

India Water Foundation

Reduce
Reuse
Recycle
Refuse
Rethink
Regenerate

Catalyze
Catalyze
Capitalize
Capitalize
Collectivize
Collectivize
the Momentous SDGs

CHRONICLE: 1
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President: Dr. Arvind Kumar



**NO ONE
LEFT BEHIND**



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Editorial

Ambitious, Assertive & Aspiring SDGs: Are these enough?

By Dr. Arvind Kumar, President, India Water Foundation

“The ambitious and all-inclusive nature of these goals envisages a golden opportunity for all countries to ensure that ‘No One is Left Behind’ in enjoying the fruits of prosperity, equitable growth and a secure planet bereft of the vagaries of climate change. Then why does the opportunistic SDGs reflect a worrisome trend”



Almost four years have elapsed since the adoption of 17 Sustainable Development Goals along with their targets and only a decade is left for realizing these goals. Given the slow pace of development in integrating these goals into the national policies, especially in developing countries, including India, it is worrisome.



Many hurdles like lack of strong political will, resource crunch and unaffordable technology are deemed as major stumbling blocks in accelerating pace towards realizing the SDGs. The 2018 Synthesis Report on SDG-6 relating to water and sanitation did not present a satisfactory state of affairs. Certain goals have carved out 2020 as deadline in attaining some satisfactory levels of these goals and the prospects seem dim in that regard.

In the absence of authentic data synchronized under one umbrella, it is cumbersome to comprehend as to what extent the number of countries has integrated the SDGs along with objectives of the Paris Agreement on Climate Change (PACC) have successfully integrated these into their national policies. Even periodic submissions of Intended Nationally Determined Contributions (INDCs) by the countries is not keeping the required timeframe.

These SDGs are designed to benefit the entire humankind inhabiting the Planet Earth because the adverse impacts arising out of natural hazards or emanating from environment-induced or water-induced vagaries usually transcend geographical boundaries and affect a major chunk of humanity. At a time when these SDGs are modeled and designed to address these vagaries in an interrelated and interconnected manner, their implantation also calls for well-concerted collective efforts. Apathy of some developed countries in making available required funds and technology to the developing countries is required to be addressed immediately.

Once resilience to water-induced calamities and environment-induced vagaries is enhanced, attainment of other goals will be easier because both water and climate change are at the roots of bulk of the calamities.

Besides, the leadership in developing countries is also called upon to speed up the task of integrating these SDGs into their respective national policies and there exists prior need to foster South-South cooperation, especially in SDG-6 and SDG-13. Once resilience to water-induced calamities and environment-induced vagaries is enhanced, attainment of other goals will be easier because both water and climate change are at the roots of bulk of the calamities.

Undoubtedly, annual ritual of negotiations on water and climate change is facilitated under the aegis of the UN bodies like UNEP, UNFCCC and other similar bodies, which have recommendatory powers and not mandatory powers and this fails to hold any country accountable for not implanting the requisite recommendations.

The developing countries of Asia, Africa, and Latin America should join hands in mobilizing international opinion through the forum of the UN General Assembly to include Water and Climate Change in the mandate of the UN Security Council like international peace and security because these two interdependent and interconnected sectors are key to maintenance of international peace and security.

<https://ki.se/en/phs/global-agenda-and-the-sdgs-global-health-tools>

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Feature

Gauging the ascending footprints of World Water Council

By Shweta Tyagi, Chief Functionary, India Water Foundation

“WATER IS POLITICS” were the words of President Loic Fauchon speaking at the 68th Board of Governors in Beirut on 8 April 2019 held under the auspices of the Lebanese Government. This reflected WWC’S MARATHON TO MOBILIZE POLITICAL WILL and bolster the recognition of water as a global priority and catalyze action in tackling the urgency of preserving the resource”.

The World Water Council is an international multi-stakeholder organization that aims to promote awareness, build political commitment and trigger action on critical water issues at all levels, including the highest decision making level, to facilitate the efficient conservation, protection, development, planning, management and use of water in all its dimensions on an environmentally sustainable basis for the benefit of all life on earth. The Council focuses on the political dimensions of water security, adaptation and sustainability.

On the eve of COP24, and at the outcome of the 8th General Assembly held on 1st December 2018, the Board of Governors has unanimously elected Loic Fauchon as President of the World Water Council. The new President thanked the members for electing him and congratulated the previous Board and its President, Benedito Braga, for the important advances made on water security during his time in office. World Water Council announced its new Board of Governors, to oversee and guide the Council’s work for the forthcoming three years. The elections took place during the triennial General Assembly for which over 250 participants from 35 countries gathered in Marseille, France.

Dr. Arvind Kumar, President, India Water Foundation a non-profit civil society and think-tank was elected from the entire South Asia region on the Board of Governors of World Water Council for the year 2019-2021. In the coming years, he shall witness the opportunity to oversee the implementation of the Council’s triennial strategy, building further on the work achieved over the previous three years. The new strategy shall emphasize on water security, sustainability and resilience, while seeking ways to strengthen relationships between Council members. The Board will also support Council’s preparation of the 9th edition of the World Water Forum to be held in Senegal in 2021.



The World Water Council brings together a diversity of organizations mobilized to advance the water cause by involving UN agencies, the World Bank, governments, NGOs, public and private companies, and universities. Through their experience and know-how, the Council’s main mission is to provide practical responses to the global water crisis.

Celebrating World Water Day on 22nd March 2019, WWC engaged in multiple outreach activities to ensure that the Council's main messages were broadly heard throughout the annual celebrations with a solid media presence and strong visibility. Participation through awareness-raising efforts were envisaged drawing attention to this year's UN theme 'Leave no-one behind' and catalyzes worldwide attention towards the importance of preserving and securing water.

About the World Water Forum

The World Water Forum is the world's largest event on water. Organized every three years with a host country, the Forum provides a unique platform where the water community and key decision makers can collaborate and make long-term progress on global water challenges. The Forum brings together participants from all levels and areas, including politics, multilateral institutions, academia, civil society and the private sector, among others. The **8th edition of the Forum was held in 2018 in Brazil** and gathered more than 10,000 participants under the theme "**Sharing Water**". The next edition will take place **in Dakar, Senegal, in March 2021** to underline a new strategy to respond to global water crises.

What should the 9th World Water Forum galvanize?

- ✓ Water is the new OIL. Issues of Water Wars, Water Insecurity, Water Stress and Water Quality must be accorded the top-most priority
- ✓ *Availability, Accessibility & Affordability of water should be set norm for the future leaders to deliberate. If we fail to manage the availability, the other two dependent components gets excluded from development agenda.*
- ✓ Facilitate building local capacities for community entrepreneurship in an atmosphere of transparency, participation and accountability
- ✓ Go back to the roots by adopting 'Nature Based solutions' to sustain the traditional wisdom and uphold the best conventional cultural practices.
- ✓ Facing an unprecedented water-stressed crisis, inclusive water governance ought to be made mandatory in every sector, including management of rivers, groundwater, floods, and biodiversity, among others
- ✓ Discussing the prospects of Smart Water Management by incorporating the principles of 6Rs of Circular approach i.e. Reduce, Reuse, Recycle, Respect, Replenish and Refuse

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Cover Story

‘Seven Aspirational Districts, Six Aspirations, One Future’

By IWF Bureau

“From periphery to mainstream, having covered wide range of districts from Chitrakoot, Fatehpur, Haridwar, Balrampur, Siddharthanagar, Shravasti and Bahraich in the states of Uttar Pradesh & Uttarakhand, the entire experience deciphered understanding the real meaning of ‘Aspirational Districts’. The districts represented important spiritual & cultural hotspots but remain relatively backward in development. But being less developed, it also signified that these districts have immense potential to bring Mainstream & Balanced development through ‘participatory governance’ and serve as an inspiration for other districts to tailor a similar model”.

Realizing this, India Water Foundation felt the need to raise awareness of the people to bring about ‘development from below’. Acknowledging the idea of ‘Learn Global and Act Local and vice-versa’ and upholding the principles of Solve Different, we realised this concept through Eco Routes: Eco and WASH dialogues for Eco intelligent rural rejuvenation field capacity enhancement’ a project supported by NCSTC department, Ministry of Science and Technology in aspiring districts. Taking a bird’s eye view, we took cognizance of the noble issues viz 6 key indicators of Education, Health & Nutrition, Basic Infrastructure, Agriculture & Water Resources, Skill Development and Financial Inclusion.



The problems were manifold, multiple challenges but the aspirations of these districts were held high such that no obstacles could deter to inhibit the aspirations. Acknowledging the same, IWF while ‘taking science at ground zero’ made an effort to raise the scientific awareness and temper, capacity building of the people, disseminating good practices on health, education and hygiene. The women community of Chitrakoot for instance, during our MHM (Menstrual Hygiene Management) session faced the biggest challenge of deeply-rooted socio-cultural taboos surrounding menstruation. Many were unaware of nutritional component while many never heard about reproductive tract infections (RTI). IWF, through vociferous interaction, brought about behavioral change among women, attitudinal shifts in social mindset and prompting women to spread MHM learning in their community. In short, we provided training to the trainers who would take the lead forward to diffuse their experience and learning to the people of Community. IWF applauded the innovative

efforts of distinguished people in their respective work space and community by felicitating them with ‘Champions of Change’ Award. They represent the future discourse of the respective districts to chart out a roadmap based on their ambitions, successful stories, innovative grass root ideas and willingness to bring ‘Real Change from below’.

As per the problems, issues shared by the community stakeholders, experts from our end also deliberated and advised amicable solutions local, nature-based solutions and technical suggestions as well to address water scarcity, ground water depletion, interlinking health-nutrition, sustainable agriculture practices, raising entrepreneurship skills and the prospects of river rejuvenation. IWF ensured to lay a foundation stone of ‘unique yet proactive’ solutions.

We underlined that Development also has a vicious cycle, even if one of the 6 indicators is misplaced or removed, the entire cycle breaks. Hence, it becomes important to converge Development at a single platform laying its focus on fulfilling the aspirations of people to make their life better’. Also, the stakeholder consultation was preceded with activities of painting competition for school children, public consultation, school interaction and play-card activities, human-chain formation. The campaign at Ghats, Schools, marketplace, railway Station, bus Station, religious places, malls, community parks, etc was indeed educative for everyone, including us to learn & share experiences, pieces of wisdom, attempting to bring cohesive solutions, which was previously ignored largely. The essence of such campaign was that people

from diverse cultures, formed a mosaic of opinions reflected the symbolic representation of various opinions, mindset, and thoughts of the people.



