

Science and the Sustainable Development Goals: the role of academies IAP Triennial Conference, 9-10 April 2019, Songdo

SUMMARY NOTE

1. Summary

The 2019 triennial conference was themed on the role of science and the academies in supporting the UN Sustainable Development Goals (SDGs). It provided a platform for exploring opportunities to engage, sharing good practice and lessons learned, and identifying priority actions where academies can best add value.

Key take-home messages were:

- Academies are **vital partners in the global voice for science**.
- Academies can help integrate science into SDGs implementation processes at **national, regional and global levels**; academies can use their IAP and (where relevant) International Science Council (ISC) membership to contribute at the global level, and their IAP regional network to contribute regionally.
- **National level actions are critically important** because this is where policy is designed, implemented and reviewed. Examples include supporting:
 - national STI-for-SDGs roadmaps
 - country delegations to UN policy summits and fora
 - communication and outreach efforts to raise awareness of the SDGs amongst the science community and wider publics.
- To remain relevant, academies must **adapt to and adopt the imperative for open and inclusive science**: think and act more inclusively. This includes
 - supporting the principles and practices of open access and open data
 - integrating knowledge across scientific fields and disciplines
 - drawing on the full diversity of scientific capacities
 - opening up their membership, working in partnership, using their convening power to draw on wide-ranging expertise and insight.
- Academies are more than just a repository of knowledge: they should also be **communicators and inspirers**, helping to create a vision for (basic and applied) science and its value to society, and inspiring young people to become scientists.
- Academies should harness the energy, insight and ability of **young scientists and young academies**, and invest in (very early) science education.
- Academies should **adopt sustainable practices** in their own operations: for example, reduce unnecessary travel, maximise the utility of meeting time, offset carbon costs; minimise printing, food waste and use of disposable plastic bottles, and maximise recycling of materials; and embed equality and inclusion as normal practice.
- Academies need to be **proactive**: don't wait to be asked!

2. Context

This was the seventh IAP triennial conference, generously hosted by the Korean Academy of Science and Technology (KAST). The programme is at Annex A. Fifty-four academies were represented, constituting nearly 40% of IAP membership¹, together with all four IAP regional networks, Global Young Academy representatives, guests and speakers

¹ Broken down by region: 16 (47%) AASSA (Asia/Pacific), 14 (56%) NASAC (Africa), 10 (50%) IANAS (the Americas) and 14 (51%) EASAC(Europe) members

from other international science networks and policy practitioners. All participants are listed at Annex B.

The programme was part-informed by the IAP project "[Improving scientific input to global policymaking](#)" and an accompanying summary report of the project was distributed to all participants, which includes a "How to.." checklist for engaging with the SDGs which will be released on 14 May 2019. All Powerpoint presentations are available [here](#) and conference photos [here](#).

3. Objectives

The objectives of the conference were aligned to each session (Annex A).

- i. to understand the role of science in supporting the UN's Sustainable Development Goals (SDGs), the imperative for the global science community to support them, and the transformation in science required to realise them;
- ii. to look at how national science academies are supporting the implementation of the SDGs, what they can learn from this process and from each other;
- iii. to explore opportunities for engagement ("pathways") in the UN system;
- iv. to consider how academies can respond to increasing demands and expectations placed on the science community;
- v. to explore two thematic case studies as learning tools for engaging with the SDGs;
- vi. to agree a set of actions that academies can implement in their own national and regional contexts.

4. Summary of programme

Session 1: Putting science and the SDGs in perspective

Participants heard about the imperative for the global science community to support the implementation of the SDGs:

- Professor Jacqueline McGlade's passionate and inspiring appeal to academies to be at the forefront of these efforts; emphasising the importance of co-creating knowledge with diverse communities of practice and expertise, engaging multiple perspectives, and ultimately helping to design a liveable future, predicated on uncertainty.
- Dr Bill Colglazier's practical guide to opportunities for the science community created by the SDGs: the requirement for inter/cross disciplinary policy studies, STI-for-SDGs national roadmaps, systems analyses, and understanding the positive and negative impacts of disruptive innovation.
- Professor Eva Alisic's account of the lessons learned from the IAP project on the SDGs: the resources it has developed to help academies navigate their way around processes for implementing the SDGs and how to use the different pathways for science into the UN system, not least the Voluntary National Reviews (VNRs); the importance of overcoming institutional inertia, focusing on SDGs and indicators that are poorly supported, and engaging all disciplines.

