

# Green Files

NEWSLETTER

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**Green Files**, our quarterly newsletter reflects environment news, events, publications and specific success story of relevant environment projects. It also highlights emerging trends, innovation, initiatives and efforts of different organizations to protect and rejuvenate the environment.

# Editorial

Green Files, a quarterly newsletter published by iCED features glimpses of recent environment news, events, publications, persons and environment projects in focus. Emerging trends, innovation, initiatives and efforts of different organizations to protect the environment also find reflection in this newsletter.

Amid the Covid-19 pandemic and related government guidelines, our training programmes were organized virtually, during the quarter July-September 2020. Five National Training programmes using MS Teams platform were conducted online on the subject Environmental Management in Indian Railways and Other Government Establishments, Audit of Climate Change and Disaster Management, Audit of Forestry and Bio-diversity Issues, Audit of Waste Management and Audit of Air Pollution and Environmental Issues associated with Transport Sector, during the same period. Also, a National Webinar on SDGs and an International Webinar on the theme “Climate Change and its implications for Sustainable Development” was organized during this quarter.

Apart from world environment news and brief about High Level Political Forum-2020, this newsletter features articles on progress of SDG targets with a 2020 deadline and Environmental pitfalls of textile and apparel industry.

We at iCED, look forward to your suggestions to make Green Files more relevant and appealing to the readers. Contributions in any form within the broad scope of the newsletter will be highly appreciated. These may be mailed to [iced@cag.gov.in](mailto:iced@cag.gov.in)

With regards,

**Manish Kumar**  
**Director General**

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## Training and Webinars at iCED

During the period July to September 2020, iCED organized five online National Training Programmes (NTPs) on following subjects:

- i. **Audit of Environmental Management in Indian Railways and Other Government Establishments**
- ii. **Audit of Climate Change and Disaster Management**
- iii. **Audit of Forestry and Bio-diversity Issues**
- iv. **Audit of Waste Management**
- v. **Audit of Air Pollution and Environmental Issues associated with Transport Sector**

A National Webinar on SDGs was organized on 11 August, 2020. Twenty Officers of SAG level and above participated in the Webinar and deliberated on various themes. Speakers shared their experiences on three topics. The themes of webinar and links are shared below:

Topic	Session Videos
Agenda 2030 and Preparedness for Implementation of SDGs	<a href="#"><u>Session 1</u></a>
Finances and Means for Implementation of SDGs	<a href="#"><u>Session 2</u></a>
Monitoring Implementation of SDGs	<a href="#"><u>Session 3</u></a>

On 23<sup>rd</sup> & 24<sup>th</sup> September, 2020, iCED also conducted one-day International Webinar on

Climate Change and its implications for Sustainable Development a joint collaboration between the SAI, India and INTOSAI Working Group on Environment Audit (WGEA). With a view to ensure participation of SAIs from different time zones, the webinar was held on two days. Webinar comprised of two thematic sessions each day. Link for the content is given below:

Themes	Session Videos
Climate Change and Sustainable Development Goals: An Overview	<a href="#"><u>Video Day 1</u></a>
	<a href="#"><u>Video Day 2</u></a>
Auditing implementation of Climate Change mitigation and adaptation: Approaches and Challenges	<a href="#"><u>Video Day 1</u></a>
	<a href="#"><u>Video Day 2</u></a>



**Figure 1- Speaker interacting with the participants during the International Webinar**

Total 82 participants from 44 SAIs participated in the Webinar. Resource persons from TERI, New Delhi; SAI Finland and SAI USA facilitated the sessions during this webinar.

 **Ajit Singh Choudhary**  
AAO, iCED



## iCED....March Towards Centre of Excellence

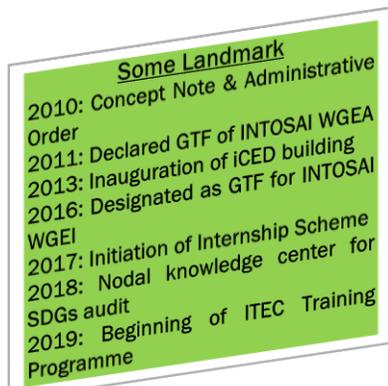
Environment and Sustainable Development are recent entrants in the domain of public discourse and policy issues<sup>1</sup>. International Centre for Environment Audit and Sustainable Development (iCED), Jaipur was established as a key institution for support on issues related to environment and Sustainable Development. Since inception, iCED has been actively pursuing various activities, which may be broadly summarized in following paragraphs:

### Knowledge Centre and Capacity Building:

Up to March 2020, iCED organized 124 and 23 no. of programmes<sup>2</sup> for 2914 national and 557 international participants respectively.