We raised the mandate of Eco literacy higher ranging from scientific principles of WaSH especially among children & women, reducing plastic trash & litter and promoting water

conservation and intricately seized the golden opportunity to align the success with our ‘Eco Routes mandate. The campaign gathered an intense momentum of approvals or disapproval of many local causes and challenges. Through these powerful messages, we seized the golden opportunity to mobilize people, garner new dimensions and align our ‘Eco Routes stakeholder dialogue along the same lines. We spearheaded the idea that ‘Change is the need of the rightful need of the hour & it must come from within’. In these districts, every single individual acted as a ‘Catalyst of Change’.

Keeping Education as a key tool, we encouraged schools; teachers motivate students to think about worsening crisis of environment with specific impetus to Water and disseminate their social responsibility to children. Painting competition reflected the engagement of children in a creative environment to identify their thinking in alignment with environmental themes of Sustainable Development, Water conservation, Renewable energy, Climate change and Circular approach. It allowed complete self expression and supports their creativity and innovative ideas expressed through environmental art. We aligned our agenda & activities according to IWF mandate and engage them as equal Partners-in-Development. As a proactive civil

society, we took this opportunity to disseminate knowledge, best green practices, train and educate and capacity building initiatives in order to help students, teachers understand the significance of conserving environment and make their respective schools as the Environmental harbingers of 'FutureNext'.



Summing up our intellectual journey in the 7 Aspirational Districts, the response from the stakeholders was overwhelming and we looked forward to converge different aspirations of the district in a holistic manner. The support received from the district administration and the community was well appreciative. On the bottom line, it can be said that that people from diverse backgrounds, reflected a mosaic of opinions, thoughts, attitudes and mindset, which was interesting, engaging and a fruitful experience. As a part of our ongoing EcoRoutes mandate, we believe that true inspirations can lead the path of success and hence Aspirational Districts deserve a credit for themselves.

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Dialogue In Depth

Unplugging 3rd Forum of Ministers and Environment Authorities of the Asia Pacific through the lens of SDG 12

By IWF Bureau

“Our environment is witnessing massive stress viz water stress, food spoilage, resource wastage, increasing carbon emissions and inefficient resource management. All this shows a trend towards a grim situation. This is resulting in the decline of the world’s finest available ‘natural capital’. The current situation is grim with unforeseen future consequences. For instance, the lives of the next generation is at bleak with just 3% of fresh water left with a burgeoning population likely to cross 10 billion by 2050. This is one such example which is bound to affect every section of the society”.

The Third Forum of Ministers and Environment Authorities of the Asia Pacific took place from 24th to 25th of January 2019 in Singapore, jointly organized by Singapore’s Ministry of the Environment and Water Resources and the United Nations Environment Programme, Asia and the Pacific Office. This also served as a platform to contribute regional perspectives to UNEA-4 that was held in March 2019 in Nairobi, Kenya. It carried the theme ‘Innovative Solutions for Environmental Challenges and Sustainable Consumption and Production’.



The Major Group and Stakeholders Forum **Enabled** the delegates & stakeholders to prepare their collective views and positions on the environmental issues, **Ensure** the representation be adequate and fair and **Deliberate** on innovative solutions to those environmental challenges.

Welcoming the outcomes of the theme helped building synergies between different groups. Effective people’s participation in environmental governance while simultaneously emphasizing the need to mainstream biodiversity across sectors was the most discussed agenda. Further, Sustainable Consumption and Production plans and strategies must recognize and reflect indigenous and marginalized people’s views. Campaigns and awareness essential to change behaviors and lifestyles, catalyzing National roadmaps to address plastics and plastics waste were also stressed. An indirect reference to India’s ‘Swachh Bharat Mission’ effective in segregating and recycling waste and substitution mechanisms to replace plastics like biodegradable plastic bags or promoting organic agriculture was well acknowledged. However, Green finance was prominently stressed to support strategies for SDGs 12. This was necessitated to raise money for low carbon societies and influencing the behavior of companies to adopt more sustainable business practices.

Excerpts from Dr Arvind Kumar's intervention on 'Innovative Solutions for Environmental Challenges and Sustainable Consumption and Production (SDG 12)'

'The underlying idea of transiting towards Sustainable Production and Consumption is for instance envisaging efficient resource utilization, curb wastage of natural capital and promotion of green development. In a move towards sustaining Goal 12, we first need to understand the importance of 'Circular Approach'. It encloses the concept of 6Rs- Reuse, Recycle, Reduce, Refuse, Repair and Rethink of resources. This allows resources to self-generate (like water, clean air or energy) and move in a **sustainable way to avoid depletion**. The production and consumption pattern must be intertwined between **social, human and natural capital** to help conserve the natural resources and reverse the ill-effects of environmental degradation. With Paris Agreement being ratified and Agenda for Sustainable Development 2030 on the roll, it becomes necessary to enlighten every individual of the challenges of unsustainable and wasteful resources. While harnessing the scientific knowledge at grassroots level, it is the civil society which can serve as a proactive catalyst between the government and the people to ensure effective implementation of the environment related policies'.

"Resource Efficiency" is a broad interpretation to solve the challenges posed by sustainable consumption and production by engaging concepts of green economy integrated into national development and strategy frameworks.

India's is realizing SDG 12 by promoting resource and energy efficiency, sustainable infrastructure, and providing access to basic services, green and decent jobs and a better quality of life for all. Its implementation shall helps to achieve overall development plans and reduce future economic, environmental and social costs. India made a commitment to reduce the emissions intensity of its GDP by 20-25% from its 2005 levels by 2020 and by 33-35% by 2030. On 2 October 2016 India formally ratified the historic Paris Agreement. The National Policy on Biofuels and the National Action Plan on Climate Change (8 missions) are some of the government's flagship

schemes aimed at achieving responsible and sustainable consumption and production by the efficient use and management of natural resources.

Further, "Resource Efficiency" is a broad interpretation to solve the challenges posed by sustainable consumption and production by engaging concepts of green economy integrated into national development and strategy frameworks. Supporting developing countries need to strengthen their scientific and technological capacity moving towards more sustainable patterns of consumption and production by rationalizing inefficient fossil-fuel subsidies and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries.

It is **therefore essential to adopt a broad, trans-disciplinary perspective** among the stakeholders to bring visible impacts at the local level. With a proper sustainable policy framework to curb the excess consumption and production, we should make collaborative efforts to make a visible impact and envisage a 'Responsible Production and Consumption' for the near future. So, **'Let's take a pledge towards Zero Waste'**.

Perspective

What has the coincidence of GEO-6 and UNEA-4 has to offer on Plastics?

By IWF Bureau

Global Environment Outlook 6 from the UN Environment Programme has come as another stark warning: “The world is unsustainably extracting resources and producing unmanageable quantities of waste. The linear model of economic growth depends on the extraction of ever-higher quantities of materials, leading to chemicals flowing into air, water and land. This causes ill-health and premature mortality, and affects the quality of life, particularly for those unable to insulate themselves from these effects”.

The fourth session of the UN Environment Assembly (UNEA-4) took place from 11-15 March 2019 in Nairobi, Kenya. Under the overall theme, ‘Innovative Solutions for Environmental Challenges and Sustainable Consumption and Production,’ it was acknowledged that UNEA-4 will address:



*environmental challenges related to poverty and natural resources management, including sustainable food systems, food security and halting biodiversity loss;

*life-cycle approaches to resource efficiency, energy, chemicals and waste management; and

*innovative sustainable business development at a time of rapid technological change.

The dialogues addressed, in turn, life-cycle approaches to resource efficiency, energy, chemicals and waste management, and innovative sustainable business development at a time of rapid technological change. Reporting back to plenary in the afternoon, the dialogue moderators highlighted the need for a significant shift toward sustainable consumption and production (SCP). It is noted there is no single definition of a sustainable lifestyle, but that a collaborative effort by all stakeholders can create a chain reaction of change, “if we have the courage to make it happen.”

The Ministerial Declaration contained 26 resolutions and three decisions, addressing many global environmental issues including marine litter and microplastics, single-use plastics, sustainable nitrogen management, and the empowerment of women and girls in environmental governance. They also adopted the UNEP Programme of Work and budget for 2020-21. UNEA-4 extensively called for “Sustainable Management of Plastic Waste including Micro and Nano-Plastics through Innovative Solutions”. It highlighted the urgent need for a paradigm shift toward Sustainable Consumption and Production (SDG goal-12).

It is rightly remarked that “The menace of Plastics is not the core issue, but what to do with the plastic is the actual bone of contention”. In such a scenario, managing the menace of single-use or micro plastics is definitely an arduous task but right steps in right direction shall be rewarding in manifold ways. India has hosted World Environment Day 2018 with the vibrant theme “Beat Plastic Pollution” and the Versova beach cleanup in Mumbai. Recently, 'Plastic Waste-Free India' has been anthem has been launched in 7 languages to support India’s campaign to make India plastic-free by 2022.

Taking cognizance of the above success, it is important that we spearhead steps to phase out ‘Single Use Plastics’ and ban micro beads in products. Recognizing the prospects of Circular Approach, initiatives like recycling plastics, promotion of degradable alternatives, appropriate product redesigns to replace plastics as packaging material.

However, the most important priority must focus on appropriate waste management and remediation systems with proportionate ‘Polluter Pay Principle’ to compensate the environmental damage. Without waste management, the purpose of plastic free India gets defeated. The most important imperative towards fighting plastics lies in the assessment of plastic litter across the globe. With harmonized Monitoring, Evaluating & Reviewing methods and techniques, real time data base can be easily facilitated.

Reaffirming the principles of Eco-friendly green practices, Green Attitudes must be promoted to shift towards modern green thinking. To raise awareness globally on the significance of marine plastic litter there must be a sense of urgency to take actions by countries and associated stakeholders. The developed countries while recalling the ‘Common But Differentiated Responsibilities (CBDR) should pledge to disseminate information, technical assistance and technology transfer to the developing countries at the earliest because, the vagaries of climate change affects them first.

Stressing the importance of the protection and management of coastal ecosystems and their biodiversity in climate change mitigation and adaptation by identifying the causes of damages, improvement of the management of areas to improve environmental services and community welfare, namely environmental services and livelihood must be prime call to address the menace of plastic pollution.

Seeking a wavelength of Deeper & Practical solutions....

Finding a solution to an underlying problem is a tedious task altogether. However, prudent and practical solutions hold the key to effectively circumvent the problems and challenges to a larger possible extent.

