the Secretary-General's website;
- all SAB policy briefs could be published as a special feature in a dedicated journal and/or in the form of a technical report; and
- press releases on the work and outcomes of SAB will be published on a regular basis.

Media coverage related to the third meeting of SAB is reported in **ANNEX IV – MEDIA COVERAGE** to this document.

---

### SAB work programme and timeline

SAB members agreed on the work programme in the period comprised between the end of the third meeting and the beginning of the fourth meeting of SAB. They also agreed on a related timeline, expected deliverables and key events at which to present those deliverables. This information is reported in **ANNEX V – WORK PROGRAMME AND TIMELINE** to this document.

### Dates and venue of the fourth meeting of SAB

Dr Fortov invited members of SAB to hold the Board's fourth meeting in Saint Petersburg, Russia, on 14 and 15 December 2015, at the initiative of the Government of Russia and the Russian Academy of Sciences. The meeting would take place on the margins of a special event organized by the Russian Federation on the occasion of the seventieth anniversary of UNESCO. It will see a substantive session of SAB, as well as provide an opportunity for SAB



members to meet with representatives of the scientific community, Government and the general public in Russia. SAB members enthusiastically endorsed Dr Fortov's proposal. Professor Zakri, in his capacity of Co-Chairperson of the meeting, expressed his most sincere thanks to Russia for the generous offer and kind invitation. It was hence decided that the fourth meeting of SAB will take place in Saint Petersburg, Russia, on 14 and 15 December 2015.

### **3. Closure of the meeting**

Professor Zakri and Ms Flavia Schlegel, Assistant Director-General for Natural Sciences and acting on behalf of the Director-General of UNESCO, thanked SAB members for their participation in and contribution to the third meeting of SAB. They thanked the Malaysian Industry-Government Group for High Technology and the SAB Secretariat for the support provided for the organization and running of the meeting. The meeting was declared closed on 26 May 2015 at 17:30.

## ANNEX I – LIST OF SPEECHES

PROFESSOR ZAKRI ABDUL HAMID

--

### MESSAGE TO THE THIRD MEETING OF THE UN SECRETARY-GENERAL'S SCIENTIFIC ADVISORY BOARD Kuala Lumpur, 26 May 2015

The Honourable Tan Sri Muhyiddin Yassin  
Deputy Prime Minister of Malaysia

Honourable Ministers and Deputy Ministers

Your Excellency Ms Irina Bokova  
Director General of UNESCO

Your Excellencies Heads of Foreign Mission,

Distinguished UN Scientific Advisory Board members,

Distinguished delegates,

Ladies and gentlemen,

*Salam sejahtera* and a very good morning. I would like to extend a warm welcome to all of you, especially my fellow colleagues of the UN SG Scientific Advisory Board. My appreciation goes to the Deputy Prime Minister of Malaysia, for being here with us today despite his hectic schedule. I am also very pleased to have the presence of 500 attendees to this official opening ceremony representing politicians, senior government officials, academics, captains of industry and NGOs.

Ladies and gentlemen,

The UN Secretary General Scientific Advisory Board is a reflection that science is global, increasingly interconnected and multidisciplinary. The challenge for us now is how to reap the maximum benefit of global science; how to ensure that the fruits of science are best used to address current and global issues, and to prepare for the opportunities and challenges of the future.

In a recent address Secretary General Ban Ki-moon expressed that "Science and technology have crucial roles to play in promoting progress and peace – from food security to sanitation – from disarmament to disaster preparedness,"

This is the context of what the SAB is tasked with. Specifically our role is to strengthen the so called science – policy nexus. In other word how do we utilize scientific knowledge or evidence to assist our political leaders and policy makers to make the right judgement and/or policy for the economic benefits of the citizen of each country.

Science and technology operate at multiple scale from local to national to global. Science and technology as an engine for economic and sustainable development. In Malaysia, this means using S&T to strengthen the foundations of the Government and Economic Transformation Programme introduced in 2010.



To be sure the success of our rubber and oil palm industry has always been underpinned by science and technology. Rubber brought by the British from Brazil hundreds of years ago and oil palm from West Africa also hundreds of years ago were the products of R&D started by our colonial masters and made perfect by Malaysian researchers. Today Malaysia had the most advanced technology in the palm oil industry.

