AMC & US NAS **COLABORATIONS** 1988-2018

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UNAM-AMC-FCCyT

US-Mexico Transboundary Drylands

San Luis Potosí, May 3 2018

- The **solid relationship** over the years between NAS and MAS has been very important for Mexico
- Seminars, visitis of scholars, and joint studies on the forefront of science have been carried out.
- The collaboration has been **enhanced** by the admission into the NAS of **ten** AMC members; Drs. Rodolfo Dirzo, Jorge Durand, Luis Herrera Estrella, Miguel León Portilla, Linda Manzanilla, Ricardo Miledi, Mario Molina, Rafael Palacios de la Lama, Manuel Peimbert, and José Sarukhán.
- Dr. Emilio Rosenblueth†, former president and founding member of the AMC, was also member of NAS.

Here we describe some **key activities** of this collaboration

Technology & Industrial Modernization

- **Technological Aspects of Industrial Modernization** is a project that begun in **1988**, and was reactivated in **1991** in collaboration with the U.S. National Academy of Engineering and the U.S. National Academy of Sciences.

- The result of these studies **was jointly published** in **1995** by MAS, the National Academy of Engineering and Fondo de Cultura Económica.

The Mexico City Aquifer

- From 1990 to 1994, a study entitled **The Mexico City Aquifer** was undertaken by **a binational committee** of experts from MAS, the **Academy of Engineering** (MAI), NAS and NRC. It was sponsored by the MacArthur Foundation, the Tinker Foundation, the Rockefeller Foundation, the Ford Foundation, the United Nations Development Program (UNDP), the Health Secretariat, and the U.S. Environmental Protection Agency.
- The results were **published in both English and Spanish** (El Agua y la Ciudad de México **-** Water and Mexico City). The NRC together with NAS, MAS and NAI, also published a **bilingual summary Mexico City's Water Supply: Improving the Outlook for Sustainability**.
- In 1995, the Miguel Alemán Foundation awarded the MAS the **Miguel Alemán Ecology and Environment Award**, in recognition of the quality of the studies on the Mexico City Aquifer.

Evaluation of graduate programs

- During 1995 - 1996, **UNAM´s graduate programs** in sciences, engineering, chemistry, and biomedicine were evaluated by a binational AMC-NAS committee, with Mexican and U.S. experts.

- The success of this assessment led to a second evaluation round in 1999. This one was directed to **graduate programs given in four SEP-Conacyt centers**; INAOE, CIMAT, CIO and CICESE.

Joint Working Group on Ocean Science

- In 1995, the **joint MAS - NRC ocean science group** was formed, with ten scientists from each country. The first meeting was held in Cuernavaca, Morelos in October 1995 and the second in Irvine, California in 1996.
- In 1998, the document **Building Ocean Science Partnerships, The United States and Mexico Working Together** was drafted, coordinated by Drs. Agustín Ayala Castañares and Robert A. Knox. **A bilingual edition** of the book was published by the National Academy Press in 1999.