Infrastructure is critical to achieving the 2030 Agenda. It is estimated that an additional US\$1 trillion/year will have to be invested in infrastructure to meet the Sustainable Development Goals (SDGs). Simply put, infrastructure underpins the global economy, and countries cannot achieve sustainable development without infrastructure. The notion of reduction of micro plastic pollution should stand in synchronous with the underlined Sustainable development goal 13 (Climate Action) and 14 (Life under water). A “Plastic free” charter envisaging a toxic free and plastic free future for every single living entity is the need of the hour and parties should take measures to ensure the minimum generation of hazardous waste.

Innovative infrastructure creates synergistic opportunities for advancing the Sustainable Development Goals. When properly designed, innovative infrastructure has the potential to simultaneously promote economic, environmental and social Goals. For eg promoting nature-based solutions, including green and natural infrastructures, as key components of systems-level strategic approaches to infrastructure planning and development.

Plastic is not the problem, but what to do with the plastic is the real problem”. In this regard, managing the use and the disposal of micro plastics in an arduous task but efforts taken in right direction in nascent stages shall be rewarded in the coming future.

Innovative infrastructure implies multiple levels of innovation. The transition to sustainable infrastructure will require multiple forms of innovation. Policy innovation is essential to facilitate macro-level, integrated planning as well as investment in sustainable infrastructure. Institutional innovation is necessary to provide a decision making environment that supports a transition toward sustainable infrastructure planning and investment. Technology innovation is required to meet the scientific and technical challenges of designing sustainable infrastructure. Financial innovation is necessary to address the issue of lack of investment for infrastructure projects, which is a major challenge currently facing sustainable infrastructure.

But at the grassroots, development and strengthening of national and regional systems-level strategic approaches to infrastructure planning and development that incorporate inclusiveness, resilience, security and environmental sustainability across different sectors, in close connection to the 2030 Agenda must be the norm.

Summing up, ending plastic pollution should stand in synchronous terms with SDG goal 6 (Clean water and sanitation), 11 (Sustainable cities and communities),13 (Climate action),14 (Life below water), 16 (Life on land) and 17 (Partnerships for the goals). Integrating and Interlinking the mandated SDGs will help alleviate the problem of plastic pollution to a larger level.

<https://www.plasticpollutioncoalition.org/pft/2017/7/20/new-global-study-shows-the-production-use-and-fate-of-all-plastics-ever-made>

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Insights

Can we uphold a new paradigm of Science & Solve Different in Indian context?

By IWF Bureau

“Welcoming the recent outcomes of the 24th Conference of the Parties to the UNFCCC in Katowice, Science can indeed be a tangible way forward to reflect the said priorities of SPBF-2. The bottom line is “coherent policy frameworks, good governance mechanisms and sound means of implementation strategies” should form the mosaic of Green Governance”.

The **Second Global Session of the UN Science-Policy Business Forum on the Environment (SPBF-2)** was convened from **8-10 March 2019** at the **UN Environment Programme (UNEP)** headquarters, **Nairobi, Kenya**. This framework is designed to catalyze a more dynamic interface between science, policy, business and society. It is designed as an accelerator and incubator of innovation and positive change towards green solutions to achieve the Sustainable Development Goals. In support of the **UNEA4 theme of “Innovative Solutions for Environmental Challenges and Sustainable Consumption and Production,”** SPBF-2 focused on **six key streams** of which included *‘Science for Shaping Green Policies’*. Science is our best hope to enable informed choices & voices about our future. Green policies must amalgamate the fusion of ‘innovation’ entrepreneurship, science, social engineering and green good governance.

Launched at the UN Environment Assembly in December 2017, the UN Science-Policy-Business Forum on the Environment is a framework designed to catalyze a more dynamic interface between science, policy, business and society. It is designed as an accelerator and incubator of innovation and positive change



towards green solutions to achieve the Sustainable Development Goals. The Forum promoted opportunities for green investment, driven by advances in science and technology, empowering policies and innovative financing. It was attempted to maximize the efficient use of natural resources and encourage environmentally sound choices by all players across all sectors. We need to alter not only the physical design and infrastructure, but also to encourage positive resourcing decisions, behavioral change and policy action.

National pledges under the Paris Agreement aim to bring around a third of the reduction in emissions required by 2030 to meet climate targets. The forum also examined the means of harnessing the power of finance, market and green technology to fight climate change. The Green Technology Startup Hub showcased some ground-breaking innovations with in-depth sessions focusing on specific projects, financing and the policy support required to mainstream solutions and to bridge the technology divide.

Taking into considerations of Producing and Consuming more food than ever before, with detrimental impacts on human and planet health, the forum argued the principles of SDGs 12 (Responsible Production & Consumption). Measuring and achieving food waste reduction at global level, promoting healthy & nutritional lifestyle.

Initiatives like Swachh Bharat Abhiyan or Solid Waste Management rules must promote scientific collection, disposal and treatment of wastes generated. Scientific concepts of circular approach show the way to instill **6Rs: Reduce, Reuse, Recycle, Refuse, Rethink and Regenerate**. Moreover, every government policy must enclose ‘green mandate’ stepping in pace towards inclusive governance while benchmarking appropriate basic infrastructure. Paradigm of innovation must be coupled with science to trigger robust inclusion of cost effective and optimal resource utilization.

With **overarching objective** of promoting **SCIENCE** in everyday lives, we must recognize to translate science as a key indicator to shape the future of Aspiring India. For instance, our on-field experiences in the Aspirational Districts of Uttar Pradesh & Uttarakhand proved that Science as a medium can be enforced through **Lab-to-Land** i.e. disseminating scientific awareness and temper, raising capacity building of the people, encompassing scientific green practices like rewilding, it signified to underline that the essence of Science is unproven till its translated as a scientific practice at Ground Zero.

Besides Science, the Forum also promoted strengthening the evolving role of art and citizen science as well as creating the conditions to support and empower green technology startups. This year’s Global Session of the Forum focuses on the nexus of science, innovation and entrepreneurship for the environment, and covered the following key streams:

Foundation for a Global Digital Platform for our Planet

This stream was built on discussions covering the following key tracks: Opportunities offered by Artificial Intelligence and Machine Learning; Big Data, Earth observations and remote sensing, Governance, Equity and Ethics; Financing.

Changing discourse: Smarter, Greener Solutions for Cities

Innovative technologies from E-mobility to green buildings need to be leveraged to maximize the efficient use of natural resources and encourage environmentally sound choices by all players across all sectors. We need to alter not only the physical design and infrastructure, but also to encourage positive resourcing decisions, behavioral change and policy action.

Green Technology Startup Hub

Startups are transforming markets and economic growth. The forum acted as an accelerator and incubator of start-up innovation for the environment as it examines the enabling policies and actions required to use such innovation to transform the world into greener and more sustainable living.

Innovative Solutions on Climate Challenge: Finance, Market and Non-State Actors

It also examined means of harnessing the power of finance, market and non-state actors to fight climate change and support National pledges under the Paris Agreement to meet climate targets.

Healthy Food for a Sustainable Planet

Sessions examined Agricultural transformation to determine sustainable and climate-smart agricultural models, and the need for good Nutrition and healthy diets. This was realized to understand that we are producing and consuming more food than ever before, with detrimental impacts on human and planet health.

Welcoming the recent outcomes of the **24th Conference of the Parties to the UNFCCC in Katowice**, Science can indeed be a tangible way forward to reflect the said priorities of SPBF-2. The bottom line is **“coherent policy frameworks, good governance mechanisms and sound means of implementation strategies” should form the mosaic of Green Governance**. Further, working with different stakeholders, finding environmentally friendly practices & alternatives, investing in environmental research, education and awareness, seeking innovative & nature based solutions to environmental problems can act as supplement towards Green Governance. The Forum is a platform for opportunities for green investment, driven by advances in science and technology, empowering policies and innovative financing. It was attempted to maximize the efficient use of natural resources and encourage environmentally sound choices by all players across all sectors. We need to alter not only the physical design and infrastructure, but also to encourage positive resourcing decisions, behavioral change and policy action.

<https://www.canstockphoto.com.au/go-green-icons-concept-tree-12796260.html>

Analysis

Ambitions beyond Growth: What does ESCAP Survey 2019 have in store for SDG 6?

By IWF Bureau

“The ESCAP Social survey talks about ‘Ambitions beyond growth’. The Assessments are done, Agenda is set, what is important now is the deciding the Future discourse which shall embark on the prospects of Asia-Pacific region towards securing SDG 6”.

A comprehensive assessment underlined in ESCAP shows the Asia-Pacific region needs to invest an additional \$1.5 trillion every year to reach the Goals by 2030. Further, an additional investment



of \$434 billion per year would be needed for clean energy and climate-resilient infrastructure. **With South Asian Region** between 1970 and 2016 witnessing losses and damage equivalent to \$1.3 trillion due to disasters, including floods, storms, droughts, earthquakes and tsunamis. Pollution and climate change adversely affect the agricultural sector due to declining soil productivity, groundwater depletion and increased incidence of pests. How can we reverse such hazards? The damage cannot be reversed

but the future disasters can be prevented to a larger extent.

To **secure a climate-resilient future**, urgent action is needed, which entails an annual incremental expenditure of \$616 billion. This investment would help the Asia-Pacific region contribute to keeping the global temperature rise well below two degrees Celsius by the end of the century compared with the preindustrial level, as enshrined in the Paris Agreement. It not only mitigates climate risks by increasing the use of renewable energy and improving energy efficiency, but it also adapts the economies in the region to rising climate-induced disaster events

A disturbing fact is that lack of community ownership and incentives for households to invest in sanitation are some examples of why water and sanitation targets are not reached. Raising awareness on the risks to health posed by open defecation and investing in behavior change related to hygienic practices have proven to be more efficient. The absence of clean drinking water leads to 80% of the illnesses prevalent in rural India. Sustainable interventions can only be achieved through education, empowerment and ownership by the rural community. Asia-Pacific developing countries need an additional \$14 billion annually to provide universal access to water and sanitation by 2030. Progressive & Learning Environment outcomes through qualitative behavioral change, Knowledge exchange among stakeholders and disseminating scientific literacy holds the key to bring qualitative life among the rural community.

At \$1 per person per day, this investment is worthwhile. It could end extreme poverty and malnutrition for more than 400 million people. The survey proposes to move away from a model of Profit maximization to one that puts Purpose at its core. For this, the basic essence is securing water as Human Right. Securing **human right to safe drinking water** must place obligation on States to ensure that services are affordable. It is now widely recognized that the primary determinant for addressing the issues of global poverty is the provision of safe water; access to safe water enhances the potential for educational opportunities (particularly for girls) and facilitates participation in local community economic development.