Lately the government has started to invest in R&D in high technology areas for example in aerospace, biotechnology, shipbuilding and ship repair, rail industry and renewable technology.

Definitely in all of the above we are also investing in education and upskilling our young people. The launching of the National Education Blueprint 2013-2025 and National Higher Education Blueprint 2015-2020 by the Prime Minister and Deputy Prime Minister who is also Education Minister 1 is a case in point.

Coming back to the SAB, our tasks include making our message simple and easily understood by the public. More often than not the layman is not moved by the statement pronouncing the rate of extinction of species. For example, I wonder how many of you would be concerned if I say, one of every eight birds, one of four mammals, one of three amphibians, six of seven of marine turtles are threatened with extinction. But if I say ecosystem services that provide us clean air, clean water, climate regulation, food and shelter are being degraded, you would be more concerned. In fact 60% of those services are being lost as we speak. Maybe and only maybe the politician and policy makers would be more compel to take action.

Ladies and gentlemen,

I am sure this meeting will bring about fresh and innovative ideas for the betterment of the world as whole, the Scientific Advisory Board and its members.

Finally, I hope all members of Board will also take time off after the meeting to enjoy the various attractions of Kuala Lumpur and will have a pleasant and enjoyable stay in Malaysia.

Thank you and Terima Kasih.

**THE SECRETARY-GENERAL**  
--  
**MESSAGE TO THE THIRD MEETING OF THE  
SECRETARY-GENERAL'S SCIENTIFIC ADVISORY BOARD**  
**Kuala Lumpur, 26 May 2015**

*Delivered by Ms. Irina Bokova, Director-General of UNESCO*

Excellencies,

Distinguished Members of the Scientific Advisory Board,

I am pleased to send greetings to the third meeting of the Scientific Advisory Board.

I thank the Honorable Dato Sri Mohd Najib Tun Abdul Razak, Prime Minister of Malaysia, and Professor Zakri Abdul Hamid, for hosting this meeting and the Deputy Prime Minister Tan Sri Muhyiddin Yassin for officiating this function.

I also thank the Director-General of UNESCO, Ms. Irina Bokova, for her leadership in coordinating the work of the Board.

This year, Member States will take decisions to shape a better future for all.

We must harness the full power and authority of the sciences, to shape and implement the post-2015 development agenda, locally, nationally, regionally and globally.

The role of the Scientific Advisory Board is essential in supporting States and societies to chart new paths towards more inclusive, sustainable development.

I count on you to raise awareness of the post-2015 development agenda among the global scientific community.

This includes the need for adequate financing for science, technology and innovation.

---

~~I also count on you to support States in fulfilling the Lima-Paris action agenda, including through the climate change science conference in Paris in July.~~

Finally, I ask you to promote greater commitment to integrating indigenous and local knowledge into sustainable development solutions.

These are key challenges in this key year.

I wish you a productive session and I thank you for your commitment to nurturing the full potential of the sciences for a better future for all humanity and the planet.



**THE DIRECTOR-GENERAL of UNESCO**  
--  
**MESSAGE TO THE THIRD MEETING OF THE  
UN SECRETARY-GENERAL'S SCIENTIFIC ADVISORY BOARD**  
**Kuala Lumpur, 26 May 2015**

The Honourable Tan Sri Dato' Hj Muhyiddin Hj Mohd Yassin,

Professor Tan Sri Zakri Abdul Hamid,  
Science Advisor to the Prime Minister, Member of the Scientific Advisory Board of the United Nations Secretary-General,

Ministers and Deputy Ministers, High Commissioners,

Excellencies,

Members of the Scientific Advisory Board,

Ladies and Gentlemen,

I am deeply grateful to the Government of Malaysia for hosting the 3<sup>rd</sup> Meeting of the Scientific Advisory Board of the United Nations Secretary General.

Let me express special thanks to Professor Zakri Abdul Hamid for his leadership and to the *Malaysian Industry-Government Group for High Technology* for its support.

I believe this reflects the deep commitment of Malaysia to nurture science, technology and innovation for more sustainable and inclusive development.

I see this embodied in the leadership of His Excellency Mr Najib Razak, Prime Minister of Malaysia, and his *Science2Action Programme*, to transform the country's science, technology and innovation landscape.

The three directions of *Science2Action* -- Science2Governance, Science2Industry and Science2Well-being -- reflect the comprehensive approach needed to make the most of the power of the sciences.