Trilateral workshop Atmospheric change and the transport sector in North America

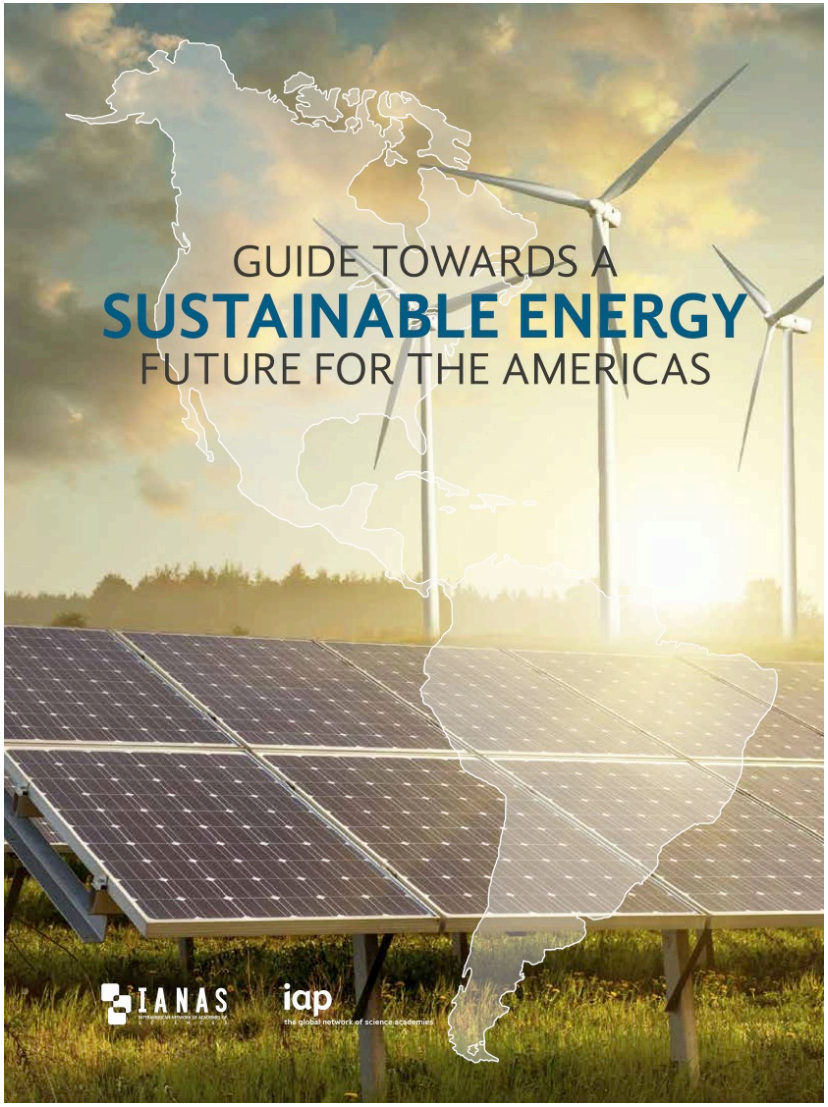
- In order to analyze the regional evolution of atmospheric change and formulate recommendations to mitigate the problems caused by the dynamic growth of the transport sector, in March 1997, at the invitation of the NRC, it was agreed to undertake a **trilateral study** conducted by the science academies of Canada, USA and Mexico.

- The study was **published in 1998 under the title Atmospheric Change and North American Transportation Sector: Summary of a Trilateral Workshop**.

Inter American Network of Academies of Sciences (IANAS)

- In **2003**, **MAS organized the first meeting of Academies of Sciences of Latin America**, with special guests from the IAP, the Royal Society of Canada, NAS, and OAS.It was held at MAS headquarters. As a result, the InterAmerican Network of Academies of Sciences (IANAS) was created in 2004 to foster the strengthening of national scientific capacities by reinforcing scientific- technological exchanges between the countries in the American continent as a tool for social development; cooperate in building the capacities of the Academies in the region by exchanging information and experiences; contribute to the creation of new Academies in countries that request support for the establishment of a Science Academy; and influence scientific decision-making throughout the continent, with the goal of promoting prosperity and equity in the hemisphere.

- Creation of the IANAS office at the AMC premises in Mexico City. Workshops and books on Water & Energy



- Elaboration of documents for the G7+5, G+, and G20 groups. Colaborations within IAP

Endorsing Academies

Prof. Dr. Roberto J. J. Williams
President Academia Nacional de Ciencias Exactas, Físicas y Naturales Argentina

Prof. Dr. Andrew Holmes
President Australian Academy of Science

Prof. Dr. Luiz Davidovich
President Brazilian Academy of Sciences

Prof. Dr. Maryse Lassonde
President Royal Society of Canada

Prof. Dr. Chunli Bai
President Chinese Academy of Sciences

Prof. Dr. Sébastien Candel
President Académie des Sciences France

Prof. Dr. Jörg Hacker
President Nationale Akademie der Wissenschaften Leopoldina Germany