The survey also recommends Resource efficiency to climate change mitigation programmes based on innovative techniques and technology. Scientific concepts like NEWater, green infrastructure, circular approach holds high potential to revive the water economy and necessary to meet future water demands. **Goal 6** must call for water use efficiency, water quality and water resource management to help conserve water-related ecosystems. Nature based solutions like recharge of natural aquifers, community conservation water bodies, Integrated Water Shed Management, Eco-system based Adaptation, restoring wetlands, water-food-energy nexus should be adopted.

Estimating the financial costs of achieving SDGs by investing in people and planet is important to finance sustainable projects to realize basic human capacities, secure humanity's future and enable us to live in harmony with nature. Mobilizing financial resources requires a concerted effort harnessing public resources, leveraging the private sector and promoting development partnerships and regional cooperation. Further, **Scaling up partnerships** by way of Convergence between the stakeholders, governments, civil society in the Asia-Pacific region. The rationale behind such strategy is to harness different stakeholder synergies and improving planning and implementation and outcomes.

Breaking the policy constraints is the hourly need to bring in requisite framework. For example; water legislation must prioritize water use for domestic consumption over other uses. A well-designed policy needs to have a substantive vision accompanied by assessment, monitoring and evaluation for cost effective benefits so that they can be appropriately improved based on an assessment of feedback mechanisms.

How do we make world a better place to live? These 'Ambitions beyond Growth' must encompass Access, Availability & Affordability of resources and services. Only then these Ambitions can translate into Actions & Outcomes to include socio-economic development. We must ensure that every individual and countries collaborate and cooperate working together to ensure 'No One is Left Behind' in this journey of sustainable development.

In Brief

Leaving No One Behind-Promise or Pledge?

By IWF Bureau

“The World Water Day 2019, observed on 22 March 2019, throughout the world, had the theme of “leaving no one behind”, which ‘is the central promise of the 2030 Agenda for Sustainable Development. When one talks of “water for all”, that also implies leaving no one behind”.

The worsening situation of water availability rules out the hackneyed approach of ‘business-as-usual’ because the 2030 Agenda enjoins upon us “to reach the furthest behind the first”

This theme envisages a crystal-clear message that everyone must participate and benefit from the progress of development. In other words, it means achieving SDG goal 6 regarding Clean Water and Sanitation, which has as its first target universal and equitable access to safe and affordable drinking water for all by 2030.

Undoubtedly, much progress can be said to have been made in water sector in recent decades; nonetheless, around 2.1 billion people are still bereft of clean water. It has been amply demonstrated by *The Sustainable Development Goal 6 Synthesis Report 2018 on Water and Sanitation* that we are still off-track to meet SDG-6. Water sector is already afflicted with perennial problems of yawning gap between demand and supply of water, accelerated pace of pollution of water resources, lack of funding and enfeebled governance to manage water effectively and efficiently. The worsening situation of water availability rules out the hackneyed approach of ‘business-as-usual’ because the 2030 Agenda enjoins upon us “to reach the furthest behind the first” by asking ourselves as to who amongst the 2.1 billion people presently without safe water, are the marginalized groups and it is our bounden duty to reach them. Concurrently, efforts ought to be made to let these people enjoy their right to clean water and sanitation.

Celebrating World Water Day 2019

Facts about Water



collection in eight out of ten households with water off-premises.

- 2.1 billion people live without safe water at home.
- One in four primary schools have no drinking water service, with pupils using unprotected sources or going thirsty.
 - More than 700 children under five years of age die every day from diarrhoea linked to unsafe water and poor sanitation.
 - Globally, 80% of the people who have to use unsafe and unprotected water sources live in rural areas.
- Women and girls are responsible for water

- For the 68.5 million people who have been forced to flee their homes, accessing safe water services is highly problematic.
- Around 159 million people collect their drinking water from surface water, such as ponds and streams.
- Around 4 billion people – nearly two-thirds of the world’s population – experience severe water scarcity during at least one month of the year.
- Over 800 women die every day from complications in pregnancy and childbirth.
- 700 million people worldwide could be displaced by intense water scarcity by 2030.

(Source: unwater.org)

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Strategy

Breaking Free From Plastics

By IWF Bureau

“Toxics are accumulating at alarming rates. Plastics are released into the marine environment from dumping, consumer markets that do not match local waste management systems, and production spillage. Microplastics have even more varied sources - from primary sources like personal care product and pellets and flake lost at production facilities to secondary sources like textiles, tires, city dust, and other larger plastics”.



The Second meeting of the Adhoc Open Ended Expert Group on marine litter and micro plastics was held from 3 to 7 December 2018 in Geneva preceded by the coordination meeting for Major Groups and Stakeholders on 2 December 2018. The mandate of the expert group was to explore the barriers to combat marine litter and micro-plastics and is symbiotically linked to the global community’s efforts to combat this menace. The recommendations especially were to be adopted at UNEA4 in March 2019.

After a first meeting of the AHOEEG in May 2018, a second meeting was convened on 3-7 December, 2018, in Geneva, Switzerland. The group gathered member-States, experts, Major Groups and stakeholders to exchange on options to tackle marine plastic litter and microplastics. The participating organizations and experts urged for the establishment of a dedicated Convention on plastics, which at present is largely missing from the international framework.

The meet emphasized on two distinct themes. Firstly, Information and Monitoring, and Governance. The Information and Monitoring path recognized a continuing need for measuring, monitoring and reporting on global progress on preventing plastic from entering the marine environment to achieve a substantial reduction in marine plastic pollution. In terms of the Governance path, the most important factor in eliminating plastics from the marine environment relates to the life cycle of the plastic. That includes the whole process, from their production from the raw material, to the point of entering the ocean. Long-term implementation strategies include the use of recyclable and reusable materials, as well as improvements in how (plastic) waste is managed at the local government level.

The stakeholders proposed a four-pillar strategy, which focused on: coordination and cooperation of existing mechanisms; binding measures to reduce plastic pollution and harmonize legislation; financial support for a new institution and participating developing countries; and technical support to ensure informed, science-based decision-making and avoid false solutions to the plastic pollution crisis.

Experts called for the need for stronger global action to combat marine litter. A number of initiatives and activities exist aiming at eliminating plastic litter entering the ocean and their potential should be explored within their respective mandates. Meanwhile, there was a growing recognition for a new governance model to be explored. Some delegations pointed to a new legally binding agreement as one possible effective response to be considered.

Additionally, it was reminded of the need to connect the agenda with the 2030 Agenda, particularly through SDGs 14.1 (by 2025, prevent and significantly reduce marine pollution of all kinds, particularly from land-based activities, including marine debris and nutrient pollution) and 12.4 (By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle). In this regard, it was emphasized to consider the importance of local and regional governments in this process, particularly as actors responsible for the implementation and follow-up of global decisions and of actions on the ground to eliminate marine plastic pollution.

The crisis of plastic pollution needs to be urgently addressed, even as we push for negotiating of a binding international convention. Discussion of governance structures should take a life cycle approach in their consideration of plastics, including the many adverse health impacts. Recycling is not enough to address the current onslaught of plastics and particularly not adequate to address the predicted 33% increase in production in the next 5 years. The causes of the plastic pollution crisis notably, plastic production and over packaging and the need for extended producer responsibility and product redesign to solve the problem.

What is so Significant about AHOEEG?

The work undertaken by the AHOEEG is recognized as significant. At UNEA-4 it was resolved that the AHOEEG's mandate, issued at UNEA-3 would be extended to UNEA-5, which is scheduled for February 2021. The AHOEEG continues working on pursuing the outcomes with the broad themes – Information and Monitoring, and Governance. Priority attention is also given to establish strong partnerships between governments, non-government and other relevant organizations and agencies to build and nurture relationships to espouse the case for plastic free world. The relationships will emphasize and encourage progress towards a “6 R's” approach – recycle, re-use, reduce, refuse, regenerate and rethink the use of plastic.

Drawing high-level representation and a global audience, many of the countries and stakeholder groups, in support for the AHOEEG, further committed to address marine plastic and micro-plastic pollution. For instance, Australia's contribution emphasized the reduction of marine plastics through National Waste Policy and setting an ambitious target of 100 per cent use of recyclable, compostable or reusable packaging by 2025.

The next reform...

- A strong call for binding international governance on plastic and global legally binding instrument towards stronger enforcement measures.
- The establishment of a global knowledge hub to share standard science and methodologies (including citizen science) and national inventory information on plastic production.
- Consideration of full life cycle of plastics in a holistic, evidence-based approach for eliminating marine and micro-plastic pollution.
- The urgent need for strengthened knowledge of the levels and effects of microplastics and nano-plastics on marine ecosystems, seafood and human health

- Preventive action through waste minimization and environmentally sound waste management as the highest priority in geographical areas with the largest sources of marine plastic
- Support for coordination mechanisms especially data sharing, monitoring and reviewing data base

Let's make every attempt to #BreakFreeFromPlastic and safely secure the implementation of SDGs 2030.

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Perspective

Can we ever synchronize Sustainability with Ecology and Environment?

By IWF Bureau

“Addressing issues pertaining to sustainability requires expansion of discourse on resource allocation to incorporate the idea that can be an optimal mechanism of disbursing resources across time as well as among the people. Two questions can be considered under the umbrella of sustainability: firstly, as to how long our resources will last in the light of existing consumption patterns; secondly, as to how these resources should be managed so that future generations have access to the same quality of life as present generations”.

‘On account of invitation as a plenary speaker at the International Conference organised by IGNOU on the subject of “Environmental and Ecological Sustainability - Engaging the Stakeholders.” Dr Arvind Kumar highlighted the different economic and social issues of the contemporary environmental policy domain and stressed that it is imperative for policymakers in every country to reflect on how societies can be made more resilient’.

Environment is a complex concept and a precise delineation of the scope of ‘environment’ is somewhat debatable as it may include public and private property; different media (water, soil, air); natural resources



traded in the marketplace; ‘pure’ environment such as wildlife and ecosystem dynamics; common concerns such as the conservation of biodiversity; and cultural elements. Without indulging into the maze of definitions of environment, the definition provided by UNEP is quite broad according to which ‘environment’ includes abiotic and biotic components, including air, water, soil, flora, fauna and the ecosystem formed by their interaction’ and might even include ‘cultural heritage, features of the landscape and environmental amenity’, but it excludes private property.

Sustainability is also a complex concept and its most often quoted definition originates from the definition of sustainable development as defined by the 1987 World Commission on Environment and Development, according to which, “sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”. By improving upon this definition, the concept of sustainability is defined as “the physical development and institutional operating practices that meet the needs of present users without compromising the ability of future generations to meet their own needs, particularly with regard to use and waste of natural resources. Sustainable practices support ecological, human, and economic health and vitality. Sustainability presumes that resources are finite, and should be used conservatively and wisely with a view to long-term priorities and consequences of the ways in which resources are used.”