### Research and Publications:

iCED contributed in various projects/ work packages of INTOSAI WGEA <sup>3</sup>. Under internship scheme initiated since 2017, students have prepared reports on Marine Eco Tourism in Goa, Plastic and E Waste Management. iCED publishes linking of SDGs with Budget, Green Files and also contributes papers and articles<sup>4</sup>.



### Promoting environmental concerns through Audit of Environment Issues and knowledge sharing:

iCED has been actively involved in providing support to audit offices at various stages of audit process, which received renewed impetus after SOP on Audit of Environment Related Issues, by PPG Wing (December 2019). Increased references to the centre also aid in better planning for capacity building in sync with requirements of individual offices<sup>5</sup>.

### Building partnership with other organizations and engaging expertise:

iCED has developed relationship with more than 300 experts, researchers, academicians, civil servants, lawyers, private sector professionals and civil society workers.

### Recent Developments:

After brainstorming session (9-10 June 2019) chaired by CAG of India for generating new ideas to support iCED in meeting internal as well as external expectations, significant efforts are made to develop iCED.

The process of bringing domain expertise has been institutionalized through SOP on Audits related to Environment (December 2019) and

<sup>1</sup> The genesis of global approach for conservation of environment, sustainable development and sustainable development goals is traced from Stockholm Conference (1972), Rio Earth Summit (1992) and Agenda 2030 (2015) respectively.

<sup>2</sup> Trainings, Workshops and Seminars

<sup>3</sup> Greening the SAs and Environmental Assessments (2014-16) and Development of Training Tool on Environmental Data (2017-19)

<sup>4</sup> Capacity Building In Environment Audit by SAI India (ASOSAI Journal, April 2016), Greening Supreme Audit Institutions (Green lines, March 2017), 'Training for Environment Audit' (Journal of Government Audit and Accounts, August 2016), Role of SAs in implementation of

Sustainable Development Goals (ASOSAI Journal, October 2017), Role of SAs in Detection of Fraud and Corruption in ASOSAI Journal (April 2019), Capacity building: International Centre for Environmental Audit and Sustainable Development (Commonwealth Auditors General Group e-newsletter, September 2019)

<sup>5</sup> References from Central as well as State Audit offices for providing details of experts, resource persons, available materials as well as training programmes and workshops particularly during 2019 onwards on subject such as Marine Ecology, Plastic, Air Pollution, Use of Remote sensing, waste, Arid region, water, waste etc, which were duly considered in designing training programmes.

Guidelines (February 2020). MoU was signed with TERI (January 2020) for collaboration in areas related to research and joint publication; organizing seminars, workshops and conferences; exchange of research scholars/faculties and internships at iCED. MoU with IIT (Kanpur) is also under approval process. iCED has been organizing sessions on modern geo spatial software and databases with the help of experts from department of space/ technical institutions. Risk Assessment for audit planning has been initiated as per the Framework developed in 2020. iCED provides feedback on audit guideline with the help of expert<sup>6</sup>. iCED is also preparing a Guidance Note for Environmental audit on “Disaster Preparedness with respect to adverse climatic events in Coastal States/ Islands” with the help of external experts. iCED has been assigned the role of managing the Community of Practice (CoP) on Sustainable Development Goals (SDGs) on INTOSAI Community Portal (ICP)<sup>7</sup>. iCED has been designated as the nodal agency, in co-ordination with GASAB Secretariat, for all activities relating to NRA in the country, as per the Concept Paper on NRA (July 2020). iCED’s efforts towards knowledge sharing and capacity building on Sustainable Development has also been enhanced through a number of workshop and webinar held in 2020<sup>8</sup>. iCED is also involved in various work packages under INTOSAI Work Plan 2020-22<sup>9</sup> and the subject such as Air Pollution, Disaster Management and Plastics

are presently pursued under internship programme. The research report submitted by interns is also under development for use in audit.

### Way Forward:

iCED envisages to be a global centre of excellence for meeting external as well as internal expectations. Enhancing credibility of its activities and products by developing expertise through engagement of experts, collaborations and more focused research related efforts is therefore crucial. Research based inputs with multi-disciplinary focus and integrated approach of our audits oriented towards outcome is likely to enhance the acceptability of our products as well as interest of stakeholders. Given its potentials, use of recent technologies such as remote sensing, GIS and UAVs is gaining ascendance. Its usage in audit can also provide leverage for generating insights, data collection and gathering evidence besides economic, transparency and prudence related considerations. Adoption and use of these technologies in line with the Guidance Note on Usage of Remote Sensing Data and Geographic Information System for effective audits (July 2020) would further reinvigorate the agenda for capacity development at iCED alongside research and audit related activities emphasized in recent past.