Prof. Dr. Ajay K. Sood
President Indian National Science Academy

Prof. Dr. Sangkot Marzuki
President Indonesian Academy of Sciences

Prof. Dr. Alberto Quadrio-Curzio
President Accademia Nazionale dei Lincei, Italy

Prof. Dr. Takaaki Daidai
President Science Council of Japan

Prof. Dr. Jaime Urrutia Fucugauchi
President Academia Mexicana de Ciencias

Prof. Dr. Vladimir E. Fortov
President Russian Academy of Sciences

HRH Prince Dr. Turki bin Saud bin Mohammed Al-Saud
President King Abdulaziz City for Science and Technology, Saudi Arabia

Prof. Dr. Jonathan Jansen
President Academy of Science of South Africa

Prof. Dr. Myung Chul Lee
President Korean Academy of Science and Technology South Korea

Prof. Dr. Ahmet Cevat Acar
President Turkish Academy of Sciences

Prof. Dr. Venkatraman Ramakrishnan
President Royal Society United Kingdom

Prof. Dr. Marcia McNutt
President National Academy of Sciences, USA

G20 GERMANY 2017
SCIENCE 20 DIALOGUE

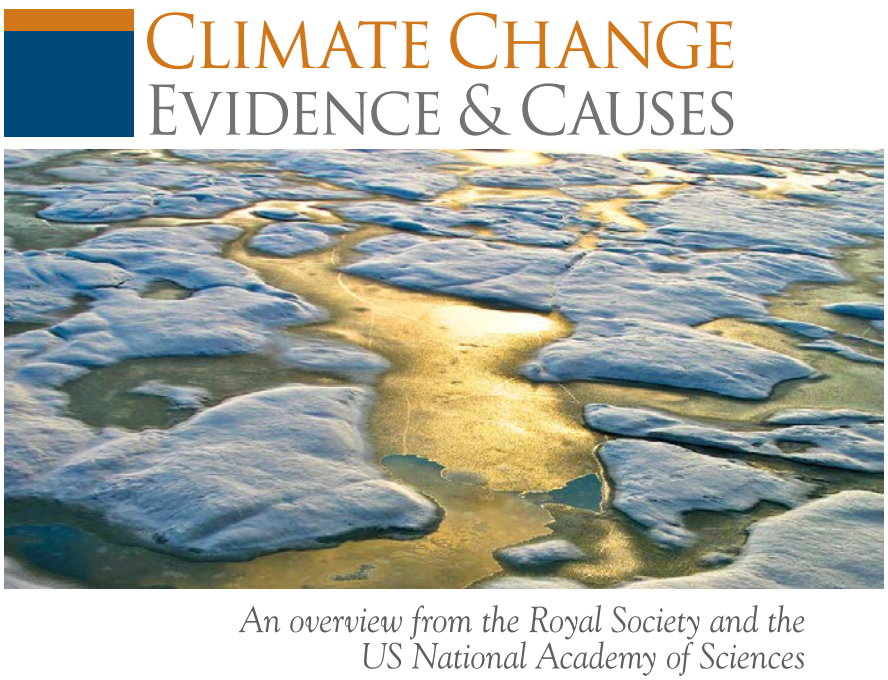
IMPROVING GLOBAL HEALTH

STRATEGIES AND TOOLS TO COMBAT COMMUNICABLE AND NON-COMMUNICABLE DISEASES

Executive Summary

Communicable (infectious) and non-communicable (non-infectious) diseases seriously endanger individual wellbeing and global health, and threaten the global economy. Strong short- and long-term evidence-based strategies are needed. The G20 Academies of Sciences call for (1) the strengthening of healthcare and public health systems, (2) applying existing and emerging knowledge, (3) addressing the broader social and environmental determinants of health, (4) reducing serious risk factors for disease through education and promotion of healthy life styles, (5) ensuring access to health resources globally, and (6) enhancing and extending robust strategies for surveillance and information-sharing. Furthering research is a prerequisite for providing knowledge and new tools to meet these challenges.