Addressing issues pertaining to sustainability requires expansion of discourse on resource allocation to incorporate the idea that can be an optimal mechanism of disbursing resources across time as well as among the people. Two questions can be considered under the umbrella of sustainability: firstly, as to how long our resources will last in the light of existing consumption patterns; secondly, as to how these resources should be managed so that future generations have access to the same quality of life as present generations.

The first question of resource longevity or durability entails prediction and accounting; as to how technology, population growth and natural regeneration impact the stock of environmental goods that would be available from present to the near future. Policy planners and economists have been seized of the issues pertaining to longevity or durability of natural resources, especially at a time when the world is running out of water, agricultural land, fish, and other significant environmental goods. The notion of sustainability seeks to build the narrative on the degree or extent to which a good is becoming scarcer. The growing concern has been that the supply of a resource is not keeping pace with increasing demand.

Environmental challenges have now become more systemic, multifaceted, complex, uncertain and intertwined with socioeconomic factors. At the global level, limits have been crossed for four out of nine planetary boundaries owing to human-induced changes: climate change, biosphere integrity, land-system change, and biogeochemical flows (nitrogen and phosphorus). Besides, human health is being affected in various parts of the globe on account of poor air quality, climate change, unhealthy lifestyles and the disconnection between society and natural environments, thereby giving rise to new risks. Healthy planet to be inhabited by healthy people requires resilient ecosystems, efficient resource use, clean air, sufficient clean water, sustainable management of chemicals and waste and sustainable cities. It is now recognized that, “neither environmental policies alone nor economic and technology-driven efficiency gains will be sufficient to achieve sustainability”.

The reasons for this failure are a complex set of interrelated structural causes, implementation traps and knowledge/scoping issues. It has been identified that the three key factors as specific reasons for individual policy failures: firstly, economic policy incentives for private and public activities for continued exploitation of natural resources; secondly, lack of political will to implement effective sustainable policies; and thirdly, non-communication of the seriousness of sustainability issues to key stakeholders. In other words, implementation of sustainability strategies needs to be tailored to suit individual situations, if they are to be effective.

Apart from envisaging fundamental transitions in energy, food, mobility and urban systems, substantive changes in major institutions, practices, technologies, policies and lifestyles are also called for. There is also a dire need for new governance coalitions involving national and subnational levels of government, businesses and citizens. The changeover to a truly inclusive green economy needs be built on resilient ecosystems, clean production systems, healthy consumption choices, reduced negative distributional effects of environmental policies and improved overall environmental justice for all.

To conclude, the changeover to a truly inclusive green economy needs be built on resilient ecosystems, clean production systems, healthy consumption choices, reduced negative distributional effects of environmental policies and improved overall environmental justice for all.

Overview

Unfolding the Dynamics of Katowice Climate Change Conference

By IWF Bureau

“From now on it is only through a conscious choice and through a deliberate policy that humanity can survive.”

Pope John Paul II



The 24th meeting of the Conference of the Parties (CoP-24) to the UN Framework Convention on Climate Change (UNFCCC) was convened from 2-15 December 2018 at Katowice (Poland) bringing together over 22,000 participants, including nearly 14,000 government officials, over 7,000 representatives from UN bodies and agencies, intergovernmental organizations, and civil society organizations, and 1,500 members of the media.

COP24 President Michal Kurtyka and Executive Secretary of the UN Framework Convention on Climate Change Patricia Espinosa pose with the heads of delegations after adopting the final agreement during a closing session of the COP24 UN Climate Change Conference 2018, Katowice, Poland, December 15, 2018 (Photo Courtesy: REUTERS)

Convening of the CoP-24 took place at such a pivotal moment when the world is faced with the increasingly devastating impacts of climate change. The participating countries to the CoP-24 were called upon to overcome long-standing disagreements and hammer out the technical details of a robust and ambitious post-2020 climate regime in the wake of the fact of the deadline of finalizing the Paris Agreement “rulebook” looming. In the midst of vast array of changes having taken place since the conclusion of the Paris Agreement three years ago that inter alia included warnings of science on extreme weather events worldwide, mounting level of global emissions, political context shifting from multilateralism to populism and in some cases, even opposition to scientific evidence, it had started becoming evident that the transition to a zero-emissions economy is not yet fully underway. Many experts are of the opinion that despite heavy odds like political headwinds, long-standing disagreements among countries, and the technical complexity of the task, the CoP-24 seemed delivering desired results.

Undoubtedly, the ‘Katowice Climate Package’ adopted on 15 December 2018, has put in place a set of implementation guidelines that were considered by many to be sufficiently robust; nevertheless, some question still bother many experts: Does the Katowice Package establish the strong and stable institutional framework required to implement the Paris Agreement? And, given the signals of increasing urgency, what does this framework mean for ambition in the post-2020 era? Answers to these and other related queries can be ascertained by examining the Paris Rulebook in some detail by focusing on key parameters of success, namely: resolution of contentious political issues; delivering effective guidelines for a dynamic architecture; and building the basis for increased ambition.



Plenary meeting at COP24. (Photo Courtesy & © Unclimatechange/Flickr [CC BY-NC-SA 2.0])

The CoP-24 at Katowice accomplished its task of delivering a ‘Rulebook’ for the Paris Agreement, and amid calls for greater ambition to address the climate crisis, the conference largely delivered, by producing a package that facilitate countries’ efforts to implement the Paris Agreement. While focusing on completing work on the Paris Agreement Work Programme (PAWP), this meeting also adopted the Katowice Climate Package, which enclosed decisions on nearly all of the issues mandated as part of the PAWP, including:

- On Mitigation: further guidance in relation to nationally determined contributions (NDCs), common time frames, and modalities, work programme, and functions under the Paris Agreement of the forum on the impact of the implementation of response measures;
- On Adaptation: further guidance on adaptation communication;
- On Finance: identification of the information to be provided by parties in accordance with Agreement Article 9.5 (ex-ante finance transparency), matters relating to the Adaptation Fund, and setting a new collective quantified goal on finance;
- On Technology: scope of and modalities for the periodic assessment of the Technology Mechanism, and the technology framework
- The modalities, procedures, and guidelines for the transparency framework for action and support;
- The global stock-take; and
- Modalities and procedures for the effective operation of the committee to facilitate implementation and promote compliance.

While welcoming the Paris Rulebook for providing the countries with a common framework for reporting and reviewing progress towards their climate targets, some critics are critical of the new rules that fall short in one crucial area of compelling countries to up their game to the level required. Lamenting that the national pledges adopted in Paris were still sadly inadequate to meet the 1.5°C or 2°C global warming goals of the Paris Agreement, some critics have drawn attention to the IPCC's special report released in early October 2018 that emphasizes on the urgent need to accelerate climate policy. Bemoaning the inability of the Katowice summit to directly asking for national climate targets to be increased, these experts aver that the final text of the summit simply reiterates the existing request in the Paris Agreement for countries to communicate and update their contributions by 2020. They pin their hopes on the forthcoming UN General Assembly summit scheduled to be held in September 2019, to bring the much-needed political momentum towards a new raft of pledges in 2020 that are actually in line with the scientific reality.

The failure becomes more pronounced in the wake of the IPCC's latest report which demonstrates that the PACC's targets are too conservative to avert 'catastrophic' climate change.

The countries represented at CoP-24, a test on climate multilateralism, did affirm their decision to submit national climate commitment by 2020 and it is now the bounden duty of these countries to begin the serious work of domestic processes to enhance ambition by 2020. Only a determined action will enable these countries to bring their commitments to the UN Secretary General's Summit in 2019 and pave way for setting a clear direction for 2020 that will contribute effectively to tackle climate change.

Undoubtedly, conclusion of the Paris Agreement on Climate Change (PACC) in 2015 has proved its resilience to global geopolitics; nonetheless, the spirit of solidarity that was manifest at the time of its signing has become discernible only sporadically since then. Some experts have pointed out that longstanding disputes over finances and technology transfer have come in the way of countries raising their GHG reduction ambition, which according to these experts, is a grave failure because the individual NDCs do not add up to the PACC's goal of keeping the global temperature below 2 degrees Celsius above pre-industrial levels. The failure becomes more pronounced in the wake of the IPCC's latest report which demonstrates that the PACC's targets are too conservative to avert 'catastrophic' climate change. Lamentably, the Paris Rulebook also fails to provide a roadmap to tackle this challenge.

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Scenario

Can India engage the Scope, Scale & Speed in the aftermath of COP-24?

By IWF Bureau

‘On December 4, 2018, India circulated a paper titled “3 Essential “S” s of Climate Finance — Scope, Scale and Speed: A Reflection” on the sidelines of CoP 24, which questioned climate finance values being reported by the developed countries as having been transferred by them to developing countries. The paper also said definitions of climate change finance used in various reports by developed countries were not consistent with the provisions of United Nations Framework Convention on Climate Change (UNFCCC)’.

Two-week long negotiations on climate change, also called CoP-24, concluded on late night of December 15 in the city of Katowice in Poland, wherein nearly 200 countries had assembled, while delivering a milestone rule book for the Paris climate treaty, but failing to dial up national efforts to slash carbon emissions. The Paris Agreement on Climate Change (PACC), which will start getting implemented from 2020, replacing the existing Kyoto Protocol, seeks to keep the rise in global average temperatures to well below 2 degree Celsius from pre-industrial levels. The finalization of the rulebook for implementing the PACC was the main agenda of the COP-24 and it received a mixed response from governments and observers.



AK Mehta at a side event organised by NCSM Chennai at India Pavilion UNFCCC COP24. (Courtesy Photo: Image: Twitter/MoEF&CC).

India has actively participated in the CoP-24 negotiations. On December 4, 2018, India circulated a paper titled “3 Essential “S” s of Climate Finance — Scope, Scale and Speed: A Reflection” on the sidelines of CoP 24, which questioned climate finance values being reported by the developed countries as having been transferred by them to developing countries. The paper also said definitions of climate change finance used in various reports by developed countries were not consistent with the provisions of United Nations Framework Convention on Climate Change (UNFCCC).

During the critical phase of negotiations on December 12, India asserted that the PACC was 'non-negotiable' and there could be no compromise on the basic principles such as equity and Common but Differentiated Responsibilities and Respective Capabilities (CBDR-RC). India's statement was made by AK Mehta, Additional Secretary, Ministry of Environment, Forests and Climate Change, on behalf of Environment Minister Harsh Vardhan.

