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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 scientific 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

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GLOBAL

[Heart Muscle Cells Repaired and Regenerated](#)

Researchers at the University of Houston are reporting a new technology that not only repairs heart muscle cells in mice but also regenerates them following a heart attack, or myocardial infarction. The new technology developed uses synthetic messenger ribonucleic acid (mRNA) to deliver mutated transcription factors - proteins that control the conversion of DNA into RNA - to mouse hearts. Two mutated transcription factors, StemIn and YAP5SA, work in tandem to increase the replication of cardiomyocytes, or heart muscle cells, isolated from mouse hearts. StemIn turns on stem cell-like properties from cardiomyocytes. YAP5SA works by promoting organ growth that causes the myocytes to replicate even more. The team found that StemIn and YAP5SA repaired damaged mouse hearts in vivo. Notably, myocyte nuclei replicated at least 15-fold in 24 hours following heart injections that delivered those transcription factors. When both transcription factors were injected into infarcted adult mouse hearts, cardiac myocytes multiplied quickly within a day, while hearts over the next month were repaired to near normal cardiac pumping function with little scarring. An added benefit of using synthetic mRNA is that it disappears in a few days as opposed to viral delivery.

[Nanofluidic Scattering Microscopy Technique developed](#)

Researchers at Chalmers University of Technology presented a microscopy technique that allows proteins, DNA and other tiny biological particles to be studied in their natural state in a completely new way. To develop new drugs and vaccines, detailed knowledge about nature's smallest biological building blocks - the biomolecules - is required. It is therefore crucial to be able to streamline the work by studying how, for example, individual proteins behave and interact with one another. The nanofluidic scattering microscopy method can enable the most promising candidates to be found at an earlier stage. The technique also has the potential for use in conducting research into the way cells communicate with one another by secreting molecules and other biological nanoparticles. These processes play an important role in our immune response, for example.

[Water Harvesting Gel Works at Low Humidity Levels](#)

Researchers at the University of Texas at Austin have designed a sustainable polymer gel that can harvest large quantities of water from the surrounding air, even in low-humidity conditions. The low-cost material combines konjac gum (KGM) – a plant-based fibre widely used in Asian cuisine — and hydroxypropyl cellulose (HPC) and a uniformly-dispersed solution of lithium chloride – a moisture-retaining salt. KGM has a large water-collecting surface area, while also allowing water vapour to rapidly pass through the structure when heated moisture in the KGM fibres is rapidly released. Tests have shown that in 14–24 cycles of water uptake and release in arid conditions, 1 kg of the gel can produce more than

6 l of water per day in 15 percent relative humidity. At 30 percent relative humidity, up to 13 l per day can be produced. The researchers also showed that the polymer can be easily produced through a user-friendly casting method. The material's three ingredients cost just \$2 per kilogram. The low cost and simplicity of production will enable gel to be made commercially. Far larger quantities of water could be readily harvested by fabricating thicker films and introducing absorbent beds to the gel.

Promising Material for 6G Technology Discovered

Scientists from Osaka Metropolitan University and their colleagues have detected an unprecedented collective resonance at high frequencies in a magnetic superstructure called a chiral spin soliton lattice (CSL), revealing CSL-hosting chiral helimagnets as a promising material for 6G technology. Future communication technologies require expanding the frequency band from the current few gigahertz (GHz) to over 100 GHz. Such high frequencies are not yet possible, given that existing magnetic materials used in communication equipment can only resonate and absorb microwaves up to approximately 70 GHz with a practical-strength magnetic field. Seeking the CSL phonon mode, the team experimented on CrNb₃S₆, a typical chiral magnetic crystal that hosts CSL. They first generated CSL in CrNb₃S₆ and then observed its resonance behavior under changing external magnetic field strengths. A specially designed microwave circuit was used to detect the magnetic resonance signals.