 **Pushkar Kumar,**  
**Director (T&R), iCED**

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<sup>6</sup> Guidelines for Thematic Audit on "Assessment of environmental issues in RINL" (O/o DGCA, Hyderabad) and Pollution caused by Plastic (O/of the DGA (ESD)).

<sup>7</sup> An initiative of the INTOSAI Knowledge Sharing and Knowledge Services Committee (KSC) and IDI to provide a forum for the INTOSAI community.

<sup>8</sup> National webinar on “Sustainable Development Goals” for SAG and above, International Workshop on “Sustainable Development-The Concept & Audit” and International Webinar on “Climate Change and its implications for Sustainable Development” for different SAIs.

<sup>9</sup> Work Package 2, 4, 5 and 6.



## Punjab



Figure 3- State of Punjab

Punjab is located in the North Western region of India bounded on the West by Pakistan, on the North by the state of Jammu & Kashmir, on the North East by Himachal Pradesh and on the South by Haryana and Rajasthan. The state is subdivided into three parts namely Malwa, Majha and Doaba. Doaba.

Punjab has 22 districts and a population of 27.7 million, with more than 62% of the population living in rural areas (Census:

2011). The current challenges with respect to climate change in Punjab are as under:

**Water and agriculture:** Punjab has been the top food producer in the country. Vast areas have been put under extensive irrigation with exploitation of groundwater. The number of tube wells in the State has increased from 10.73 lac in 2000-01 to 14.76 lac in 2018-19<sup>10</sup>. Number of tube wells operating on electricity has increased. Groundwater consumption exceeds annual extractable sources. As per Report on the Dynamic Ground water resources of India (2019)<sup>11</sup>, Ministry of Jal Shakti the stage of ground water extraction in the state is 166%. Annual Ground Water Recharge has decreased from 25.91 to 23.93bcm and total current annual ground water extraction increased from 34.81 to 35.78 bcm vis a vis 2013 estimates. With the declining water table, farmers are shifting towards submersible pumps which are expected to raise the cost of cultivation and excessive use of groundwater making the marginal farmers vulnerable.

**Forests & Wildlife:** As per India State of Forest Report (2019)<sup>12</sup>, the forest cover in Punjab is 1,848.63 sq km which is 3.67% of

<sup>10</sup> <http://punenvis.nic.in/index2.aspx?slid=5618&mid=1&langid=1&sublinkid=935>

<sup>11</sup> <http://cgwb.gov.in/GW-Assessment/GWRA-2017-National-Compilation.pdf>

<sup>12</sup> <https://fsi.nic.in/forest-report-2019?pgID=forest-report-2019>

the State's geographical<sup>13</sup> area. Forest cover in the State has increased by 11.63 sq km as compared to ISFR (2017) mainly due to plantation and conservation activities. In terms of forest canopy density classes, the State has 8.00 sq km under Very Dense Forest (VDF), 800.97 sq km under Moderately Dense Forest (MDF) and 1,039.66 sq km under Open Forest (OF).

As per IUCN, many species of flora and fauna within and outside forests in Punjab are in different threat categories. Punjab is also facing the threat of reduction in distribution and spread of its state tree – Dalbergia sissoo (Tahli). Besides the pressures of development, the other drivers include invasion of exotic species such as Lantana and neglect of native forest species due to extensive plantation of poplar and Eucalyptus, grazing pressures, forest fires and over exploitation of forest resources. Wetland biodiversity is threatened by over diversion of water, pollution, encroachment, invasion of exotic weeds, soil erosion and wetland reclamation and due to silting and sedimentation.

Establishment of Protected Area (PA) Networks, Wildlife Sanctuaries and

Community Reserves, Biodiversity Management Committees (BMCs) and Technical Supporting Groups (TSGs), preparation of People Biodiversity Register, Declaration of biodiversity heritage sites, Crop diversification activities, Soil and Water Conservation and Wetland Conservation are some of the ongoing activities of the state that are directed towards addressing these challenges.

 **Urban Habitats:** Urban Habitats are essentially a function of the people living in them and to sustain the same through appropriate urban planning. Urban population in Punjab is concentrated in its four main cities namely; Ludhiana, Amritsar, Patiala and Jalandhar. City amenities though being upgraded continuously, are not adequate vis a vis housing, waste disposal, water supply and sanitation coverage especially in the slums and peri-urban areas. Poor water and air quality is prevalent due to industrial activities. Further, the roads and parking spaces are not enough for the ever increasing passenger vehicles.

(Source: <http://punenvis.nic.in>)

 **Virendra Jakhar**  
Sr AO, iCED

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<sup>13</sup> Interpretation of IRS Resourcesat-2 LISS III satellite data of the period Oct 2017

## NITI Aayog presented India's second Voluntary National Review at UN's High-Level Political Forum

India's second Voluntary National Review (VNR), titled- *Decade of Action: Taking SDGs from Global to Local* was presented by NITI Aayog at the United Nations High-level Political Forum (HLPF) on Sustainable Development<sup>14</sup>.