India's statement came in the wake of a move by the developed countries, led by the US and the EU, to dilute CBDR-RC, a principle within the UNFCCC that acknowledges the different capabilities and differing responsibilities of individual countries in addressing climate change.

India's statement came in the wake of a move by the developed countries, led by the US and the EU, to dilute CBDR-RC, a principle within the UNFCCC that acknowledges the different capabilities and differing responsibilities of individual countries in addressing climate change. The developed countries' move was strongly resisted by India and other developing countries, citing the historical responsibility of the developed nations in emitting carbon dioxide, contributing to global warming.

While agreeing that the PACC is non-negotiable and that the delicate balance reached between developed and developing countries must be retained, India also insisted that the outcome of the Katowice COP-24 should be inclusive, consensus based and an integrated package, including all the components of the Paris Agreement Work Programme, to reflect the global consensus reached at Paris in 2015. India's statement further added: "Most importantly, we must stand with the poor, marginalized and vulnerable communities who would be most impacted by climate change to show that 'WE CARE'". While emphasizing that it was time to focus on finding common grounds and supporting each other, based on the principles of equity and climate justice, so that "no one is left behind", India's statement also noted: "It is important to ensure equitable access to global commons for all. The Paris Agreement signifies progress towards enhanced implementation of the Convention. While we do so, we have to maintain continuity in action by fulfilling pre-2020 commitments."

Reiterating India's stand to continue to take stock of pre-2020 action and ambition next year as well, the statement said: "We expect that developed countries shall honor their pre-2020 commitments so that no undue burden is shifted to the post-2020 period. We also look forward to see the Doha Amendment coming into force as soon as possible," Taking note of the fact that the vulnerable populations are the worst hit by extreme weather events due to a lack of resources to cope with them, India's statement added that the IPCC's latest report on global warming "enjoins upon us to collectively address the issues of climate change with the urgency that it deserves."

While taking part at the crucial stage of negotiations on the Rulebook for Paris Agreement on December 12, India's lead negotiator Ravi Shankar Prasad said: "India wishes to express its strong reservation regarding the treatment of equity in the global stock-take decision. Equity is specifically mentioned in Article 14 of the Paris Agreement. It is the basic principle of the UN Framework Convention on Climate Change and the Paris Agreement along with the common but differentiated responsibilities." Cautioning that the entire global stock-take exercise would be lopsided if the process, input, the technical assessment and output of the global stock-take did not fully address equity.

At this juncture of the Conference, India mooted following major points in reiteration of its commitment to the Paris Agreement on Climate Change (PACC):

1. "We all agree that the Paris Agreement is non-negotiable. Therefore, the delicate balance reached between developed and developing countries must be retained, and the principles such as equity and Common but Differentiated Responsibility and Respective Capabilities must be given its due," India said at the ministerial session of the conference.

2. It said the outcome at Katowice should be inclusive, consensus based and an integrated package, including all the components of the Paris Agreement Work Programme, to reflect the global consensus reached three years ago on this very day while adopting the Paris Agreement.
3. "Most importantly, we must stand with the poor, marginalized and vulnerable communities who would be most impacted by climate change to show that 'WE CARE'," India said in its statement.
4. It added that it was time we focused on finding common grounds and supporting each other, based on the principles of equity and climate justice, so that "no one is left behind".
5. "It is important to ensure equitable access to global commons for all. The Paris Agreement signifies progress towards enhanced implementation of the Convention. While we do so, we have to maintain continuity in action by fulfilling pre-2020 commitments."
6. "While we continue to take stock of pre-2020 action and ambition next year as well, we expect that developed countries shall honour their pre-2020 commitments so that no undue burden is shifted to the post-2020 period. We also look forward to see the Doha Amendment coming into force as soon as possible," said the statement.
7. "The vulnerable populations are the worst hit by extreme weather events due to a lack of resources to cope with them. The report enjoins upon us to collectively address the issues of climate change with the urgency that it deserves," India said, days after the UN scientific report was blocked by countries, including the US, Saudi Arabia, Russia and Kuwait, at the ongoing climate conference.

While supporting the adoption of the Paris Rulebook at the CoP-24, India had expressed its reservations over the lack of equity in the rules pertaining to global stock-taking in implementing the PACC. Alluding to the specific mention of equity in Article 14 of the PACC, which is the basic principle of the UNFCCC and the PACC, along with the common but differentiated responsibilities, India cautioned that the entire global stock-taking exercise would be lopsided if the process, input the technical assessment and output of the global stock-take didn't fully address the principle of equity which envisages that the vulnerabilities, problems and challenges of the poor and marginalized were not prioritized to ensure climate justice.

Events

Water is the new OIL

By IWF Bureau

“Do you know over 1.7 billion people live in river basins where water use exceeds recharge, leading to the desiccation of rivers, depletion of groundwater and the degradation of ecosystems? Water shortages have been identified by industry, government, academia and civil society as one of the top three global risks of highest concern.”



“World Water Day” on March 19, 2019 was organized under the aegis of “Amity Institute of Water Technology & Management” and “Amity Institute of Environmental Science” at Amity University Campus, Noida. The guest of honor Dr Arvind Kumar signifying the importance of ‘Fresh Water and sustainable development - Leaving no one behind’ remarked that “Leave no one behind” is a core principle of the 2030 SDG Agenda.

It is a unique opportunity to draw attention and to create momentum that compels everyone to understand the importance of water and its linkages with human health, environment and economic development because water is not just a sector but a connector and this nexus of SDG 6 of Clean Water and sanitation for all with SDG 3 Good health and well being, SDG 12 Responsible consumption and Production and SDG 17 on Partnerships to achieve Goals is an indispensable catalyst for almost all developmental activities.

The need of the hour is to go circular by embracing the need to recover, recycle, repurpose, refurbish, repair, refuse, rethink, reduce, reuse and remanufacture. Attainment of the targets of the SDGs within a stipulated period along with achieving the targets of Paris Agreement on Climate Change, with water being at the core, can be facilitated by adopting new policies and programmes based on innovative techniques and technology along with new concepts of cooperation and partnership in tandem with existing concepts and approaches. Scientific concepts like new water, rewilding, use of green infrastructure, roof-top gardens holds high potential to revive the water economy and the application of circular economy principles can help us meet the step changes to practice that will be necessary for it to meet future water demands.

Currently, IWF’s on-field experiences working in the Aspirational Districts of Uttar Pradesh and Uttarakhand by way of community engagement and stakeholder consultation resulted in understanding the problems and challenges of the seven aspirational indicators underlying the water sector, basic education, health, infrastructure, financial inclusion and skill development. It summed up, to the absence of clean drinking water and as discussed earlier led to 80% of the illnesses prevalent in rural India which further prevented children from attending schools leading to economic disparity. It forms a vicious cycle and we have to work towards breaking this vicious chain because sustainable interventions can only be achieved through education, empowerment and ownership. Moreover, without an understanding of the social,

political, cultural, historical and economic contexts within which humans live, work and play, sustainable change in human behaviour is not possible.

To link Fresh water and Sustainable Development, some Key Imperatives must be acknowledged which as per my understanding can help in filling up the gaps

- To secure Water as Human Right, we must envisage the twin-track approach of 'Comprehensive Water Governance'. Governance mechanisms at all levels (local, national, regional and global) need to be more open, inclusive and accountable to marginalised groups. Local communities must be closely involved in developing local targets and indicators, and take an active role in monitoring and holding local authorities accountable for SDG implementation.
- Combining these instruments into a well-designed policy is critical for effectiveness. For example; water legislation must prioritize water use for domestic consumption over other uses. A well-designed policy needs to have a substantive vision accompanied by assessment, monitoring and evaluation for cost effective benefits so that they can be appropriately improved based on an assessment of feedback mechanisms.
- Nature based solutions like recharge of natural aquifers, community conservation water bodies, Integrated Water Shed Management, restoring wetlands, water food energy nexus should be adopted.
- Upholding the human right to water and sanitation requires paying special attention to geographical differences in access, access by vulnerable and marginalized groups, and affordability issues.

To conclude, Sustainable Development is supported by 'nature's contributions to humans', including the rich biodiversity, and the four ecosystem services—supporting, regulating, provisioning and cultural services. We often take these for granted and therefore must begin with a new paradigm of moving towards 'Conscious & Collaborated' efforts envisaging water as a **Valuable Resource**. The inextricable linkages between these critical domains require a suitably integrated approach to ensuring water and food security, and sustainable agriculture and energy production worldwide. Broad estimates indicate an investment of One Trillion USD in water sector in India in coming years and I feel water is the oil of 21st century and will command the world market place in the years to come and this time is Ripe & Right to **#SolveDifferent** and collectively make sure no one is left behind.

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Report

Appraising World Water Development Report 2019

By IWF Bureau

Cover page of the 2019 edition of the World Water Development Report (WWDR 2019) entitled 'Leaving No One Behind'.



Launching of the World Water Development Report (WWDR) 2019 was facilitated on 19 March 2019 at the Human Rights Council, at the Palais des Nations in Geneva (Switzerland). The 2019 WWDR is designed to seek to inform policy and decision-makers, inside and outside the water community, how improvements in water resources management and access to water supply and sanitation services are essential to overcoming poverty and addressing various other social and economic inequities. Broadly speaking, the impacts of water-related decisions often transcend geographic boundaries and affect everyone in this increasingly globalized world. Many experts have argued that in the current era of the ongoing process of climate change, extreme weather events, environmental degradation, population growth, rapid urbanization, unsustainable and inequitable consumption patterns, conflicts and social unrest, and unprecedented migratory flows are among the interconnected pressures faced by humanity, often hitting those in vulnerable situations the hardest through their impacts on water.

Finding appropriate solutions to the inequalities confronting the marginalized and disadvantaged groups call for tailored solutions that take account of the day-to-day realities of people and communities in vulnerable situations. Some experts are of the view that suitably designed and effectively implemented policies, efficient and appropriate use of financial resources, as well as evidence-based knowledge on water resources and water-related issues are also vital to eliminating inequalities in access to safe drinking water and sanitation.

The theme of the 2019 World Water Development Report on “No One is Left Behind” reiterates the commitments made by the UN member states in adopting the 2030 Agenda for Sustainable Development and in recognizing the human rights to safe drinking water and sanitation, both of which are essential for eradicating poverty and for building prosperous, peaceful societies. It is widely acknowledged now that improved water resources management and access to safe water and sanitation for all is a *sine qua non* for eradicating poverty, building peaceful and prosperous societies, and ensuring inclusiveness on the road towards sustainable development.