Translation into Spanish of the US NAS- UK RS booklet *Climate Change: Evidence and Causes (2014)*



New Horizons in Science Symposium, held in Mexico City in June 2014. It was the first collaboration of the AMC, the US NAS, and the Royal Society of Canada (Academies of Arts, Humanities, and Sciences of Canada).

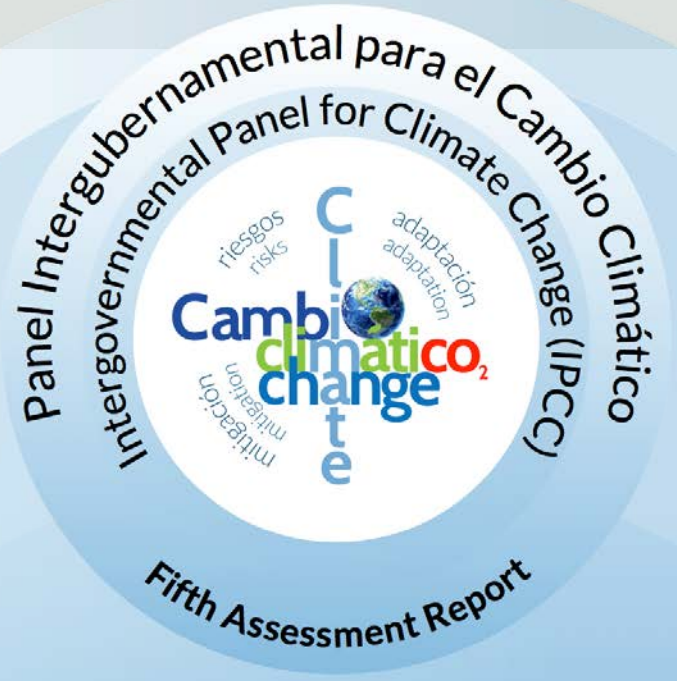
- It was done to bring together young scientisf of Canada, Mexico and the USA.
- Five sections: Astrophysics, Biotechnology, Green Chemistry, Hazards and Disasters, and Oceanography and Marine Biology
- Science as a key instrument for powering the North American region
- http://www.ianas.org/newhorizonsinscience/

CLIMATE CHANGE: RISKS, MITIGATION & ADAPTATION

IPCC Fifth Assesment Report
April 21st 2014

Senado de la República

Mexico City



Abril21 2014

Senado de la República

Reforma 135, ciudad de México

Ponentes

Mario Molina
Premio Nobel 1995, México

Carlos Gay
(UNAM), México

Michael Hanemann
(ASU), Estados Unidos

Robin Leichenko
(Rutgers U), Estados Unidos

Salvador Lluch-Cota
(CIBNOR), México

Amparo Martínez
(INECC), México

Omar Masera
(UNAM), México

Patricia Romero-Lankao
(NCAR), Estados Unidos

Roberto Sánchez
(El Colef), México

Jayant Sathaye
(Berkeley Lab), Estados Unidos

Claudia Sheinbaum
(UNAM), México

Comité organizador:

Francisco Bolivar Zapata • **Enrique Cabrero** • **Michael Clegg** • **José Franco** (Coordinador, México)
Alejandro Tello • **Ester Sztein** (Coordinadora, Estados Unidos)

CONACYT

INECC

centro mario molina

NATIONAL ACADEMY OF SCIENCES

UNITED NATIONS FOUNDATION

Reflexiones, propuestas y muchas tareas al concluir foro en el Senado

En la imagen (de izquierda a derecha) Cecilia Conde, José Franco, Alejandro Tello, Leonardo Curzio y Silvia Garza. Foto: ERJ/AMC.