India's VNR this year has undertaken a paradigm shift in terms of embodying a "whole-of-society" approach through engagement with sub-national and local governments, civil society organizations, local communities, the private sector and people in vulnerable situations.

The report is a comprehensive account of the adoption and implementation of the 2030 Agenda in India. The report discusses at length the policy and enabling environment, India's approach to localise SDGs, and strengthening means of implementation.

The report includes knowledge and analysis that emanated from the CSO<sup>15</sup> led community-centric consultations, which took place across the length and breadth of the

country. The report includes a summary of the key concerns and the recommendations voiced by the stakeholders from civil society, non-governmental and community organisations. The report highlights the important role which businesses and the private sector are envisaged to have in the decade of action. Leveraging science, technology and innovation for SDGs and costing and financing of SDGs are the two levers of strengthening means of implementation which have been introduced this year.

The goal-wise account of progress on the SDGs has been appended with examples of a range of diverse good practices and success stories of interventions from the States, especially Aspirational Districts.

## Unique Urban Forest inaugurated at the Office of the Comptroller and Auditor General of India in New Delhi

An Urban Forest spreading over an area little over one Acre has been set up at the Office of the Comptroller and Auditor General of India in New Delhi<sup>16</sup>. The forest has 12000 saplings of 59 indigenous species which are native to the area and are three dimensional, multi-

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<sup>14</sup>[https://sustainabledevelopment.un.org/content/documents/26281VNR\\_2020\\_India\\_Report.pdf](https://sustainabledevelopment.un.org/content/documents/26281VNR_2020_India_Report.pdf)

<sup>15</sup> The Central Statistics Office (CSO) is a governmental agency in India under the Ministry of Statistics and Programme Implementation

responsible for co-ordination of statistical activities in India, and evolving and maintaining statistical standards

<sup>16</sup><https://www.pib.gov.in/PressReleasePage.aspx?PRID=1635865>

layered communities having 30 times the surface area of the greenery of single-layered lawns, and have more than 30 times the ability to protect against natural disasters and to conserve the environment.

Some of the rare native species planted include *Anogeissus pendula* (Dhonk), *Diospyros cordifolia* (Bistendu), *Ehretia laevis* (chamrod), *Wrightia tinctoria* (Doodhi), *Mitragyna parvifolia* (Kaim), *Butea monosperma* (Palash), *Prosopis cineraria* (Khejri), *Clerodendrum phlomidis* (Arni), *Grewia asiatica* (Falsa), *Phoenix sylvestris* (Khajoor) and *Helicteres isora* (Marodphali).

With minimal maintenance, including watering and de-weeding, the urban forest will be self-sustainable by October 2021. The Urban forest has an ecosystem which has the capacity to restore habitat for birds, bees, butterflies and micro fauna<sup>17</sup>.

### Delhi Electric Vehicles Policy, 2020

Government of National Capital Territory of Delhi notified Delhi Electric Vehicles Policy<sup>18</sup>, 2020 in August, 2020 with a primary objective to establish Delhi as the Electrical Vehicle capital of India and accelerate the

pace of Electric Vehicle adoption across vehicle segments, especially in the mass category of two wheelers, public/shared transport vehicles and goods carriers. The policy shall seek to drive rapid adoption of Battery Electric Vehicles (BEVs) so that they contribute to 25 per cent of all new vehicle registrations by 2024 and bring about a material improvement in Delhi's environment by bringing down emissions from the transport sector.

The policy shall remain valid for a period of three years from the date of issue. The policy focuses attention on incentivizing the purchase and use of electric two wheelers and supporting the electrification of public/shared transport and goods carriers.

### Status of Tigers Co predators & prey in India

A detailed report<sup>19</sup> on "Status of Tigers Co predators & prey in India"<sup>20</sup> was released on Global Tiger Day 2020 i.e. 29 July 2020. The report assesses the status of tigers in terms of spatial occupancy and density of individual populations across India. In addition to the summary report on the "Status of Tigers in

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<sup>17</sup> Microfauna refers to microscopic organisms that exhibit animal-like qualities. Microfauna are represented in the animal kingdom and the protist kingdom. This is in contrast to microflora which, together with microfauna, make up the microzoa

<sup>18</sup>[https://transport.delhi.gov.in/sites/default/files/All-PDF/Delhi\\_Electric\\_Vehicles\\_Policy\\_2020.pdf](https://transport.delhi.gov.in/sites/default/files/All-PDF/Delhi_Electric_Vehicles_Policy_2020.pdf)