Novel Synthetic Polymers Could Lead to Greater Crop Yield

Scientists at the University of Birmingham have invented a new method to encourage bacteria to form growth-promoting ecosystems that could be used to coat the roots of plant seedlings, which is expected to result in stronger, healthier plants, and higher crop yields in agriculture. These new polymers were designed to act as an adhesive scaffold, 'seeding' the formation of a microorganism-polymer complex to initiate and expedite biofilm formation. Once the biofilm is formed, the bacteria become a self-sufficient and self-organizing community, and produce their own matrix to allow the transmission of nutrients and water, and the discharge of waste products. The University of Birmingham Enterprise has filed a broad-based patent application covering the novel polymers, the method of forming the biofilm and the method of polymer cleaving, and its use to promote growth of a biofilm with any microorganism including those that can produce or deliver chemical or biological molecules. The patent has now been licensed to specialist life science company PBL Technology.

Wearable Anti-Microbial Copper Nanomesh Developed

A team of researchers from the University of Tokyo, the Korea Research Institute of Bioscience and Biotechnology and the Center for Emergent Matter Science & Thin-Film Device Laboratory RIKEN 2-1 Hirosawa has developed a wearable antimicrobial nanomesh material that sticks to human skin, killing microbes nearly instantly. The researchers took a new approach to using copper to fight infections: making it nearly invisible. Copper is heavy and can be ungainly when used as an antimicrobial material. To make it easier to use, the

researchers created tiny copper strands and spun them together randomly, creating a mesh. They then applied pressure to flatten the mesh. At three microns thick, the result is so thin that it cannot be seen by the human eye or felt when touched. But it is bendable and stretchy, which means it can be used in a variety of ways to kill viruses and bacteria. One of the main applications the researchers foresee for their nanomesh is as a surface cover for smartphones and tablets. Testing has shown that the nanomesh does not affect the performance of such devices. The goal would be to apply the mesh to surfaces that serve as bacteria and virus transfer sites, for example, doorknobs, light switches and the inside of materials used to create clothes. One possibility, a coated glove so thin the user is unaware of its presence, could perhaps provide the best protection of all, since so many microbes are transferred via the hands.

[New Therapeutic Agent to Treat Cancer](#)

Researchers at the Instituto de Medicina Molecular João Lobo Antunes (iMM; Portugal), University of Cambridge (Cambridge, UK), and Center for Cooperative Research in Biosciences (Derio, Spain), developed a new chemistry on natural compounds derived from Brazilian lapacho tree bark to obtain a therapeutic agent that could be efficient to treat acute myeloid leukaemia. β -lapachone is a promising drug to treat leukaemia, but its reactive properties could have undesirable effects. Besides the therapeutic interest of this approach for the treatment of acute myeloid leukaemia, the chemistry that was developed in this study can be used for other valuable natural compounds, enabling the use of compounds with therapeutic potential that were previously inappropriate for medicinal use.

COVID-19

COVID-19 (WORLD)

[Vaccines Not Effective Against Newer Coronavirus Omicron Sub-variants](#)

A study in the New England Journal of Medicine found that the more recent Omicron sub-variants of SARS-CoV-2 significantly evade neutralising antibodies produced by both vaccination and prior infection. The Beth Israel Deaconess Medical Center (BIDMC) in Israel researchers examined the antibody response to various SARS-CoV-2 Omicron sub-variants in 27 people who had had vaccinations and booster shots as well as 27 people who had previously contracted COVID-19. Since the initial highly infectious SARS-CoV-2 Omicron variant - known as BA.1 - of COVID-19 emerged in 2021, its new sub-variants continue to evolve. The three Omicron subvariants BA.2.12.1, BA.4, and BA.5 were discovered to significantly evade neutralising antibodies produced by both vaccination and prior infection. Neutralizing antibody responses to BA.4 and BA.5 were three times lower than those to the Omicron BA.1 and BA.2 variants and were roughly 20 times lower than those to the original WA1/2020 strain. This has important public health implications. The researchers stated that new variants may be more contagious and may overcome the immune defences from earlier infections or vaccinations more successfully.