One of the questions which the Scientific Advisory Board is addressing is that fundamental research is an essential source of new ideas that can have transformational impacts on humanity's future.

This raises the immediate question of the level of investment dedicated to research -- I believe Malaysia has strong lessons to share here, given its leadership in setting high targets for national research and development spending.

Supporting the sciences for sustainable development stands at the heart of the partnership that exists between UNESCO and Malaysia.

This is embodied in the *International Centre for South-South Cooperation in Science, Technology and Innovation*, under the auspices of UNESCO and based here in Kuala Lumpur.

The same spirit guides our cooperation across the board – in protecting Malaysia's unique biodiversity through Biosphere Reserves, as well as in safeguarding this country's breath-taking cultural heritage and diversity.

Our partnership is wide and deep, and I thank the Government once again for its leadership.

We need this more than ever, in this year when Governments shape responses to climate change and a new global sustainable development agenda.

The sciences are the way to link together the economic, the environmental and the social dimensions of sustainability.

Humanity, I believe, has entered a new age of limits, and this calls on all societies to make far more of the boundless opportunities to be found in human creativity, to craft new solutions that are inclusive, just and sustainable.

This calls for stronger sciences – it calls for more connected sciences.

This calls for deeper collaboration across all fields and borders, to share in the creation and distribution of knowledge and innovation.

Science, technology and innovation holds answers to key questions societies must address – about promoting equitable and inclusive growth, about eradicating poverty, about bolstering energy, water and food security, about controlling disease, about mitigating disasters, about building sustainable cities.

The post-2015 agenda must help States tackle these big questions, together.

For this, the sciences are drivers and enablers, to craft new approaches that are inclusive, rights-based and founded on solid scientific ground.

This is the inspiration underpinning the Scientific Advisory Board.

Our guiding principle is clear.

The complexity of challenges facing the world today calls for a new unity among the sciences.

---

It calls for innovative approaches across disciplines.

It calls for stronger linkages between science and policy.

Our objective is to ensure, at the highest level, that decisions are informed, enabled and accompanied by the best available knowledge, and brought together in a holistic manner.

To these ends, the Scientific Advisory Board is actively contributing to debates and deliberations on the post-2015 agenda and, we hope, a possible and solid climate agreement.

The Scientific Advisory Board is looking into the emerging issue of climate-induced risks, such as the flood events which have affected this country recently.

Sustainable development can only be achieved if it brings benefits to the well-being of every woman and man, to every society.



The Scientific Advisory Board is exploring also how the data revolution can promote access to information, data and services for all, as well as the capacity needed in regions where ICT infrastructure is lacking.

Malaysia has a strong tradition of linking science with top decision-making, embodied in role of the Science Advisor to the Head of Government – to the Prime Minister. In the same spirit, the Scientific Advisory Board is producing advice to strengthen the interaction between science and policy at multiple levels.

The Secretary-General has asked the Board to identify the top challenges for the future of humanity and the planet, requiring his attention and that of the United Nations – and I know this is attracting much interest.

In all this, we must seize the opportunity we have this year to demonstrate the centrality of science for sustainable development.

This is also about recognizing the contribution of all relevant knowledge, including indigenous and local knowledge.

All of this, Ladies and Gentlemen, resonates with the mandate of UNESCO. It is not by chance that the Secretary-General asked UNESCO to contribute and lead the discussions of the Scientific Advisory Board. This year we celebrate our 70<sup>th</sup> anniversary – and reaffirm the relevance of our mandate to harness the power of the sciences to eradicate poverty, to craft new approaches to inclusive development, to strengthen the defences of peace.

I am pleased the Scientific Advisory Board has this opportunity now to open its doors, to engage with prominent personalities present here today, eminent academics, the private sector, civil society, the media and the people of Malaysia.

On this occasion, I wish to thank once again every member of the Scientific Advisory Board for their commitment.

Most especially, I thank the Government – the Deputy Prime Minister and Minister of Education and all Ministers with us today – and the people of Malaysia for their leadership and support to UNESCO to advancing sustainable development and lasting peace across the region and the world.

Just two days ago, on Sunday, I was with the Deputy Prime Minister to celebrate Hari UNESCO Malaysia on the theme of *Togetherness*. It was a wonderful celebration of unity in diversity – cultural diversity, ethnic diversity, religious diversity – and a call to the world to unite around the notion of a single humanity.