<sup>19</sup> <https://pib.gov.in/PressReleaseDetail.aspx?PRID=1641759>

<sup>20</sup>[https://ntca.gov.in/assets/uploads/Reports/AITM/Tiger\\_Status\\_Report\\_2018.pdf](https://ntca.gov.in/assets/uploads/Reports/AITM/Tiger_Status_Report_2018.pdf)

India" (July 2019)<sup>21</sup>, this detailed report compares information obtained from the earlier three surveys (2006, 2010, and 2014) with data obtained from the 2018-19 survey to estimate population trends at country and landscape scales, patch colonization and extinction rates along with information on likely factors responsible for changes in tiger status at the fine spatial resolution of 100 km.

The report also evaluates the status of habitat corridors and highlight vulnerable areas for each landscape. The report provides information on major carnivores and ungulates regarding their distribution and relative abundance. A feather in India's cap was added with the Guinness World Records recognizing the country's efforts as the world largest camera trap survey of wildlife.

### Cabinet ratifies ban on seven chemicals that are hazardous to health & environment listed under Stockholm Convention

The Union Cabinet, on October 7, 2020 ratified ban of seven Persistent Organic Pollutants (POP's) listed under Stockholm Convention<sup>22</sup>. Considering its commitment towards providing safe environment and addressing human health risks, the Ministry

of Environment, Forest and Climate Change (MoEFCC) had notified the 'Regulation of Persistent Organic Pollutants Rules, on March 5, 2018 under the provisions of Environment (Protection) Act, 1986. The regulation inter alia prohibited the manufacture, trade, use, import and export seven chemicals namely:

-  Chlordecone,
-  Hexabromobiphenyl,
-  Hexabromodiphenyl ether and Heptabromodiphenylether (Commercial octa-BDE),
-  Tetrabromodiphenyl ether and Pentabromodiphenyl ether (Commercial penta-BDE),
-  Pentachlorobenzene,
-  Hexabromocyclododecane, and
-  Hexachlorobutadiene,

These were already listed as POPs under Stockholm Convention. The ratification demonstrates India's commitment to meet its international obligations and resolve of the Government to take action on POPs by implementing control measures, develop and implement action plans for unintentionally produced chemicals, develop inventories of the chemicals' stockpiles and review as well as update its National Implementation Plan (NIP). The ratification process would enable India to access Global Environment Facility (GEF) financial resources in updating the NIP.

 **Vijendra Singh Tanwar, AAO, iCED**

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<sup>21</sup>[https://ntca.gov.in/assets/uploads/Reports/AITM/Status\\_Tigers\\_India\\_summary\\_2018.pdf](https://ntca.gov.in/assets/uploads/Reports/AITM/Status_Tigers_India_summary_2018.pdf)

<sup>22</sup> PIB

## High-Level Political Forum- 2020 Session

First virtual High-Level Political Forum (HLPF) on sustainable development was convened<sup>23</sup> from 7 to 16 July 2020 under auspices of the Economic and Social Council (ECOSOC). Around 137 ministerial level representatives of governments along with other high-level and senior representatives as well as many stakeholders attended the forum.



**Figure 4- UN Secretary General Antonio Guterres during the High -Level Political Forum on Sustainable Development**

The Forum addressed the theme "Accelerated action and transformative pathways: realizing the decade of action and delivery for sustainable development".

The SDG Progress Report of the Secretary General was presented, which provided an overview of the world situation regarding the

SDGs, highlighted areas of progress and areas where more action needs to be taken to ensure no one is left behind and combat the impact of the COVID-19.

Forty-seven countries carried out voluntary national reviews (VNRs) of their implementation of the 2030 Agenda. During the meeting it was acknowledged that the world is not on track to deliver the Goals before the pandemic. However, it was also realized that the situation can be controlled through solidarity and foresight on financing and increasing investment in public services, including social protection, health systems, education, water, sanitation, and digital connectivity, by pursuing a recovery that builds a more inclusive, gender-responsive and environmentally sound economy. The current and future impact of the COVID-19 pandemic featured prominently in the general debate.

Multilateralism, international cooperation and global solidarity were acclaimed as essentials for finding effective, lasting solutions to COVID-19 as well as other threats to sustainable development, particularly climate change.

 **Ajit Singh Choudhary**  
AAO, iCED

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<sup>23</sup>[https://sustainabledevelopment.un.org/content/documents/269252020\\_HLPF\\_Presidents\\_summary.pdf](https://sustainabledevelopment.un.org/content/documents/269252020_HLPF_Presidents_summary.pdf)



## Performance Audit on Management of Tiger Reserves in Maharashtra

There are six<sup>24</sup> Tiger Reserves spread over five National Parks and 14 Wildlife Sanctuaries over an area of 9,116.80 sq km in Maharashtra, as shown below:



Figure 5- State Tiger Reserves in Maharashtra

The performance audit was conducted between January-June 2017 covering a period of five years, from 2012 to 2017 with the objective to assess the appropriateness of planning and resources as well as effectiveness of conservation measures,

monitoring and evaluation for proper follow-ups.