[COVID-19 Vaccine for Children Under 5](#)

The U.S. Food and Drug Administration on Friday authorized two COVID-19 vaccines for children aged 5 and under, opening the door for vaccinating millions of the youngest American children. The agency authorized Pfizer-BioNTech's (PFE.N), vaccine for children aged 6 months to 4 years, and Moderna Inc's (MRNA.O) shot for those 6 months to 17 years. The Pfizer vaccine is already authorized for use in children and teens over the age of 5. While many American parents are eager to vaccinate their children, its unclear how strong the demand will be for the shots. The Pfizer/BioNTech vaccine was authorized for children ages 5 to 11 in October, but only about 29 percent of that group is fully vaccinated, according to federal data.

COVID-19 (INDIA)

India's First mRNA COVID-19 Vaccine Likely to be Available Soon

India's first mRNA COVID-19 vaccine is likely to be available soon as the Subject Expert Committee (SEC) recommended Emergency Use Authorisation (EUA) for the same. The Drugs controller general of India (DCGI) has given Emergency Use Authorisation to Gennova's mRNA vaccine. The SEC found data submitted by Gennova Biopharmaceuticals satisfactory. The company submitted data in April and provided additional data in May. Product development using innovative technologies like mRNA, a fourth-generation vaccine platform stable at 2 to 8 degrees Celsius, is a challenging task. The company has conducted phase 2 and phase 3 data trials on 4000 participants to evaluate vaccine safety, immunogenicity and tolerability. The vaccine - GEMCOVAC-19 - is the country's first homegrown mRNA COVID- 19 vaccine and is seen as a game-changer for the healthcare industry.

Covovax for Use Among Children Aged Between 7 and 11 in India

25/6/22

A subject expert committee of India's drug regulator has recommended granting emergency use authorisation to the coronavirus vaccine Covovax for children aged between 7 years and 11 years. The recommendation has been sent to the Drugs Controller General of India for final approval.If approved, Corbevax would be the third vaccine available in India for children under the age of 12. In April, the drug regulator had cleared the use of Covaxin for children aged between 6 and 12, Corbevax for the 5-12 age group. The ZyCoV-D vaccine has been given approval for children above the age of 12. Covovax is the Indian version of US drug manufacturer Novavax's recombinant nanoparticle protein-based Covid-19 vaccine. Novavax had granted a licence to the Serum Institute of India to produce the vaccine, and the Indian company began manufacturing it on June 25 last year. Covovax is a two-dose vaccine and can be stored at refrigerated temperatures of 2 degrees Celsius to 8 degrees Celsius. It showed an overall efficacy of 90.4% in phase three trials for adults. The vaccine was approved for use in India on adults on December 28. The World Health Organization granted emergency use approval to Covovax on December 17.

Newly Developed Ultrathin Heteroprotein Film

Scientists from the Institute of Advanced Study in Science and Technology (IASST), Guwahati have successfully developed ultrathin monolayer protein films consisting of two globular proteins: bovine serum albumin (BSA) and lysozyme (Lys). They used the technique called using Langmuir-Blodgett (LB) technique which gives the films thickness in the order of nanometer. The complex formation between the two proteins occurred at a unique pH of 9.2 as a result of an electrostatic attraction along with hydrophobic interactions. Films of such protein complex of BSA and Lys can be useful for fabricating highly stable biodegradable thin films of different protein complexes for expanding its applications in the area of thin-film technology. Changing the conditions or use of different compounds into this protein complex can make the films free standing for diverse applications.