Session 2: The role of academies in supporting the SDGs: what can we learn from each other?

Participants heard from academies already engaging with the SDGs in their own countries and regions, in diverse and ambitious ways (Argentina, Brazil, South Africa, Sri Lanka, Korea, EASAC and the GYA). Their key messages included (i) use IAP regional networks to share good practice, embrace all skillsets and translate at the local level; (ii) be proactive, engage with society and develop strategic relationships with key influencers; (iii) establish credibility as honest and inclusive brokers; (iv) develop mechanisms for senior and young scientists to work together more effectively; and (v) train young scientists to be better science communicators and give them opportunities to make their mark.

Session 3: Opportunities for engagement in the UN system

Participants heard from policy practitioners about ways the academies could engage with different parts of the UN system globally and regionally. Most notably:

- Dr Katinka Weinberger (UNESCAP) identified ways in which academies can help with planning (identifying priorities and targets); delivery/action (public outreach, building cooperative partnerships); and follow-up and review (assessing progress, identifying priorities and (data) gaps). She encouraged academies to engage (i) at the national level – by supporting VNRs and their follow-up, strengthening national statistical capacities, being part of national delegations to the UN, and supporting SDG-relevant projects; and (ii) at the regional level – by engaging with Annual Regional Fora on Sustainable Development, providing case studies, reports and knowledge, participating in review processes and showcasing good practice.
- Dr Heide Hackmann (International Science Council, ISC) spoke of ISC's role in supporting UN processes, an information overload amongst UN policymakers and their increasing demand for solutions. She reiterated the

importance of ISC and IAP to work together to help science serve society and referred to an ISC White Paper on science in and for the UN which will help inform both networks. Dr Hackmann encouraged academies to contribute to global position papers, statements and reviews channelled through ISC in its Major Group capacity; help translate global agendas at national and local levels; and use and support national level implementation processes (supporting country delegations, STI road mapping and outreach).

Session 4: How can academies better respond to these opportunities?

Participants heard about [the think piece on the role of academies in the 21st century](#), prepared by the [IAP Working Group](#) on the SDGs² and shared with all IAP members prior to the conference. Academies were urged to (i) act at all levels – national, regional and global; (ii) maintain quality while increasing inclusivity; (iii) encourage disciplinary inclusiveness and interaction; (iv) revitalise the science-for-society mission; and (v) be strong advocates for rationality. The IAP Executive Directors presented the highlights of the new IAP Strategic Plan, which draws on many of the lessons learned from recent IAP projects.

Session 5: IAP Food and Nutrition Security and Agriculture (FNSA) project

Participants heard about an exemplar of interacademy cooperation, through the FNSA project and the imperative for academies to work in a cross-academy, cross-disciplinary, cross-sectoral way. Cutting across 13 SDGs, this project is unique in its integrated, interregional approach. The global synthesis report can be found on the IAP webpages [here](#)³, together with links to each regional report, and academies were encouraged to help with its dissemination in their respective countries.

Session 6: Artificial Intelligence (AI)

Participants had an insight into the fast-moving world of new and emerging technologies, through AI, and the vital importance of robust yet-to-be defined governance. Academies were encouraged play a leadership role in developing international policy and regulation to govern AI.

Special session: The World Health Organisation (WHO) and science

Participants heard from Dr Vasee Moorthy (WHO) about WHO's restructuring and renewed focus on science, including the appointment of a Chief Scientist, Professor Sumiya Swaminathan, who provided a video message. Academies were invited to contribute to WHO health policy by supporting national research and innovation agendas, responding to WHO calls for science-policy reports, partnering with WHO on public and international engagement, and making a case for a public access model for pathogen sequence sharing.