### Important Audit Findings

Delays in delineation and notification of buffer areas and in core area.

Delays in preparation of Tiger Conservation Plans. Non-availability of the plans in public domain / local language to promote public awareness.

Delays in submitting the Annual Plan of Operations (APOs) to National Tiger Conservation Authority.

Eco-tourism activities conducted without an approved Tourism plan.

Resorts/ homestays had come up near the core boundary of Tadoba Andhari Tiger Reserve without obtaining permission. In absence of Eco-Sensitive Zone notification, the commercial activities continued which caused hindrances in free movement of animal up to the water source.

The presence of human settlements, in core area along with human activities were contrary to NTCA guidelines (October, 2012) besides causing disturbance to wildlife. There were 3,494 instances of human deaths and injuries reported during 2012-18 (June 2018).

<sup>24</sup> Melghat Tiger Reserve (MTR), Tadoba Andhari Tiger Reserve (TATR), Pench Tiger Reserve (PTR), Sahyadri Tiger Reserve (STR),

Nagzira Navegaon Tiger Reserve (NNTR) and Bor Tiger Reserve (BTR)

Non-compliance with MoEF guidelines (May 2014) for insulating the transmission lines passing through National Parks, Wildlife Sanctuaries and Wildlife Corridors.

Illegal entry of unscrupulous elements.

Lack of regulation over livestock population had significant impact on tiger habitats.

Presence of feral cattle posed a serious threat to tiger conservation activities.

Functioning under dual administration contrary to the Project Tiger guidelines affected the project implementation and protection inside the tiger reserves.

Monthly reports on the deployment initiatives by the field directors were not being submitted and special trainings for skill development were not organized.

Lack of adequate infrastructure had affected regular patrolling of the protected areas. There were insufficient wireless sets and many of available set were not in working condition.

Water holes were located close to the tourist route and prescribed distances were not maintained by visitors during wildlife sighting.

#### Best Practice

For investigation, control and speedy disposal of offence cases, Wildlife Crime Cell was formed in Melghat Tiger Reserve

(October 2013). The Cell was equipped with laptops and computers for analysis of call data record, online government message facility (eSMS), video statement facility, electronic surveillance custody room (including toilet-bathroom), metal detectors and spy video and audio instruments. As a result offence cases decreased and no case regarding poaching of tigers from 2014 to 2018 were reported.

#### Recommendations

Chalking out a focused strategy for ensuring safe corridors and adequate eco-sensitive zones.

Timeliness and due diligence in preparation and implementation of Tiger Conservation Plans.

Phasing out of Human settlements and tourist facilities present in core area.

Insulation of High tension electric lines passing through tiger to avoid tiger deaths due to electrocution.

Bringing Tiger reserves under unified control to facilitate a focused approach in tiger conservation.

Provision of Global Positioning System (GPS) in tourist vehicles for regulating tourist activities in core areas.

Anil Kumar Beniwal  
Sr AO, iCED

## Kachchh Camel Breeders Association V/S Union of India & Ors.

Alleging blatant violation of the provisions of Coastal Regulation Zone Notification, 2011 (CRZ Notification) as well as Forest Conservation Act, 1980 by Deen Dayal Port Trust<sup>25</sup> (DPT), the Kachchh Camel Breeders Association (KCBA) filed an application before National Green Tribunal (NGT) in 2019. The applicant informed the tribunal mangroves in *Nani Chirai* and *Moti Chirai* areas of *Bhachau Taluka* in the district of Kachchh, Gujarat were cleared rampantly by DPT. The affected areas are known to inhabit the indigenous Kharai camel species, the source of livelihood for several indigenous people working as camel breeders.

The tribunal issued directions in September 2019, covering the following:

-  Banning obstruction of any kind in the creeks and free flow of estuarine water.
-  Joint inspection by Forest Department, GCZMA and Revenue Officials to take action against involved persons including recovery of cost of restoration, within one month.

-  GCZMA to take action immediately for any violation of CRZ Notification, 2011.

-  Forest department to take action in the mangroves area for contravention of the Forest (Conservation) Act, 1980.

-  Ban on salt manufacturing activity in CRZ - 1 area without following the due procedures.

-  GCZMA to assess the quantum of damage to the mangroves in accordance with laid down procedures and recover the amount from 20 persons responsible for it.

-  Forest Department to take immediate action to restore the mangroves.