Stronger Cooperation in Meteorology and Oceanology

National Centre for Medium Range Weather Forecasting (NCMRWF), Ministry of Earth Sciences, has signed a Memorandum of Understanding (MoU) with Indian Navy, Ministry of Defence for Cooperation on Numerical Model Based Applications in Meteorology and Oceanology. This would enable sharing of expertise in the field of weather/ ocean modelling, coupled modelling, data assimilation, ensemble forecasting and satellite data use. NCMRWF would provide support to the Naval Operations Data Processing and Analysis Centre (NODPAC) and Indian Naval Meteorological Analysis Centre (INMAC) in developing advanced numerical weather prediction systems including coupled models, with increased reliability and accuracy over the Indian Ocean Region (IOR) and global regions. The MoU would benefit both NCMRWF and Indian Navy in furthering meaningful interactions and professional exchanges in future.

Improving Solid-state Lithium Batteries

Researchers from the Indian Institute of Science, Bangalore, have found that nanoscopic refractory metal layers like tungsten could improve dendrite growth tolerance in electrolytes of solid-state Li-ion batteries. This addresses a long-standing challenge of the growth of lithium dendrites which limits their practical viability. The researchers found that interfacial void growth precedes dendrite nucleation and growth. To delay void growth, the researchers experimented with an ultrathin layer of refractory metals between the lithium anode and the solid electrolyte and found that tungsten is an ideal candidate to impede lithium vacancy motion due to its low solubility for lithium. The team now intends to build on this advance to develop full solid-state cells that could enable charging in less than an hour and offer up to 1,000 or more cycles while withstanding high temperatures of 45 degrees Centigrade or higher.

Reusable, Non-Allergic N95 Mask with Nanoparticle Coating

Researchers from Amity University, Haryana, with collaboration with the University of Nebraska, USA, have developed an anti-microbial N95 mask using 3D printing technology. The mask has four-layers - the outer and first layer of the filter is coated with nanoparticles. The second layer is a high-efficiency particulate absorbing (HEPA) filter, third layer is a 100 µm filter and fourth layer is moisture absorbent filter. It is reusable, recyclable, washable, odourless and non-allergic. The outer layer is made of silicon and the mask has a shelf life of more than 5 years, depending upon the use. The mask can prevent infections like Covid-19, and can also be used by workers in different industries where they are exposed to high volumes of dust — cement factory, brick kilns, cotton factories for example. It can be modified as per requirement by changing the filter configuration according to the place where it will be used. The mask can help prevent severe lung diseases such as silicosis. A trademark and a patent have also been filed for the mask, called Nano Breath.

[Space Start-ups Authorised to Launch Payloads](#)

The Indian Space Promotion and Authorisation Centre (IN-SPACe) has authorised two private firms to launch their payloads marking the beginning of private space sector launches in India. Dhruva Space, Bengaluru is launching Dhruva Space Satellite Orbital Deployer (DSOD 1U), a technology demonstration payload. Digantara Space, Hyderabad, is launching ROBust Integrating Proton Fluence Meter (ROBI), a Proton dosimeter payload. The payloads would fly onboard PSLV Orbital Experimental Module (POEM) of PSLV-C53 scheduled to be launched on June 30.

IN BRIEF

[3D Printing Method to Make Robotic Materials](#)

A team of UCLA engineers and their colleagues have developed a new design strategy and 3D printing technique to build robots in one single step. The breakthrough enabled the entire mechanical and electronic systems needed to operate a robot to be manufactured by a new type of 3D printing process for engineered active materials with multiple functions (also known as metamaterials). Once 3D printed, a "meta-bot" will be capable of propulsion, movement, sensing and decision-making. The printed metamaterials consist of an internal network of sensory, moving and structural elements and can move by themselves following programmed commands. The key in the method is the design and printing of piezoelectric metamaterials. The team also presented a methodology to design these robotic materials so users could make their own models and print the materials into a robot directly. Using the technique, the team built and demonstrated three "meta-bots" with different capabilities. One robot can navigate around S-shaped corners and randomly placed obstacles, another can escape in response to a contact impact, while the third robot could walk over rough terrain and even make small jumps.