In a world of tremendous opportunities and new openings, but also deep challenges, uniting around this sense of togetherness is a foundation for peace. How you use diversity as strength is a lesson to many societies. I thank Malaysia for sending this strong message to UNESCO and to the world.

Thank you.

**TAN SRI MUHYIDDIN MOHD YASSIN**

**SPECIAL ADDRESS TO THE THIRD MEETING OF THE  
UN SECRETARY-GENERAL'S SCIENTIFIC ADVISORY BOARD  
Kuala Lumpur, 26 May 2015**

Your Excellency Madam Irina Bokova  
Director General of UNESCO

Professor Tan Sri Zakri Abdul Hamid  
Science Advisor to the Prime Minister of Malaysia

Your Excellencies Heads of Foreign Missions,

Distinguished UN Scientific Advisory Board members,

Distinguished delegates,

Ladies and gentlemen,

On behalf of the people and government of Malaysia, I wish you a very warm Welcome and Selamat Datang. We are proud and delighted that Malaysia has been chosen to host this 3rd meeting of the United Nations Secretary-General's Scientific Advisory Board. Noting that the first two meetings were conducted in Berlin and Paris, we are honoured to be the first emerging economy nation to serve as host.

Today's meeting is particularly significant, as the world community moves towards the UN Summit in September and a landmark agreement on the post-2015 international development agenda. This year presents a golden opportunity for our generation to set clear goals and clear pathways to a safer, better, more equitable and prosperous world. As we look to secure the development of millions of people who live in poverty, we must also safeguard the global commons, i.e. our climate, forests, water resources and the biodiversity that sustains life and enables prosperity.

I would like to congratulate the United Nations Educational, Scientific and Cultural Organisation (UNESCO), which hosts this Board's Secretariat, and all those here in Kuala Lumpur, led by the Office of the Science Advisor to the Prime Minister and MiGHT, for putting together this meeting. I am also pleased to note that among the 26 eminent members of the Board is our very own Prof Zakri, who has a long and extensive experience in international affairs and science diplomacy.

Ladies and gentlemen,

Uppermost in my mind among the many major challenges in achieving sustainable development are food security, climate change mitigation and adaptation, halting biodiversity loss, improving global health, securing adequate amounts of energy and safe water for all. Achieving each of these global priorities requires the strong input of science. It is science that underpins nearly everything we do in everyday life — from cooling our homes, to using a mobile phone or surfing the internet, from growing the food we eat to providing the medicine we need for good health. Thereby indeed, science matters to us all.

In this country, recent tragic events remind us of the powerful role of science and technology. Late last year, the east coast of peninsular Malaysia experienced its worst floods in living



memory — a flood disaster of a magnitude expected just once in 100 years. It caused 21 casualties, displaced 200,000 and inflicted damage to properties and infrastructures amounted to about US\$1 billion. Post-disaster exercise suggested many scientific and technological ways to help avoid the consequences of such natural calamities, ranging from better storm and rain prediction to a whole range of measures in flood mitigation, adaptation and reconstruction.

Science is most essential to drive our economy. It is key to creating jobs and generating more income for our citizens, in particular alleviating poverty among our urban and rural poor. Many elements important for fostering and using good science in Malaysia are now well embedded, with innovation given a central role in national economic development plans. But achieving this requires a good relationship between science and society, based on trust in science and scientists. This needs to be worked at because it cannot be taken for granted.

As part of his international leadership towards the goal of sustainable development, the UN Secretary-General two years ago created this Scientific Advisory Board and in doing so signaled that decision-making must be informed by interdisciplinary scientific evidence and knowledge. I am heartened to note that the Board is working within the UN at an international level to further strengthen that collaboration and interface between scientists, policy-makers and society. As such and on the basis of sound scientific evidence, this enables further action by the international community to advance sustainable development and eradicate poverty.

In addressing today's global development challenges, science, technology and innovation must be relevant to the needs and aspirations of each and every country. Science must be pursued with a purpose. While basic research is a fundamental requirement for the expansion of knowledge, translational research is also critical to solve the problems of today and the future. International collaboration and networking in science, exemplified so well by this Scientific Advisory Board, is also a key imperative, because science has no geographic, political or cultural boundaries. International cooperation needs to emphasize capacity-building, with advanced countries assisting and strengthening the scientific abilities of developing countries such as ours.