Concluding session: Future challenges for academies in a changing world

Panellists acknowledged that academies need to adapt to changing demands and move from “keeping up” to “taking the lead”, from “reaching out to” to “connecting with” broader society, and from “adapting” to “shaping change”. The summary on page 1 of this report summarises key messages. It was observed that it is not just science academies that need to change to remain relevant: publishers and conventional political parties, for example, are all struggling to stay relevant, as they are rejected by many people who feel excluded.

5. Conference feedback

An online questionnaire was completed by 34 participants (c.20%). Feedback to date has been very positive. The majority of respondents have favoured a mix of scientific content and peer learning for future triennial conferences. For those who have not completed the survey, please do so at tinyurl.com/2019IAP. It only takes five minutes and will help inform and improve future IAP triennial conferences. The survey will be open until the end of May 2019. Results will be anonymized and posted online.

Social media activity increased significantly during the course of the conference with over 39,000 impressions (or number of times users saw IAP tweets on Twitter) in two days.

6. Acknowledgements

Professor Volker ter Meulen, IAP President, thanked all those involved in the 2019 Triennial Conference: most notably, the generous host, KAST and its support team; the moderators, Professor Ryan Song and Dr Ed Gerstner; the IAP Scientific Committee; and the IAP secretariat.

² <http://www.interacademies.org/36065/Roster#tabs>

³ <http://www.interacademies.org/48898/Opportunities-for-future-research-and-innovation-on-food-and-nutrition-security-and-agriculture-The-InterAcademy-Partnerships-global-perspective>

ANNEX A: PROGRAMME

9 APRIL 2019		
Welcoming remarks		
9:00-9:15	Opening Ceremony	Professor Min-Koo Han , President KAST Professor Volker ter Meulen and Professor Liu Depei , Co-Presidents IAP
SESSION 1: PUTTING SCIENCE AND THE SDGS IN PERSPECTIVE Moderators: Professor Ryan (Seryeon) Song, Kyung Hee University and Dr Ed Gerstner (Director of Journal Policy and Strategy, Nature) Objective 1: to understand the role of science in supporting the UN's Sustainable Development Goals (SDGs), the imperative for the global science community to support them, and the transformation in science required to realise them.		
9:15-10:00	KEYNOTE: How can the global science community meet the challenge of the Sustainable Development Goals?	Professor Jacqueline McGlade , Professor of Resilience and Sustainable Development, University College London and Former UNEP Chief Scientist
10:00-10:15	Taking stock of STI-for-the-SDGs: a critical analysis	Dr Bill Colglazier , Editor-in-Chief of Science & Diplomacy
10:15-10:30	The IAP project "Improving scientific input to global policymaking"	Professor Eva Alisic , IAP Project Co-Chair, the IAP SDGs project
10:30-11:00	Discussion	
11:00-11:30	COFFEE BREAK	
SESSION 2: THE ROLE OF ACADEMIES IN SUPPORTING THE SDGS: WHAT CAN WE LEARN FROM EACH OTHER? Moderators: Professor Ryan Song and Dr Ed Gerstner Objective 2: to explore how national science academies are supporting the implementation of the SDGs, what they can learn from this process and from each other.		
11:30-13:00	National case studies in the Americas	Professor Roberto Williams , President National Academy of Exact, Physical and Natural Sciences, Argentina Professor Luiz Davidovich , President, Brazilian Academy of Sciences
	National case studies in Africa	Professor Himla Soodyall , Executive Officer, Academy of Science of South Africa (ASSAf)
	National case studies in Asia	Professor Ranjith Mahindapala , President, National Academy of Sciences, Sri Lanka Professor Hye-Yeong Chun , KAST
	EASAC: a regional case study	Professor Thierry Courvoisier , President of EASAC
	Engaging with the SDGs: a Global Young Academy perspective	Professor Yoko Shimpuku , Kyoto University
	Discussion	
13:00-14:00	LUNCH	
SESSION 3: OPPORTUNITIES FOR ENGAGEMENT IN THE UN SYSTEM Moderators: Professor Ryan Song and Dr Ed Gerstner Objective 3: to explore opportunities for engagement in the UN system.		
14:00-14:20	Engaging with international science assessment programmes [working title]	Professor Changmo Sung , Past Member, Technology Executive Committee, UNFCCC
14:20-14:40	Working with UN Regional Commissions	Dr Katinka Weinberger , Chief, Environment and Development Policy, UN Economic and Social Commission for Asia and the Pacific (UNESCAP)
14:40-15:00	Supporting the Technology Facilitation Mechanism and the S&T Community Major Group	Dr Heide Hackmann , CEO, International Science Council