[Snake Venom Hydrogel that Rapidly Stops Uncontrolled Bleeding](#)

University of Queensland researchers have developed a rapid wound sealant composed of two snake venom proteins: ecarin and textilinin. Ecarin promotes the formation of a fibrin blood clot. Once the clot is formed, Textilinin inhibits the action of plasmin, stabilizing the fibrin blood clot. 40 percent of trauma-related deaths are the result of uncontrolled bleeding, and this figure is much higher for active military personnel in a combat zone. This even includes people with hemophilia and those using blood thinners. The snake venom hydrogel remains a liquid when stored in a cool place but solidifies at body temperature to seal the wound. This gel could accelerate the wound-healing processes needed for clotting and reducing blood flow, ultimately boosting the body's capacity to heal large wounds.

19 Percent Efficient Flexible Perovskite Solar Panels Developed

Researchers at France's National Solar Energy Institute (INES) have developed new flexible perovskite solar modules, with an area of 11.6 square centimeters, with a maximum power conversion efficiency of 18.95 percent and a stabilized efficiency of more than 18.5 percent a new record. To obtain this yield on larger surfaces, INES developed the flexible perovskite solar modules at low temperature on low-cost substrates made of polyethylene terephthalate (PET). They used a very simple structure featuring five layers, including the electrodes. In tests, a stability of several hundred hours has been obtained – between 400 and 800 hours, depending on encapsulation – based on a standard objective of 1,000 hours. The devices will be integrated into a demonstrator for building-integrated photovoltaic (BIPV) applications. The modules will be interconnected to obtain high voltages and will be tested according to building standards. In addition, stability tests in real conditions are currently being carried out.

CAPSTONE Spacecraft Launched Successfully

28/6/22

<https://scitechdaily.com/nasa-capstone-launches-successfully-will-test-new-lunar-orbit-for-artemis-moon-missions/>

The Cislunar Autonomous Positioning System Technology Operations and Navigation Experiment, or CAPSTONE microwave oven sized 25 kg Cubesat spacecraft has been launched enroute toward an orbit intended in the future for Gateway, a lunar space station under NASA's Artemis program. CAPSTONE will take the spacecraft approximately four months to reach its targeted lunar orbit. At the Moon, CAPSTONE will enter an elongated orbit called a near rectilinear halo orbit, or NRHO. Once in the NRHO, CAPSTONE will fly within 1,600 kms of the Moon's North Pole on its near pass and 70,000 kms from the South Pole at its farthest. During its mission, CAPSTONE will provide data about operating in an NRHO and showcase key technologies.

RESOURCES & EVENTS

Public Consultation on Draft National Data Governance Framework Policy

A stakeholder interaction on the Draft National Data Governance Framework Policy was held on 14th June 2022. Over 250 stakeholders from industry, start-ups, academia, think

tanks, international alliances & government officials from various ministries participated. Minister of State, Shri Rajeev Chandrasekhar, highlighted the rapid digitalization of the government and citizens, within India, and the subsequent rise in data volumes necessitating a framework for harnessing the potential of this data. He stated that the Government's vision is to build a modern framework for Data Governance that will be kinetic enabler of India's Digital Economy. NDGFP aims at standardising Government's Data collection and management while catalysing AI and Data led research and startup ecosystem, he added. The draft policy and the sound foundation upon which it is built will focus on improving the institutional framework for government data sharing, promoting principles around privacy and security by design, encouraging the use of anonymization tools and ensuring equitable access to non-personal data for both the public and private sector.