Worldwide increase in usage of water by about 1% per year since the 1980s has been reported. This increase is driven by a combination of factors like population growth, socio-economic development and changing consumption patterns. Broad estimates show that global water demand is expected to continue increasing at a similar rate until 2050, accounting for an increase of 20 to 30% above the current level of water use, mainly due to rising demand in the industrial and domestic sectors. Lamentably, over 2 billion people live in countries experiencing high water stress, and about 4 billion people experience severe water scarcity during at least one month of the year. Increasing growth in demand for water coupled with the fact of the vagaries of climate change, stress levels of water are bound to grow.



Safe drinking water and Sanitation are recognized as basic human rights, as they are indispensable to sustaining healthy livelihoods and fundamental in maintaining the dignity of all human beings.

Launching of the 2019 WWDR took place on 19 March 2019 during the 40th session of the United Nations Human Rights Council (UNHRC), and in conjunction to the World Water Day, which aptly demonstrates as to how improvements in water resources management and access to water supply and sanitation services are necessary for addressing various social and economic inequities, such that ‘no one is left behind’ when it comes to enjoying the multiple benefits and opportunities that water provides. Safe drinking water and Sanitation are recognized as basic human rights, as they are indispensable to sustaining healthy livelihoods and fundamental in maintaining the dignity of all human beings.

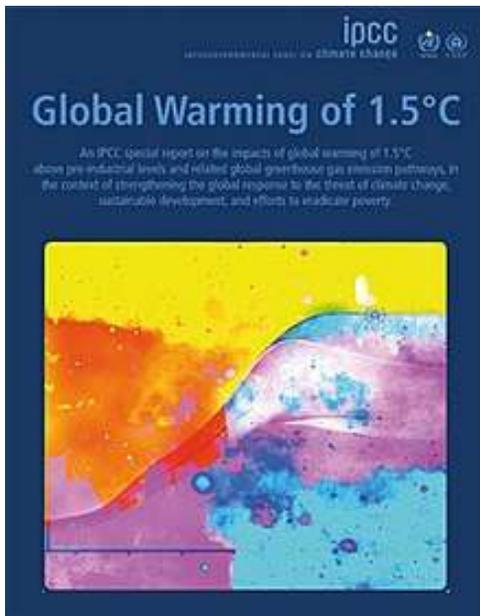
All member states of the United Nations are obligated under international human rights law to work towards attaining universal access to water and sanitation for all, without discrimination, while prioritizing those most in need. Fulfillment of the human rights to water and sanitation requires that the services be available, physically accessible, equitably affordable, safe and culturally acceptable. It is with this motive that 2019 WWDR has chosen the theme of ‘Leaving no one behind’ because this theme is at the heart of the commitment of the 2030 Agenda for Sustainable Development, which aims to allow all people in all countries to benefit from socio-economic development and to achieve the full realization of human rights.

Special Report

Perspectives on IPCC Report on Global Warming

By IWF Bureau

The closing part of the first week of October 2018 witnessed the release of the latest report of the UN's Intergovernmental Panel on Climate Change (IPCC), which formally sounded a warning signal that global warming is occurring at a faster pace than anticipated and that it could have devastating impacts if steps are not taken to cut down emissions. Even prior to the release of IPCC's report, strict warnings have been issued by the scientists from time to time that failure to halt or significantly reduce greenhouse gas emissions (GHGs) could cause irreparable loss to the Earth, society and human civilization. Critical thresholds for change are imminent owing to time lapses between the issuance of warning and the deadlines coupled with acceleration in the pace of change.



According to the IPCC report, keeping global warming below a critical limit warrants “rapid, far-reaching and unprecedented changes in all aspects of society.” Therefore, immediate action is called for. Warning by the report that global temperatures have already risen by about 1 degree could also mean that the world is already two-thirds of the way to the 1.5 C threshold set as a target by the Paris Agreement on Climate Change (PACC) Accord. If the world continues its current trajectory, that level will be reached in 2030. Adverse impact of rising global warming is already discernible in terms of rising sea levels, more extreme weather, melting of Arctics etc. The report also laments that even if countries honored their pledges as part of the PACC, rise in temperatures world-wide could be about 3 degrees on average by the end of the century.

The earlier belief that 1.5 C was a good target and 2 C was “the limit,” holds no water now, as one expert has opined that at the current juncture 2 degrees is intolerable for some parts of the world, and 1.5 degrees is the new mantra. Many experts believe that global net emissions of carbon dioxide need to fall 45 percent from 2010 levels by 2030 and reach “net zero” by mid-century if the 1.5-degree target is to be attained. However, attainment of this “possibility” would require a virtual transformation of modern societies, forcing change in energy policy, urban policy, construction and transportation; for which the IPCC reports points out the absence of any “documented historic precedent” for such a shift.

Attainment of “net zero” is not a technical problem, rather its solution requires social, economic and political considerations

In the wake of the fact that current global carbon dioxide emissions total 40 billion tons a year, attaining the 1.5-degree target entails reductions in emissions in the ensuing decade of more than 1 billion tons per year, which according to some experts, exceeds the emissions of virtually all emitting countries. Attainment of “net zero” is not a technical problem, rather its solution requires social, economic and political considerations, which according to some experts, are well beyond the world’s current capacity. In other words, attaining the goal of net zero emissions in just four decades is seemingly a huge challenge; nevertheless, as many experts agree, it is technically possible, and at an acceptably low cost to the global economy.

Some experts are of the view that a massive increase in the role of electricity can envisage a feasible path for a low carbon economy and eventually, net zero carbon dioxide emissions. It is argued that the share of electricity in final energy demand will have to grow from around 20 percent at current level to around 60 percent by middle to latter half of the century, and total global electricity generation will have to rise dramatically, from around 25,000 TeraWatt-Hours at current level to as much as 100,000 TWh. It is equally significant that bulk of this energy should come from low-carbon sources, especially from renewable sources.

India and IPCC Report

India is not immune to the adverse impacts of global warming, as pointed in the IPCC’s report on global warming. The report notes that in terms of impacts of global warming, the world is already witnessing the consequences of 1-degree global warming in the form of extreme weather events, rising sea levels and diminishing Arctic sea ice. Further rise in temperature entail the possibility of resulting in long-lasting or irreversible changes culminating in loss of some ecosystems. Inadequate measures in addressing the global warming can push India among the worst hit countries that may face wrath of calamities like floods and heatwaves, and reduced GDP.

According to climate experts, in South Asia, India, Pakistan and China are hotspots in a warming world. All climate projections point out that these regions will be vulnerable to multiple and overlapping hazards at even 1.5-degree rise and the consequential impacts would include intensified droughts and water stress, heatwaves, habitat degradation, and reduced crop yields. It is further argued by the same experts that, as indicated by the IPCC report, increase in global temperature up to 2-degree C instead of 1.5-degree C, entails the likelihood of impacting economic growth or reduced GDP growth on countries like India, and those in South-East Asia and Africa. There is also possibility of increasing frequency of floods of all kinds - riverine floods, those due to snow melt and coastal flooding due to sea level rise are increasing, and are projected to increase further. Appropriate policy changes in sectors like land, energy, industry, buildings, transport and urban development are called for to limit global warming.

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Article

**Can ‘Circular Water Economy’ uncover the Production-Consumption dynamics....? A million dollar question indeed*

By Dr. Arvind Kumar, President, India Water Foundation

“The world can maximize chances of avoiding dangerous climate change by moving to a circular economy, thereby allowing societies to meet the goals of the Paris Agreement on Climate Action. The global economy is only 9% circular - just 9% of the 92.8 billion tones of minerals, fossil fuels, metals and biomass that enter the economy are re-used annually, a key finding of The Circularity Gap Report 2019, released by the organization Circle Economy”

Understanding Circular Economy

“A circular economy is a socio-economic system aimed at wise utilisation of resources. In a circular system, resource input and waste, emission and energy leakage are minimised through appropriate design, maintenance, repair, reuse, remanufacturing, refurbishing and recycling.” The idea of circular economy is aptly in line with **Sustainable Development Goal 12** which talks about ‘**Responsible Production and Consumption**’. Being Responsible is the need of the hour and to realise efficient Water Management system, Circular Water Economy should be the incorporated norm.

Water is a key Socio-Economic factor which integrates SDGs Agenda 2030 and Paris Peace Agreement in parallel. To augment the prospects of Circular Economy, we must renew the role of Water as an **Engaged & Effective Catalyst**. This can be done by way of harnessing water as scarce resource and leveraging water as



a natural capital to as to decipher the true value of the asset i.e. water. Climate-sensitive strategies focusing on waste-to-resource conversion, Clean & Efficient energy, transformation of Grey-to-Green Infrastructure, Rain gardens or Rain water harvesting essentially revolve around circular economy.

Contrasting Circular with linear model, it can be said that “**Linear model of Water economy** has predominantly revolved around ‘**Take-Make-Consume-Dispose**’ model. Relating it to the arena of water economy, it can be thought to consider water as a natural resource is continuously being **Depleted** rather than attempting to **Replenish, Recharge, Restock and Recover (4R)**. Even our conventional wisdom allows us to consider water as a ‘Usable Natural Resource’ and not a ‘Treasure’ is a matter of concern which must be disposed off at the earliest. In a linear model, water is **sourced** from streams, rivers, lakes, reservoirs, oceans, and aquifers as well as harvested rainwater. Water is then used for **consumption** in fields of agriculture and industry. The consumed water is then **returned** to the basin directly or via municipal treatment facility to be used for consumptive use. This clearly indicates a model of parochial and short sighted vision without any long term idea of sustainability or resource conservation.

Moving away from linear model, it was later realized that waste production must undergo **3Rs** i.e. **‘Reduce, Reuse and Recycle’** along a waste hierarchy. This was an improvement over linear model but did not enclose anything concrete & comprehensive. In contrast, Circular water economy envisages an efficient and efficacy based water cycle. This model brings forth an opportunity towards **6Rs** i.e. **‘Reduce, Reuse, Refuse, Recycle, Repair and Rethink’**. The concept if appropriated with corresponding technologies is bound to reap the water utilization benefits, if the potential is properly tapped. It is also important to mention that Infrastructure surrounding circular economy is cost-effective, long term and a resilient approach to manage water needs to a larger extent.