Alejandra Monsiváis, Noemí Rodríguez y Miriam Gómez

Las conclusiones de los recientemente publicados reportes de los tres Grupos de Trabajo del Panel Intergubernamental sobre Cambio Climático indican que el cambio climático es la mayor amenaza que con mayor certeza enfrenta el género humano y toda la vida en la Tierra en este siglo, dijo Blanca Mendoza del Instituto de Geofísica de la Universidad Nacional Autónoma de México.

"Y más grave aún –agregó- es que no se va a eliminar sino que continuará durante los próximos siglos, según lo muestran los modelos y proyecciones científicas, los cuales, a pesar de las incertidumbres y la insuficiencia en la cantidad y calidad de los datos que utilizan, ofrecen un panorama general de lo que ocurrirá en el futuro".

En el mismo sentido, Cecilia Conde, investigadora del Centro de Ciencias de la Atmósfera de la UNAM, comentó que en el documento del Grupo de Trabajo II del IPCC, no se reportan impactos observados al cambio climático para México. "No hay información porque hace falta ciencia que indique en dónde ha cambiado el clima en el país, qué regiones de México se han calentado más y en cuáles ya cambió el patrón de lluvias. Lo que tenemos por ahora son estudios aislados".

Agregó que a México le irá muy mal si la temperatura promedio del planeta llega a los 2°C fijados a nivel internacional, por lo cual, planteó la necesidad de acelerar la negociación internacional para que globalmente no se llegue a esa cifra.

Con la misma idea, Carlos Gay, investigador del mismo Centro, comentó que nuestro país actualmente emite alrededor del 2% de las emisiones globales de gases de efecto invernadero, lo cual implica que sus emisiones se han incrementado en un 30% desde el 2007, año en el que representaban el 1.5% mundial.

"Esto sigue siendo muy poco –explicó-, de hecho, si México dejara de emitir aún se generaría en el resto del planeta el 98%, lo cual conduciría inevitablemente a un calentamiento en las temperaturas del planeta".

Con base en lo anterior, el doctor en astrogeofísica dijo que, en su opinión, deberían de priorizarse las medidas de adaptación pues, "no podremos controlar el 98% restante de las emisiones de los demás países, pero podemos controlar hasta donde sea posible las acciones de adaptación, la cual podría estar financiada con los recursos que se recabarían de las medidas de mitigación".

En su intervención Patricia Romero-Lankao, del *National Center for Atmospheric Research*, sostuvo que aunque es cierto que la situación ambiental a la que se enfrentan los habitantes del mundo es grave, también lo es que hay opciones para mitigar y adaptarse al cambio climático, varias de las cuales ya se llevan a cabo.

De hecho, afirmó, si en algo es distinto el reporte del Grupo II del IPCC, es que se conjuntaron las ciencias sociales con las naturales "no solamente para entender físicamente cómo funciona nuestro clima, sino también para entender la naturaleza humana, cómo percibimos el riesgo para entender que tenemos sectores poderosos, sociedades civiles organizadas, y mecanismos de participación para exigir a los tomadores de decisión cuentas".

Expresó que se tiene una ventana de oportunidad que se nos está cerrando, "pero nuestra labor como especialistas es encontrar opciones y evaluarlas para empoderar a los tomadores de decisiones".

Sobre este punto, Cecilia Conde recordó que México tiene una ley y una estrategia de cambio climático y que en mayo próximo se publicará el Programa Especial de Cambio Climático con indicadores.

Climate Resilience in Transboundary Arid Environments. The US-Mexico Case

Discuss **the challenges shared by the USA and Mexico** in order to reduce the vulnerability of the region to climate change.

- Meeting in Mexico City in February 2016
- Meeting in Washington DC in May 2016
- Meeting in Mexico City November 2017 at the Senate.
- Meeting in San Luis Potosí May 2018