KCBA recently filed an execution application stating non-compliance of the tribunal's judgment. It also sought directions for the rehabilitation and restitution of the mangroves and payment of compensation.

NGT issued notices on execution application to Ministry of Environment and Forest, Gujarat State Coastal Zone Management Authority and others for ensuring strict compliance of its earlier judgement. The decision is saving grace for the indigenous "swimming camels" and their mangrove habitat.

 Pavan Kumar Meena,  
AAO,iCED

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<sup>25</sup> Located on the Gulf of Kachchh on India's west coast, DPT was constructed in the 1950s and is the largest port in terms of volume of cargo handled.

## Bugun Liocichla- Bird Conservation through Community Based Reserve

The Bugun liocichla, or *Liocichla bugunorum* is a highly endangered bird species. International Union for Conservation of Nature (IUCN) has classified *Liocichla* as Critically Endangered (CR)<sup>26</sup>. The world has just 20 pairs of *Bugun Liocichla* today and all of them live in and around the Singchung Bugun Village Community Reserve and the nearby Eaglenest Wildlife Sanctuary in West Kameng district of Arunachal Pradesh.<sup>27</sup>

**Idea of Community based reserve:** In 1995, Shri Ramana Athreya, a professional astronomer, spotted a pair of birds that did not fit any description in the book he was carrying. <sup>28</sup> In 2006, Athreya formerly described the new species as Bugun



Figure 7- Bugun Liocichla

Liocichla. It was declared to be a new species



Figure 6- The Singchung Bugun Village Community Reserve (in yellow) lies adjacent to Eaglenest Wildlife Sanctuary in Arunachal Pradesh. Credit: Shreya Dasgupta/Mongabay.

of bird in 2006<sup>29</sup>. The *liocichla* was also the first bird species to be described from India in more than 50 years. The discovery instantly catapulted the bird, buguns and the forests around into international spotlight.

**Singchung Bugun Village Community Reserve:** The plan for the reserve was approved by the state government and in January 2017. It was named Singchung Bugun Village Community Reserve in order to honor the dedicated group of individuals who are ultimately responsible for maintaining the site.

**Preservation of Flora and Fauna:** The Buguns had been very careful about the cutting trees where liocichla pairs live. The community reserve has been partnering with

<sup>26</sup> <http://www.ias4sure.com/wikiias/prelims/singchung-bugun-community-reserve/>

<sup>27</sup> <https://thewire.in/environment/arunachal-bagun-liocichla-eaglenest-wildlife-sanctuary>

<sup>28</sup> <https://thewire.in/environment/arunachal-bagun-liocichla-eaglenest-wildlife-sanctuary>

<sup>29</sup> <https://www.deccanherald.com/science-and-environment/arunachal-pradesh-flags-spectacular-bird-bugun-liocichla-for-tourists-and-to-curb-poaching-807440.html>

the state forest department since 2016<sup>30</sup> in protecting and conserving the 17 sq km area of Singchung Bugun Village Community Reserve. The reserve is rich in flora and fauna with 545 species of birds<sup>31</sup> and various species of plants and animals. Red panda (*Ailurus fulgens*), Asiatic wild dogs (*Cuon alpinus*), Himalayan Black bear (*Ursus thibetanus*), marbled cat and many more are inhabitant of the reserve area. In addition, the forests harbours severely threatened plants such as the *minangmosetree* (*Gymnocladus assamicus*), Fairrie's lady slipper orchid (*Paphiopedilum fairrieianum*), and the Himalayan yew (*Taxus wallichiana*). The community has also refrained from expanding their farms too close to the camp. Many have even abandoned farms near Lama Camp primarily to avoid crop raiding elephants.

 A documentary “Wildlife Our Lifeblood”: Based on the conservation practice, a documentary has been earning nominations at various international film festivals on wildlife conservation. The film is also selected for screening at the 13th International Kuala Lumpur Eco Film Festival during 19<sup>th</sup> -25<sup>th</sup> October 2020. The National Bio Diversity Authority honored the Singchung

Bugun Village Community Reserve (SBVCR) with a citation, a memento and a cash prize of Rs one lakh. The Singchung Bugun Village Community Reserve received the India Biodiversity Award in 2018 from the Indian government and United Nations Development Programme along with award from the Arunachal state government for having the “best conserved community forests.

The Singchung Bugun Village Community Reserve is a one-of-a-kind initiative, one that can serve as a quintessence for effective conservation not only for Arunachal Pradesh and northeast India, but for community-based conservation that can safeguard India's rich biodiversity outside protected.