India at the WTO 12th Ministerial Conference

Union Minister Shri Piyush Goyal who led the Indian delegation at the WTO 12th Ministerial Conference in Geneva called MC12 an “outcome oriented” success. India has been 100 percent successful in portraying before the world the priority issues for India and the developing world. Shri Goyal said India took the lead and turned the tide of negotiations from full failure, gloom & doom to optimism, enthusiasm and consensus based decision. On fisheries, there would be a check on illegal unreported and unregulated fishing in our waters and elsewhere. There would be very strict controls on overfished areas so that fish stocks are restored. Additionally, no subsidies are to be provided for fishing in areas outside EEZ or RFMOs. The TRIPS decision will boost export, vaccine equity, accessibility & affordability. A country can authorize production of vaccines patented elsewhere and there would be no consent required as well as there would be no limit on exports. A decision on Diagnostics/Therapeutics would be taken in 6 months. There would be faster pandemic response in future with fewer trade barriers. The agenda decided on WTO reforms will make the WTO a more efficient, agile body. The dispute settlement body will be revived and play its expected role in settling trade disputes. The reform would deliver better trade outcomes for developing countries. On e-Commerce, while agreeing to the temporary moratorium, India asked for intensifying discussions on the moratorium including on its scope, definition and impact for taking an informed decision on the same. The Food Security Declaration, focuses on making food available in developing countries while working towards increasing productivity and production. There would be no export restrictions on World Food Programme (WFP) purchases for food security in other countries.

Single Use Plastic Ban in India Strengthened

The Central Pollution Control Board (CPCB) has undertaken comprehensive measures to phase out Single Use Plastics. CPCB's Comprehensive Action Plan encompasses measures to reduce supply of raw materials, demand side measures to reduce plastic demand, enabling measures to promote alternatives to SUP, digital interventions for efficient monitoring and to create awareness, and guidance to State Boards for effective implementation of directions. The manufacture, import, stocking, distribution, sale and use of some identified single use plastic items, which have low utility and high littering potential is prohibited with effect from the 1st July, 2022. To curb the supply of the identified items, directions have been

issued at national, state and local level. As an alternative, enabling measures for promoting alternative to SUP are being actively pursued. CPCB has already issued one-time certificates to around 200 manufacturers of compostable plastic. Development of alternatives to petro based plastics is also being pursued by leading technical institutions.

[G7 Attempts R&D Diplomacy](#)

The G7 group of democracies has promised support for a range of science and technology projects across the world, hoping to win back countries swayed by decades of Chinese infrastructure largesse. At their meeting in Bavaria, G7 leaders said they would help fund everything from vaccine manufacturing in Senegal to solar grids in Angola and modular nuclear reactors in Romania. These R&D efforts are part of a broader package of infrastructure development, including health and digital projects, that G7 leaders hope will offer a more transparent and greener alternative to Beijing's Belt and Road Initiative, and which will not land recipient countries with unsustainable debts. But the \$600 billion so-called Partnership for Global Infrastructure and Investment is actually a relaunch of several previous initiatives from the US, EU and others. The partnership encompasses the EU's Global Gateway initiative, which aims to raise €300 billion by 2027 from public and private sources. The G7 countries also said they would promote academic freedom and strengthen the role of scientific evidence and research in democratic debate.

SCIENCE POLICY AND DIPLOMACY

[Bonn Climate Change Conference Reveals Deep Differences](#)

The subsidiary bodies of the UN Framework Convention on Climate Change (UNFCCC) held their 56th session in Bonn from 6-16 June 2022. Discussions focused on enhancing implementation, taking stock of progress, and reporting under the Convention and the Paris Agreement. The effort by developing countries to include loss and damage finance facility, on the formal agenda was opposed by wealthier parties such as the EU and the US. No significant progress was made on the Santiago Network, for technical assistance on loss and damage. However, on the global goal on adaptation (GGA), developing countries managed to get it included in the formal agenda of the talks. On the work programme for more ambitious targets for emissions reduction the Like Minded-Group of Developing Countries (LMDC), strongly opposed a US move to put more responsibility on large emitters for cutting greenhouse gases before 2030. They argued that historical responsibility for climate change could not be ignored. The difficult but crucial issue of climate finance was only discussed in a technical expert dialogue. While in theory the focus of climate negotiations has shifted to implementation, many of the outcomes from the Bonn meeting were restricted to procedural matters rather than concrete actions. With loss and damage finance still not added to the formal agenda, but clearly established as a priority issue for developing countries, it is likely to re-emerge during the opening plenary of COP27.

