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NEWS ALERT

Forum for Indian Science Diplomacy

RIS Science Diplomacy News Alert is your fortnightly update on Indian and global developments in science research, technological advancements, science diplomacy, policy and governance. The archives of this news alert are available at <http://fisd.in>. Please email your valuable feedback and comments to science.diplomacy@ris.org.in

GLOBAL

[Africa SDG Report Calls for Accelerated Action](#)

The SDG Center for Africa (SDGC/A) and the Sustainable Development Solutions Network (SDSN) released the 2019 Africa SDG Index and Dashboards Report. The report calls for, inter alia, accelerated action to address poverty (SDG 1), infrastructure and innovation (SDG 9) and environmental sustainability (SDGs 12, 13, 14 and 15). The report features data on 52 African countries and states that a lack of funding and resources is “the single most significant challenge” in both SDG implementation and monitoring.

[GEF's Work Program and New Priorities](#)

The 56th meeting of the Global Environment Facility (GEF) Council adopted the largest-ever Work Program for the GEF Trust Fund, totalling USD 865.9 million and comprising 31 projects, seven programs, and three multi-trust fund projects. The Work Program will benefit 91 recipient countries, including 30 Least Developed Countries (LDCs) and 32 Small Island Developing States (SIDS). It features four Impact Programs covering: food systems, land use, and restoration (FOLUR); Amazon forests; Congo Basin forests; and Dryland Landscapes.

[China and its next space station](#)

China has selected nine scientific experiments on its first major space station, scheduled to be completed in 2022. The China Manned Space Agency selected the projects, which involve scientists from 17 nations, in a process organized with the United Nations Office for Outer Space Affairs (UNOOSA). The new space station will be bigger than China's existing space laboratory, Tiangong-2. India has recently indicated it would build a space station in low earth orbit. From a Science Diplomacy perspective these developments indicate that international co-operation in space programs is increasing and China and India are expanding and diversifying their programs, which also facilitate more co-operation with other countries.

UN's upcoming High-level Events on SDGs

Five high level meetings are to be held during the 74th session of the United Nations General Assembly (UNGA-74) starting on 24 September 2019. It includes meetings on Universal Health Coverage (UHC) and the UN Secretary-General's Climate Action Summit (23 September); the SDG Summit, or the UN High-level Political Forum on Sustainable Development (HLPF) (24-25 September); the High-level Dialogue on Financing for Development (26 September); and the High-level Midterm Review of the SAMOA Pathway (27 September). The five meetings are deeply interconnected and seek to generate ambitious SDG action that leaves no one behind. The UN has called on all governments and stakeholders to come to each of the high-level week meetings with strong acceleration commitments that are credible, actionable and transformative.

Call for action on air pollution by the five National academies

Five National Academies of Science and Medicine from Germany, Brazil and South Africa, and the United States have urged the world to adopt concrete measures to tackle air pollution and prevent the millions of deaths caused by it each year. They have called for a global pact to adopt pollution-curbing policies and technologies. The academies will present a declaration at the UN Climate Summit in New York in September, urging all countries to implement industrial emissions controls and air monitoring systems.

Sustainable Development Report 2019 published

The recently published Sustainable Development Report 2019 details the progress by countries on their achievement of the Sustainable Development Goals (SDGs). The report says that the worst performance is on SDG 13 (Climate Action), SDG 14 (Life Below Water), and SDG 15 (Life on Land). No country has managed to obtain a "green rating" (the report's indicator for the achievement of an SDG) on SDG 14 (Life Below Water).

New manufacturing process for aluminum alloys

An advanced manufacturing process to produce nano structured rods and tubes directly from high-performance aluminium alloy powder, in a single step was recently demonstrated by researchers from the Pacific Northwest National Laboratory. Using a novel Solid Phase Processing approach, they eliminated several steps that are required during conventional extrusion processing of aluminium alloy powders, besides achieving a significant increase in product ductility. High-performance aluminium alloys made from powder are used for specialised aerospace applications for making lightweight components.

Smart Phone App to program robots for routine work

Purdue University researchers led by Dr Kartik Ramani, have developed a prototype smartphone app called VRa, that allows a user to easily program any robot to perform a mundane activity, such as picking up parts from one area and delivering them to another, watering plants, etc. The app uses artificial intelligence and augmented reality and has the potential of dramatically bringing down the costs of building and programming mobile robots.