Ladies and gentlemen,

For Malaysia, the past three decades have been a period of rapid and sustained growth facilitated by the Government through liberalizing of markets, offering incentives for investment, removing barriers and encouraging the private sector to help co-develop our progress. We have put in place policies, regulations and guidelines to promote sustainable development; our aim is a clean, safe and healthy environment for all Malaysian. As we prepare to join the ranks of the high-income nations, we will be inspired by the precedent set in the last.

At the 1992 Earth Summit in Rio, countries adopted Agenda 21, a blueprint to achieve economic growth while ensuring social equity and environmental protection. Twenty three years on, it is increasingly clear that issues like inequity, poverty, illness and environmental degradation are not separate phenomena, not separate issues but closely connected like links in a chain.

That is why Malaysia has pursued integrated sustainable development strategies which includes our recently launched 11th Malaysia Plan – bringing economic, social and environmental objectives of society together – in order to maximize human well-being in the present without compromising the interest and the needs of future generations.

Ladies and gentlemen,

Moving forward to achieve sustainable growth well into the future, the Prime Minister is championing the Science to Action (S2A) initiative aligned with our government's New Economic Model. Operating within the S2A framework is the Malaysia Chapter of the global Sustainable Development Solutions Network (SDSN), a group identifying Malaysia's best practices and models. Outside this hall are several info-walls and exhibits on Malaysia's best practices on sustainable development. I respectfully invite members of The Board to view these and take this opportunity to consider Malaysia's many innovative programs presented in this showcase.

This is a particularly significant and exciting year for Malaysia in the international community, having been chosen to serve on the United Nations Security Council, as the Chair of ASEAN, and today as host of this third meeting of the UN Secretary-General's Scientific Advisory Board. All three are a tribute to Malaysia and its long-standing reputation as a responsible member of the international community.

In closing, I sincerely hope this two-day meeting of distinguished minds will provide several game-changing recommendations which would help set the world on a more sustainable path in this generation and in future generations to come. On that note, ladies and gentlemen, I take pleasure in officially declaring this Third United Nations Secretary-General Scientific Advisory Board Meeting open.

Thank you.



## ANNEX II – LIST OF PARTICIPANTS

Irina BOKOVA	Director-General of UNESCO – Co-Chairperson
--------------	---

---

### SAB Members

---

Tanya ABRAHAMSE	CEO, South African National Biodiversity Institute
JOJI CARIÑO	Director, Forest Peoples Programme
Rosie COONEY	Chair, International Union for Conservation of Nature Sustainable Use and Livelihoods Specialist Group
Abdallah S. DAAR	Professor of Public Health Sciences and of Surgery Chief Scientist and Chief Ethics Officer of Grand Challenges Canada
Gebisa EJETA	Distinguished Professor of Agronomy, Purdue University
Vladimir FORTOV	President, Russian Academy of Sciences (RAS)
Fabiola GIANOTTI	Research physicist, CERN
Ke GONG	President, Nankai University
Jörg Hinrich HACKER	President, German National Academy of Sciences Leopoldina
Maria IVANOVA	Co-Director, Center for Governance and Sustainability; McCormack Graduate School of Policy and Global Studies University of Massachusetts Boston, USA
Eugenia KALNAY	Professor of Atmospheric and Oceanic Science, University of Maryland, USA
Reiko KURODA	Professor, Research Institute for Science and Technology, Tokyo University of Science
Dong-Pil MIN	Emeritus Professor of Physics, Seoul National University; Ambassador for Science and Technology Cooperation of Republic of Korea
Carlos NOBRE	National Secretary for R&D Policies at the Ministry of Science, Technology & Innovation of Brazil
Shankar SASTRY	Professor of EECS, BioE and ME and Dean, College of Engineering, UC Berkeley, USA Director, Blum Center for Emerging Economies
Hayat SINDI	Co-Founder and Director of 'Diagnostics for All'; Founder and President, Institute for Imagination and Ingenuity
Ada E. YONATH	Director of the Helen and Milton A. Kimmelman Center for Biomolecular Structure and Assembly of the Weizmann Institute of Science
Zakri ABDUL HAMID	Science Adviser to the Prime Minister of Malaysia;