Currently, our on-field experiences working in the **Aspirational Districts of Uttar Pradesh and Uttarakhand** by way of community engagement and stakeholder dialogue consultation has resulted in understanding the problems, challenges and future prospects which are noteworthy. Some of them to mention would include lack of proper access to potable drinking water, abysmal status of Basic infrastructure viz water, inappropriate funding patterns, uneven social access to water among community. After undertaking a bird’s eye view of the success story, opportunities and problems of the district, it can be concluded that these districts portrayed a hidden potential of ‘Sustained & Balanced Development’ which remains untapped. ***Integrating these through web of ‘6 indicators*** i.e. Education, Health & Nutrition, Basic Infrastructure, Agriculture, Water Resources, Skill Development & Financial Inclusion’ ***with water at its core will help upscale the lives of the community for the better’.***

India’s visibility in Circular water economy

With a mandated vision to meet the **goals of Sustainable Development 2030 and Paris Agreement on Climate Change**, India has strengthened its efforts to **reduce carbon footprint and improve its water footprint** by moving towards Green economy initiatives. In the field of water, initiatives like shifting to nature based energy options (solar/wind/bio-fuels), energy efficient sewage treatment plants, government actions like ‘India Cooling Action Plan (ICAP)’ or attempting to bring behavioral change through social movements of ‘Swachh Bharath Abhiyan or Clean India-Green India’.

To strengthen the prospective model of Circular Water Sustainability, enhanced focus interlinking the **triad** of “**SDG Agenda 2030, Strategy for New India @ 75 and Prime Minister’s vision of New India by 2022**” keeping in mind **‘water centrality’**. Strategies have to be learnt to harness the natural environment and develop in the most resource efficient and regenerative way. By taking account of the local environmental conditions will enable better identification of prospects & opportunities and multiple interlinking benefits. The Circular Economy lens has a large potential to change the **Demand-Supply** proposition of an economy under consideration which is bound to change the dynamics of **‘Production & Consumption’** in long term as outlined in **SDG Goal 12**.

Rather than acting on adhoc basis, we must begin with a new paradigm of moving towards **Conscious & Collaborated’** efforts envisaging water as a **‘Valuable Resource’**. Optimizing it rather than wasting, the utility of water as a valuable resource must be enhanced in our lifeline, which must definitely have a beginning from Today itself. ‘Circular Economy’ provides a hidden potential to grab the present opportunities in a very big way. The time is Ripe & Right to **#SolveDifferent** and collectively support **#ClimateChange**.

*Note: *Article published in SME World/Vol-XII/No.04 /April, 2019/P.No.16/*

Article

***Towards Resilience to Climate Change**

By Dr. Arvind Kumar, President, India Water Foundation

“Climate change has emerged as a global phenomenon entailing extensive consequences and is deemed as a ‘threat multiplier’ entailing the potential of amplifying global risks. Tackling numerous threats stemming from climate change is fraught with an array of problems of fiscal resources, governance, transnational cooperation and pressure. Deployment of fiscal and technological resources, apart from being extremely expensive, is prone to fall apart in the absence of a governance mechanism based on natural solutions. Therefore, there is a growing recognition for the need for going in for nature-based adaptive solutions to enhance resilience to climate change and ecosystem-based adaptation (EbA) is gaining salience over adaptive solutions to climate change”.

India Water Foundation (IWF), a New Delhi-based non-profit civil society, has been instrumental in getting EbA approach integrated into the State Climate Change Action Plan in the state of Meghalaya, a state located



in India’s North-East region, where IWF has been cooperating with the state government in policy-making and implementation in managing natural resources under the government’s flagship programme entitled Integrated Basin Development and Livelihoods Programme (IBDLP). Prior to implementation of IBDLP project, Meghalaya was marred by environmental degradation. Increased and unsustainable resource utilization culminating in pushing back the boundaries of forests and turning clear streams into muddy water resulting in water stress and declining water storage

capacities. Excessive mining activity created severe problems negatively impacting environment in terms of soil degradation, anthropogenic water pollution and eventually leading to the extinction of aquatic life. Absence of avian and aquatic populace made Meghalaya’s predominantly tribal hunter-communities dependent on hunting for food.

Various problems identified and tackled under this project were: risks emanating from water-induced and environment-induced vagaries in terms of insecurity of water, food and energy sectors, floods, drought, water and air pollution, erosion of land, loss of biodiversity, deforestation and loss of livelihoods, bulk of land owned by local communities etc., adversely impacting upon natural ecosystems rendering them unsustainable and socio-economic and cultural lives of the local communities.

Ecosystem based adaptation (EbA) approach adopted in Meghalaya has facilitated enhanced climate resilience, conservation of biodiversity & Eco-services. It has delivered manifold economic, social and environmental co-benefits that surpass climate adaptation and these, inter alia, include: biodiversity conservation through enhanced habitat conditions; climate mitigation through increased carbon sequestration; conservation of traditional knowledge, livelihood and practices of local communities; improved recreation and tourism opportunities; enhanced food security etc. Another thrust area under this

Project was to address the issues and challenges arising out of Jhum and Bun cultivation with active involvement of all the concerned stakeholders and community mobilization, capacity building of the stakeholders, convergence, creation of flexible and modern institutions, better delivery of services, and overall improvement in Governance. A broad platform of better governance and a high level of community participation was set up to create new and holistic initiatives to address the problem of unchecked deforestation, adopting polluters pay principle, mining and water pollution to create a circular economy.

Being convinced about the utility of EbA approach in combating vagaries of climate change, IWF as development partner of the Meghalaya basin Development Authority, Government of Meghalaya, has been instrumental in getting EbA integrated into the implementation of the IBDLP and the salutary outcomes have reinforced our convictions about the utility of EbA as an effective tool to combat the adverse impacts of climate change. It is an on-going project to envisage all-round sustainable development of Meghalaya.

EbA interventions have enabled to transform the challenge of climate variability into opportunity under Apiculture Mission and Horticulture Mission to transform barren land tracts into tea plantations and orchids. Under the Green Mission, EbA interventions have enabled in enhancing sustainable green cover, adoption of green technologies and building up a green movement thereby resulting in enhanced resilience to climate change, reduction in greenhouse gas (GHG) emissions and increased scope for alternative livelihood opportunities. EbA interventions under the Forestry and Plantation Crops Missions have led to forest conservation, enhanced forest-cover areas, sustainable agriculture, carbon sequestration, diminution in GHG emissions and environment sustainability thereby ensuing food security.

The practice of EbA brought into vogue in Meghalaya by IWF has enabled the local communities to garner multiple benefits accruing from restoration of man-made wetlands, forest conservation and sustainable forest management that have helped in carbon sequestration, improved water quality, reducing risks from natural hazards, biodiversity conservation, improvement in alternative livelihoods and poverty alleviation. Besides, it has also helped in realizing specific Sustainable Development Goals (SDGs), specifically improved livelihoods in terms of SDG-1, increased water, energy and food security in terms of SDGs 2, 6, 7, enhanced Climate Change resilience in terms of SDG-13 and augmented Biodiversity conservation and Eco-services in terms of SDG-13. 15

*Note: *Article published in ICID News/2018/Fourth Quarter*

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Miscellaneous Events

3rd April 2019

Dr Arvind Kumar, President India Water Foundation and member at the Ministry of Environment and Forests for the meeting of the Technical Advisory Committee (TAC) for India's Third National Communication and Biennial Update Reports to the United Nations Framework Convention on Climate Change (UNFCCC)



28th January 2019

Dr Arvind Kumar, President India Water Foundation and member CAPART congratulates the merger of CAPART with NIRD&PR (National Institute of Rural Development & Panchayati Raj) at the CAPART meet held at Vigyan Bhawan on. Dr Arvind Kumar acknowledged that the meeting was productive and it constructed a new pathway for rejuvenation of CAPART.

13th January 2019

Dr Arvind Kumar as member National Wetlands Committee, **MoEF&CC, GOI** visited Kolkata to discuss the permission grant of proposed elevated corridor on the East Kolkata Wetlands to be constructed by West Bengal government. It established deeper scrutiny of the proposal, a site visit and extended deliberations with the concerned authorities.



9th January 2019

A Breakfast seminar of RIS (Research and Information System) was held at RIS, New Delhi on **9th January 2019** to discuss “Development Models and Humanitarian issues’ for Developing Countries. Dr Arvind Kumar affirmed that Implementation of SDG agenda 2030 should focus on ‘the last mile delivery’.



12 December 2018

Dr Arvind Kumar had the pleasure to meet Ms Kalsang Youdon, Dr Arvind Kumar, Vice President of the Tibetan Women's Association and her colleagues. Environmental issues of present concerns of Himalayas like shrinking glaciers, endangered wildlife, water pollution, deforestation etc were shared.



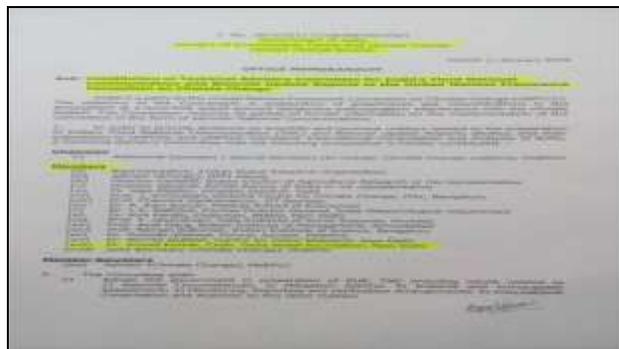
10th November 2018

Dr Arvind Kumar as a member of WWC discussed the challenges and possible prospects in water sector with Mr. Loic Fouchon President World Water Council and his colleague Mr. Kevin Chretien while identifying avenues for future synergy.



26th October 2018

As a member of Technical Advisory Committee (TAC), Dr Arvind Kumar was a part of discussions regarding India’s draft Second Biennial Update Report (#BUR) to be submitted to #UNFCCC was held at Indira Paryavaran Bhawan, Ministry of Environment Forest and Climate Change, GOI



13th October 2018

Dr Arvind Kumar, expert member of National Wetlands Committee along with various officials of NRCD, MoEF&CC, GOI discussed the preparation of guidelines for Wetlands (Conservation and Management) Rules, 2017 and underlying the importance of Wetlands, to play a significant role in the realization of the SDGs.



4-6th October 2018

Dr Arvind Kumar attended the “South Asia Forum on the Sustainable Development Goals” and “Policy Dialogue - Unlocking the Potential of Regional Cooperation in South Asia for achieving Sustainable Development Goals: The Way Forward” was held on organized by UNESCAP- SSWA office Delhi . He said it’s a unique opportunity to share perspectives on “Empowering people and ensuring inclusiveness and equality.





3rd October 2018

Dr Arvind Kumar acknowledged the privilege to witness Prime Minister Sh. Narendra Modi receiving the Champions of the Earth Award 2018 from UN Secretary General Antonio Guterres at the Pravasi Bharatiya Kendra, New Delhi.



www.indiawaterfoundation.org