15.00-15.30	Discussion	
15.30-16.00	TEA BREAK	
SESSION 4: HOW CAN ACADEMIES BETTER RESPOND TO THESE OPPORTUNITIES? Moderators: Professor Ryan Song and Dr Ed Gerstner <u>Objective 4:</u> to consider how academies can respond to increasing demands and expectations placed on the science community.		
16.00-16.20	How can academies continue to be relevant in a fast-changing world?	Dr Tracey Elliott , Project Director, IAP SDGs project
16.20-16.40	The philosophy and practice of the young academies	Professor Tolu Oni , Co-Chair, Global Young Academy
16.40-17.00	Preparing for IAP's next strategic plan: a roadmap to 2030?	Dr Teresa Stoepler and Dr Peter McGrath , IAP Executive Directors
17.00-17.30	Discussion	
	CONFERENCE DINNER	
10 APRIL 2019		
SESSION 5: THEMATIC CASE STUDY 1: IAP FOOD & NUTRITION SECURITY & AGRICULTURE (FNSA) Moderators: Professor Mohamed Hassan (President, Sudanese National Academy of Sciences) and Dr Ed Gerstner <u>Objective 5(a):</u> to explore IAP's FNSA interregional project as a learning tool for engaging with the SDGs.		
9.00-9.10	Introduction	Professor Mohamed Hassan President, Sudanese National Academy of Sciences
9.10-9.30	The FNSA report and European Academies Science Advisory Council (EASAC)	Dr Robin Fears , Director, Biosciences Programme, EASAC
9.30-9.50	Network of African Science Academies (NASAC)	Professor Sheryl Hendriks , Institute for Food, Nutrition and Well-being, University of Pretoria
9.50-10.10	Association of Academies & Societies of Science in Asia (AASSA)	Professor Paul Moughan , Riddet Institute, Massey University
10.10-10.40	COFFEE BREAK	
10.40-11.00	Food security prospective and strategic plan for Korea	Professor Hyun Jin Park , School of Life Sciences & Biotechnology, Korea University
11.00-11.20	InterAmerican Network of Academies of Science (IANAS)	Professor Jeremy McNeil , Co-chair, IANAS
11.20-12.00	Discussion	
12.00-13.30	LUNCH	
SESSION 6: THEMATIC CASE STUDY 2: ARTIFICIAL INTELLIGENCE (AI) Moderators: Professor Peggy Hamburg (Foreign Secretary, US National Academy of Medicine) and Professor Ryan Song <u>Objective 5(b):</u> The development of AI represents a seminal event in human history, but much about it remains poorly understood and how its transformative potential will be applied remains to be determined. This session will examine opportunities to drive innovation and application in ways that will improve lives and support the SDGs in several key areas, while recognizing concerns about what this evolving technology may mean for the future of jobs, ethics and privacy, worsening inequality and other perceived threats. How can the academies help identify important opportunities to apply AI approaches to achieve a broad set of the SDGs?		
13.30-13.40	An introduction to AI: challenges and opportunities	Professor O. K. Baek , Electronics & Telecommunications Research Institutes
13.40-13.55	AI and Smart Cities	Dr. Jeonming Seong , McKinsey & Company