Chair, IPBES – Co-Chairperson of SAB

---

**Observers**

---

Nordin HASSAN	Director, ICSU Regional Office for Asia and the Pacific
Grigory ORDZHONIKIDZE	Secretary-General, Commission of the Russian Federation for UNESCO
Svetlana DESIATNIKOVA	Director-General, ROST-Eco
Marina KOCH-KRUMREI	German National Academy of Sciences - Leopoldina
Ruth Maria NARMANN	German National Academy of Sciences - Leopoldina

---

**SAB Secretariat**

---

Flavia SCHLEGEL	Assistant Director-General for Natural Sciences
Salvatore ARICÒ	Natural Sciences Sector
Isabelle BRUGNON	Natural Sciences Sector
Ana PERSIC	UNESCO NY Office
Fera Fizani AHMAD FIZRI	Malaysian Industry-Government Group for High Technology (MIGHT) (on secondment to UNESCO Natural Sciences Sector)
Cynthia GUTTMAN	Office of the Director-General

---



### ANNEX III – MEETING PROGRAMME

Sunday, 24 May 2015

Arrival of SAB Members

18:30 – 20:00 Welcoming reception hosted by Office of the Science Advisor to the Prime Minister of Malaysia

Monday, 25 May 2015

09:30 - 09:45 1. Opening Session

- Opening remarks by the Director-General of UNESCO, Chairperson of SAB

Co-Chairpersons: Mdm Irina Bokova and Professor Zakri Abdul Hamid

09:45-11:15 2. Substantive session I

A. Consideration and endorsement of the SAB policy briefs on:

- Climate change / climate risks
- Data revolution
- The High Level Political Forum and the Global Sustainable Development Report

11:15-11:30 Coffee break

11:30-13:00 2. (ctd.)

B. Means of implementation of the post-2015 development agenda<sup>1</sup>

3. Substantive session II: Results of the Delphi study on top challenges for the future of the people and the planet

13:00 – 14:00 Lunch break

14:00 - 17:00 3. (ctd.)

4. Substantive session III: Priorities for and organization of future work of the SAB in light of key events in 2015

A. Further sessions of the negotiations on the post-2015 development agenda and the 2015 meeting of the High Level Political Forum

B. Twenty-first session of the Conference of Parties to the UN Framework Convention on Climate Change

17:00 - 17:30 5. Summary of discussions and deliberations of Day 1

---

<sup>1</sup> The discussion and related background documentation will reflect the outcomes of the SAB round table on means of implementation (UN Headquarters, New York, 23 April 2015).

- 19:00 – 21:00 Dinner hosted by MIGHT (Venue: KL Tower)
- Guest of Honour: Minister Dato' Mah Siew Keong, Minister in the Prime Minister's Department
- Welcoming remarks by Prof. Zakri Abdul Hamid
  - Remarks by the Director-General of UNESCO
  - Special address by Minister Dato' Mah Siew Keong

26 May 2015 (Day 2)

- 9:00 – 11:45 6. Welcoming Ceremony
- Welcoming remarks by Prof. Zakri Abdul Hamid
  - Remarks by the Director-General of UNESCO
  - Special message by His Excellency Ban Ki-Moon, Secretary-General of the United Nations
  - Special Address by the Honourable Dato Sri Mohd Najib Tun Abdul Razak, Prime Minister of Malaysia (Delivered by the Deputy Prime Minister)
  - Photo Session and Info Wall Walkthrough
  - Coffee break / Press conference (TBC)
  - Performance by PERMATA Seni
  - "Meet the United Nations Secretary-General Scientific Advisory Board Members"
- 11:45 – 13:00 7. Substantive session IV: Priorities for and organization of future work of the SAB in light of recent requests by the Secretary-General
- Recognition of Indigenous and Local Knowledge
- 13:00 - 14:00 Lunch hosted by PETRONAS (Venue: Petronas Twin Towers)
- Briefing at Sky Bridge and Observation Deck (Level 86)
  - Remarks by the Host
  - Remarks by Prof. Zakri Abdul Hamid
  - Remarks by the Director-General of UNESCO
- 
- 14:00 – 16:00 7. (ctd.)
8. Discussion on application of advice provided by SAB once conveyed to the Office of the Secretary-General
- 16:00 – 16:20 9. Summary of the 3<sup>rd</sup> Meeting of the SAB
- 16:20 – 16:30 10. Closure of the meeting