[International Action to Deal with E-waste and Hazardous Chemicals](#)

Meetings of the Conferences of the Parties (COPs) to Basel, Rotterdam and Stockholm (BRS) Conventions convened to strengthen and expand efforts to reduce hazardous wastes,

eliminate persistent organic pollutants (POPs), and control trade and illegal trafficking of toxic chemicals and wastes. The 15th meeting of the COP to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (BC COP 15) adopted 22 decisions, including an agreement to amend the Convention to make all electronic and electrical waste subject to the prior informed consent (PIC) procedure. The tenth meeting of the COP to the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (RC COP 10) adopted seven decisions, including to list two of the seven chemicals proposed by its Chemical Review Committee (CRC). The tenth meeting of the COP to the Stockholm Convention on POPs (SC COP 10) adopted 13 decisions, including to ban, without exceptions, the production and use of perfluorohexane sulfonic acid (PFHxS), its salts, and related compounds. The industrial chemical has been used in stain-resistant fabrics, firefighting foams, grease-resistant food packaging, and non-stick cookware. PFHxS is a highly persistent substance linked to cancer, thyroid problems, and infertility, and affect the nervous system. COP 10 also adopted decisions on PCB and DDT. The three Conventions also took joint decisions, including on strengthening efforts to combat illegal trafficking and trade of hazardous chemicals and wastes. From 8-10 June, the BRS COPs hosted the Plastics Forum – a multi-stakeholder event dedicated to promoting the environmentally sound management of plastic waste.

Global Biodiversity Framework Talks End with Little Progress

The six-day meeting of the open-ended working group on the Post-2020 Global Biodiversity Framework held in Nairobi from 21-26 June failed to achieve much progress. The objective of the meeting was to reach a consensus on the text of the framework, which is to be finalised at the 15th Conference of the Parties (CoP15) to the Convention on Biological Diversity (CBD) in December. Agreement could be reached on the text of only two of the targets. One of the targets (19.2) is on strengthening capacity-building and development, along with access to and transfer of technology. The other one (12) aims to increase the area of, access to and benefits from green and blue spaces, for human health and well-being in urban areas and other densely populated areas. Over the six days, the negotiators worked on the text prepared by the CBD secretariat in Geneva in March this year. An additional meeting has now been proposed just before the CoP15 in Montreal in December to provide another opportunity for the negotiators to agree on the text. However, this is subject to availability of funds. At Nairobi, the negotiators went through each of the four goals and 23 proposed targets. They also deliberated on the issue of Digital Sequence Information, a separate agenda item related to the framework crucial for ensuring access and benefit sharing (ABS). Consensus could not be reached due to disagreements over references to: Biological resources; derivatives; environmentally sound uses; sharing benefits from genetic resources “in any form, including digital sequence information”; international ABS instruments and obligations. Also pending agreement is the decision to establish a global multilateral benefit-sharing mechanism by 2025.

[RIS and GSEJ Invite Papers for Science Diplomacy Review Special Issue](#)

The Science Diplomacy Review (SDR) is a peer-reviewed and open access journal published by the Forum for Indian Science Diplomacy (FISD) based at Research and Information System for Developing Countries (RIS), an autonomous independent policy research think tank with India's Ministry of External Affairs. SDR's special issue titled '*New Dimensions of Science Diplomacy for the Twenty-First Century*' will be published in collaboration between RIS and the Centre for Global Science and Epistemic Justice (GSEJ) at the University of Kent, UK. We invite contributions that unpack the idea of 'science diplomacy' through examinations on past and emerging experiences. Authors may submit full length research articles (4,000-5,000 words) as well as shorter articles and commentaries (1,500-3,000 words). Papers that focus on non-state actors and/or from the Global South perspectives, and papers with novel research methods are particularly welcome. The last date for submission of the full paper is 2 August 2022. The details are available at <http://fisd.in>.

We welcome your comments and valuable suggestions. Please write to us for receiving publications, updates and notices regarding seminars, conferences etc.

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