13.55-14.10	AI and Health	Dame Professor Anne Johnson , Vice-President, International, Academy of Medical Sciences UK
14.10-14.40	Discussion	
SPECIAL THEME: Dr Ed Gerstner		
14.40-15.00	Special theme: The World Health Organisation (WHO) and science	Dr. Vasee Moorthy , Coordinator, Research, Ethics, Knowledge Uptake, World Health Organization
15.00-15.30	COFFEE BREAK	
<p>CONCLUDING SESSION: DISCUSSION PANEL: FUTURE CHALLENGES FOR ACADEMIES IN A CHANGING WORLD Moderator: Dr Ed Gerstner and Professor Ryan Song <u>Objective 6:</u> to agree a set of actions that academies can implement in their own national and regional contexts. Discussion panel:</p> <ul style="list-style-type: none"> • Professor Volker terMeulen, IAP President • Professor Eva Alisic, IAP Project Co-Chair, the IAP SDGs project • Dr Heide Hackmann, CEO, International Science Council • Professor Tolu Oni, Co-Chair, Global Young Academy • Professor Bruce Alberts, University of California, San Francisco • Professor Luiz Davidovich, President, Brazilian Academy of Science 		
17.00	CONFERENCE CLOSING CEREMONY	

ANNEX B: LIST OF PARTICIPANTS

1. Acad. Jorge Neira, **Argentina**
2. Dr. Roberto Juan Williams, **Argentina**
3. Dr. Eva Alisic, **Australia**
4. Prof. Cheryl Praeger, **Australia**
5. Ms. Nancy Pritchard, **Australia**
6. Prof. Z. N. Tahmida Begum, **Bangladesh**
7. Prof. Mahouton N. Hounkonnou, **Benin**
8. Dr. Luiz Davidovich, **Brazil**
9. Prof. Helena Bonciani Nader, **Brazil**
10. Mr. Marcos Scheuenstuhl, **Brazil**
11. Prof. Julian Revalski, **Bulgaria**
12. Dr. Chad Gaffield, **Canada**
13. Prof. Jeremy McNeil, **Canada**
14. Prof. Juan A. Asenjo, **Chile**
15. Mr. Haitao Chen, **China**
16. Dr. Kai Feng, **China**
17. Dr. Ruihua Feng, **China**
18. Dr. Lin Huang, **China**
19. Dr. Jian Li, **China**
20. Prof. Depei Liu, **China**
21. Dr. Jiangfeng Liu, **China**
22. Dr. Juntao Yang, **China**
23. Prof. Tao Zhang, **China**
24. Mr. Yang Zhao, **China**
25. Prof. Zvonko Kusic, **Croatia**
26. Prof. Modesto Cruz, **Dominican Republic**
27. Prof. Sameh Soror, **Egypt**
28. Prof. Tsige G.Woldemariam, **Ethiopia**
29. Dr. Päivi Tikka, **Finland**
30. Prof. Olivier Pironneau, **France**
31. Dr. Heide Hackmann, **France**
32. Prof. Bärbel Friedrich, **Germany**
33. Dr. Christiane Diehl, **Germany**
34. Prof. Detlev Ganten, **Germany**
35. Dr. Jörg Heldmann, **Germany**
36. Dr. Marina Koch-Krumrei, **Germany**
37. Prof. Otmar Schöber, **Germany**
38. Prof. Volker ter Meulen, **Germany**
39. Dr. Beate Wagner, **Germany**
40. Prof. Samuel Sefa-Dedeh, **Ghana**
41. Prof. Mario R. Lanza Santamaria, **Honduras**
42. Mr. Andras Baldi, **Hungary**
43. Prof. Krishan La, **India**
44. Ms. Muthoni Kareithi, **Italy**
45. Dr. Peter McGrath, **Italy**
46. Mr. Giovanni Ortolani, **Italy**
47. Dr. Yoko Shimpuku, **Japan**
48. Prof. Kazuhiko Takeuchi, **Japan**
49. Mr. Conor de Lion, **Jordan**
50. Prof. Raphael Muatine Munavu, **Kenya**
51. Ms. Jackie Olang-Kado, **Kenya**
52. Prof. Byungjoon Ahn, **Korea**
53. Prof. O. K. Baek, **Korea**
54. Ms. Jung Ah Choi, **Korea**
55. Prof. Hye_Yeong Chun, **Korea**
56. Prof. Chinha Chung, **Korea**
57. Dr. Jin Ho Chung, **Korea**
58. Prof. Min-Koo Han, **Korea**
59. Prof. Yoo Hang Kim, **Korea**
60. Ms. Lyunhae Kim, **Korea**
61. Dr. Hosung Kim, **Korea**
62. Prof. Oh-Kyong Kwon, **Korea**
63. Prof. Mooha Lee, **Korea**
64. Mr. Jae Hyoung Lee, **Korea**
65. Dr. Myung Chul Lee, **Korea**
66. Prof. Jeongmin Seong, **Korea**
67. Prof. Ryan (Seryeon) Song, **Korea**
68. Prof. Changmo Sung, **Korea**
69. Prof. Talavs Jundzis, **Latvia**
70. Prof. Lai Meng Looi, **Malaysia**
71. Dr. Michael Atchia, **Mauritius**
72. Dr. Jose-Luis Moran-Lopez, **Mexico**
73. Prof. Avid Budeebazar, **Mongolia**
74. Prof. Regdel Duger, **Mongolia**
75. Prof. Sunil Babu Shresta, **Nepal**
76. Prof. Marileen Dogterom, **Netherlands**
77. Prof. Paul Moughan, **New Zealand**
78. Dr. Marla Luisa Acosta, **Nicaragua**
79. Prof. Kalu Mostu Onuoha, **Nigeria**
80. Ms. Helene Rønning, **Norway**
81. Prof. Khalid Mahmood Khan, **Pakistan**
82. Dr. Hussain Shanak, **Palestine**
83. Prof. Gustavo F. Gonzales, **Peru**
84. Dr. Carmencita Padilla, **Philippines**
85. Prof. Dan Mircea Enescu, **Romania**
86. Prof. Ioan-Aurel Pop, **Romania**
87. Prof. Sergey Kolesnikov, **Russia**
88. Dr. Ababacar Sadikh Ndoeye, **Senegal**
89. Prof. Oumar Sock, **Senegal**
90. Dr. Tit Meng Lim, **Singapore**
91. Prof. Peter Samuely, **Slovakia**
92. Prof. Felix Dakora, **South Africa**