#### ANNEX IV – MEDIA COVERAGE

The table below lists the articles which have appeared in local and international press:

No	Date	Media Title	Topic	Country	Visitor
1	20/5	The Times of India	Leading scientists to identify top 8 challenges to future of humanity	India	N/A
2	26/5	EurekaAlert	Top challenges for the future of humanity and the planet	United States	N/A
3	26/5	One World News	Planetary boundaries have been crossed, warns science panel	United Kingdom	N/A
4	26/5	The Malaysian Times	Science must be relevant to nation's aspirations – Muhyiddin	Malaysia	9,827
5	26/5	Click Green	The 8 top challenges to secure a sustainable future	United Kingdom	6,315
6	26/5	The Sun Daily	Muhyiddin: Science must be relevant to nation's aspirations	Malaysia	4,056
7	26/5	One World	Planetary boundaries have been crossed, warns science panel	United Kingdom	N/A
8	26/5	Sustainable Energy Policy & Practice - IISD	UN Scientific Advisory Board Discusses "Big Ideas" for the Future of Humanity and the Planet	United States	N/A
9	26/5	Barisan Nasional Backbenchers Council	Sains perlu relevan dengan aspirasi negara	Malaysia	N/A
10	26/5	Portal Berita Radio Televisyen Malaysia	Sains Perlu Relevan Dengan Aspirasi Negara - TPM	Malaysia	N/A

Additional communication materials include a UNESCO [press release](#) and dedicated news items on the SAB [web site](#).

Moreover, an [interview](#) with Ms Irina Bokova and Professor Zakri was aired by *Astro Awani* on 26 May 2015, at 20.30 (UCT + 8).

## ANNEX V – WORK PROGRAMME AND TIMELINE

Date & Place	Event	SAB input
9 July New York, USA	Ministerial Breakfast at ECOSOC/HLPF	<ul style="list-style-type: none"> <li>- SAB Paper on HLPF/GSDR</li> <li>- SAB Paper on Data Revolution</li> <li>- SAB Paper on MOI</li> </ul>
7-10 July Paris, France	Side event at the Climate Science Conference	Draft SAB Paper on Climate Risks
25-27 September New York, USA	High Level side event at the UN Summit	<ul style="list-style-type: none"> <li>- Results Delphi Study</li> <li>- All SAB Papers</li> </ul>
4-7 November Budapest, Hungary	World Science Forum	All SAB Papers
26-28 November Paris, France	Weathering Uncertainty (LINKS)	SAB Paper on ILK
30 Nov- 11 Dec Paris, France	Side event at the UNFCCC COP 21	SAB Paper on Climate Risks
14-15 December St. Petersburg, Russian Federation	SAB 4	



## ANNEX VI – LIST OF DOCUMENTS

### Meeting Programme

#### Draft Policy Briefs for consideration and endorsement:

- Climate change/climate risks
- Data Revolution on Sustainable Development
- High Level Political Forum and Global Sustainable Development Report

#### Statements to SAB Roundtable on Means of Implementation of Post-2015 Development Agenda

- Community Based Monitoring of SDGs – Ms Joji Cariño
- Evidence-based implementation and monitoring of the Sustainable Development Goals – Professor Maria Ivanova
- Science, Technology and Innovation: Critical Means of Implementation for Sustainable Development – Professor Joerg Hacker
- Inclusive Development – Professor Wole Soboyejo
- Key messages on Means of Implementation – Professor Zakri Abdul Hamid
- Presentation and Statement on Monitoring the SDGs: The role of the UIS – Ms Silvia Montoya

#### Delphi Study on Top Challenges for the Future of the People and the Planet

#### SAB Secretariat presentations on:

- Negotiations on the Post-2015 Development Agenda, the 2015 Meeting of the High Level Political Forum and the Third International Conference on Financing for Development
- Twenty-first session of the Conference of the Parties to the UN Framework Convention on Climate Change

#### Information documents related to a presentation on Recognition of Indigenous and Local Knowledge

- IPBES Expert Workshop Report on the Contribution Of Indigenous And Local Knowledge Systems To IPBES: Building Synergies With Science
- Information note on the IPBES Task Force on indigenous and local knowledge systems

#### UNESCO Institute of Statistics Information Paper: How much to invest in basic research?