Topical cream shows promise in treatment of vitiligo

A nationwide phase II clinical trial, coordinated out of Tufts Medical Center in Boston, has found that a topical cream was extremely effective in reversing the effects of vitiligo, a relatively common auto-immune disease that causes loss of skin pigmentation. Topical application of the medicated cream, ruxolitinib, which is currently used as an oral treatment for certain blood disorders, resulted in substantial improvement of facial vitiligo symptoms in

nearly half of the trial's participants. The researchers hope that this treatment ultimately will be a game-changer for the millions of people worldwide affected by vitiligo.

INDIA

Collaboration on Space Exploration between India and Tunisia

Tunisia and India signed a Memorandum of Understanding on cooperation in the exploration and peaceful uses of outer space. The MoU will provide a policy framework for both nations to work together closely on joint research, technology and knowledge exchanges, and capacity development. This new promising area of cooperation and partnership between Tunisia and India is part of the 'Road Map for Tunisian India future partnership' signed in October 2017 in Delhi, will include significant activities related to remote sensing of the earth, satellite meteorology; satellite-based navigation, space science and planetary exploration; use of spacecraft and space systems as well as practical application of space technology. Tunisia adds to a growing list of India's allies on space exploration in Africa. In September 2018, India entered into similar bilateral agreements with Algeria, Morocco and the island of Sao Tome and Principe.

India and Japan to establish funds for Indian Start-ups

India and Japan are jointly launching a \$187 million (Rs 1,298 crore) Startup fund-of-funds (FoF) to invest in over 100 technology startups in India with focus on the fields of Internet of Things (IoT) and Artificial Intelligence. The fund is an outcome of a deal between Japan and India sealed in October last year. \$150 million will be raised from Japanese investors for the upcoming FoF called "Indo-Japan Emerging Technology & Innovation AIF" while the remaining will be raised from Indian investors. The Fund aims to invest in more than 200 Indian companies focussed on emerging areas such as Internet of Things (IoT), Artificial Intelligence (AI), Machine Learning (ML), fintech, healthcare, consumer, education, robotics, automation and business-to-business (B2B) software.

IISc ranked as world's second-best research institute

Indian Institute of Science (IISc) Bangalore was ranked second in the QS University Rankings, globally for its research facilities. Last year, the institute was ranked sixth among the top performing Indian universities. The other Indian institutions that featured in the top 500 universities included IIT Bombay, IIT Delhi, IISc Bangalore, IIT Madras, IIT Kharagpur, IIT Kanpur, IIT Roorkee, University of Delhi and IIT Guwahati. The rankings are based on six parameters — international student and faculty ratio, academic and employer reputation, and citations.

IIT-B develops biodegradable screws for fixing bone injuries

IIT Bombay researchers have developed India's first biodegradable bone screw. The screw is made of a polymer-based biomaterial which contains Magnesium Oxide nanoparticles and silk fibres, and its mechanical strength can be tuned to match the target tissue. As tested in rodents, the screw decomposes reasonably fast and is completely compatible inside the body. While biodegradable polymer-based screws made of Poly Lactic Acid (PLLA) are used commonly these days, Indian companies don't yet possess the license to manufacture them. Hence, they need to be imported, which adds to treatment costs, often making them unaffordable. The current study, which uses polycaprolactone instead of PLLA as the main component, addresses this problem. This work has received the HTAC-ICMR Business Development Award from the Indian Council of Medical Research (ICMR) and FICCI in

collaboration with IC2 Institute Business Incubator, University of Texas at Austin, USA, amongst other prestigious awards.

GSK supports Doctoral Program at RCB, Faridabad

Pharmaceutical company GlaxoSmithKline (GSK) will fund doctoral programs in Bioinformatics and Biostatistics for the next 5 years at the Regional Centre for Biotechnology (RCB). The program is called 'Trust in Science' and will support 5 candidates, starting from this year. GSK will put in an "initial amount" of £600,000 to fund the PhD courses. The program's aim is to build indigenous research capacity in these fields.

Indian engineer wins the prestigious Commonwealth Innovation for Sustainable Development Award

Bangalore based engineer, Nitesh Kumar Jangir have developed "Saans" which is a breathing support device to tackle avoidable deaths of premature babies from respiratory distress syndrome due to a lack of immediate access to complex medical equipment. In countries like India, with erratic electricity supply and limited resources at public hospitals, this neonatal breathing support equipment can be used without any complex training. This low-cost breathing device has won the 2019 Commonwealth Secretary-General's Innovation for Sustainable Development Award in London.

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