93. Prof. Sheryl Hendriks, **South Africa**
94. Mr. Stanley Maphosa, **South Africa**
95. Prof. Daya Reddy, **South Africa**
96. Prof. Himladevi Soodyall, **South Africa**
97. Prof. Nadira Karunaweera, **Sri Lanka**
98. Dr. Ranjit Mahindapala, **Sri Lanka**
99. Prof. Ahmed Habiballa El Safi, **Sudan**
100. Prof. Mohamed Hassan, **Sudan**
101. Prof. Kerstin Sahlin, **Sweden**
102. Prof. Thierry Courvoisier, **Switzerland**
103. Dr. Roger Pfister, **Switzerland**
104. Prof. Esther Mwaikambo, **Tanzania**
105. Ms. Thanyanan Kranlert, **Thailand**
106. Prof. Morakot Tanticharoen, **Thailand**
107. Dr. Katinka Margit Weinberger, **Thailand**
108. Prof. Ahmet Nuri Yurdusev, **Turkey**
109. Prof. Ahmet Cevat Acar, **Turkey**
110. Prof. Nelson Sewankambo, **Uganda**
111. Prof. Richard Catlow, **UK**
112. Ms. Ruth Cooper, **UK**
113. Dr. Tracey Elliott, **UK**
114. Dr. Robin Fears, **UK**
115. Dr. Ed Gerstner, **UK**
116. Prof. Anne Johnson, **UK**
117. Prof. Jacqueline, McGlade **UK**
118. Dr. Tolu Oni, **UK**
119. Prof. Bruce Alberts, **US**
120. Dr. John Boright, **US**
121. Dr. E. William Colglazier, **US**
122. Dr. Margaret Hamburg, **US**
123. Ms. Arlen Hastings, **US**
124. Prof. John G. Hildebrand, **US**
125. Prof. Cherry Murray, **US**
126. Dr. Teresa Stoepler, **US**
127. Ms. Nina Ward, **US**
128. Mr. James Phiri, **Zambia**
129. Prof. Kavwanga E.Yambayamba, **Zambia**
130. Prof. Francis Gudyanga, **Zimbabwe**