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<sup>30</sup><https://www.newindianexpress.com/nation/2018/may/24/arunachal-ngo-singchung-bugun-village-community-reserve-honoured-for-conserving-wildlife-resources-1818899.html>

<sup>31</sup><https://www.newindianexpress.com/nation/2018/may/24/arunachal-ngo-singchung-bugun-village-community-reserve-honoured-for-conserving-wildlife-resources-1818899.html>



## Cooperative Audit on Mediterranean Marine Parks

Seven Mediterranean Supreme Audit Institutions (SAIs), members of the EUROSAI WGEA namely; Albania, Cyprus, France, Greece, Malta, Portugal and Slovenia participated in a cooperative audit entitled, “Are adequate mechanisms in place for the designation and effective management of Marine Protected Areas (MPAs) within the Mediterranean Sea?. This cooperative audit based its findings and conclusions on seven individual national audit reports. These national reports considered MPAs to entail a delineated marine site in their own countries. The main objective of a MPA is to conserve and nurture the marine biodiversity while striking a balance with any economic activity permitted in the area.

The aim of audit was to determine the effectiveness in conserving marine biodiversity to attain the targets set in national legislation and international protocols. The participating SAIs compiled an audit design matrix based on regulatory framework, strategies, site assessments, management plans and surveillance efforts.

### Conclusions

The Mediterranean Sea encompasses the coast of 21 countries, covering 2.5 million km. While the protection of coastal waters is seen

as a national issue, measures such as MPAs has cross-border dimension. MPAs aim to attain, as far as possible, an equilibrium between economic activities and the conservation of the marine eco systems. The 14<sup>th</sup> UN Global Goal for Sustainable Development relates to life below water and is particularly relevant.

 The audit revealed that the legal framework regulating the designation and management of MPAs and enforcement of measures is comprehensive and largely mandates national authorities. However, as the international legal framework has evolved over a period of 32 years, it is unavoidably very broad and in some cases is conducive to operational complexities and overlap. Moreover, the legal framework does not provide a uniform definition of what constitutes a marine protected area, but rather provides a range of interrelated definitions. This implies that countries are using the term MPA as an all-encompassing phrase relating to any type of marine protection status.

 SAIs acknowledged the enabling role of strategic framework, but weaknesses were identified within the strategic framework, mainly relating to the fragmentation of national strategies, generic references to

outputs, outcomes and impact of initiatives, the absence of action plans.

 Resource allocation, technical limitations and diplomatic issues hindered participating countries from broadening the scope of their respective studies.

 SAIs presented mixed results with respect to the adoption of site-specific management plans: technical and logistical limitations and absence of management plans.

 Audit identified a number of good practices relating to the monitoring and enforcement of specific MPAs.

 Majority of participating SAIs noted that mitigating and dealing with threats to MPAs remains problematic due to absence of site-specific management plans, weaknesses in administrative capacity and problems in the proper coordination.

It was acknowledged that designating, managing and enforcing the regulatory framework concerning MPAs is a complex matter, involving many competing interests and necessitating that governmental entities allocate significant resources.

### Recommendations

The following recommendations were proposed by the report-

1. A common definition of what constitutes a Marine Protected Area to enhance cross-

jurisdiction cooperation, to facilitate data collection and to enable countries to better gauge their performance in the designation and management of MPAs through comparative analysis and set benchmarks.

2. To establish Specially Protected Areas of Mediterranean Importance (SPAMI) within the Mediterranean high seas to further extend the network of marine protected areas within the Mediterranean.

3. Strengthening of strategic framework relating to MPAs to enable the expedient implementation of the measures. To this effect, national strategies are to refer to the expected outputs, outcomes and impacts of the strategic objectives. Furthermore, where necessary, action plans should be drawn up to reflect the strategic vision and subsequently allocate the necessary resources.

4. Compilation of site-specific management plans as a matter of priority to encourage national authorities to embark on proactive approaches to ascertain the sustainability of the designated MPAs.

5. Compilation of site-specific monitoring and enforcement plans embraced with risks analysis principles for more effective and transparent enforcement.

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## Progress of SDG Targets on Biodiversity with 2020 Deadline

The 2030 Agenda for Sustainable Development, adopted by United Nations in 2015 provides a shared blueprint for peace and prosperity for people and the planet, now and into the future. Biodiversity and ecosystems feature prominently across almost of the 17 Sustainable Development Goals (SDGs) and their associated targets.<sup>32</sup> Interdependence between SDGs and Strategic Plan for Biodiversity (2011-2020) has been recognized by Conference of the

Parties (CoP) to the Convention on Biodiversity.<sup>33</sup> CoP also emphasized on an integrated approach to the implementation of the strategies and plans for the 2030 Agenda and national biodiversity strategies and actions plans. By the end of 2020, 21 out of the 169 SDG targets would mature. Of these 21 targets, 12 are linked to the United Nations Convention on Biological Diversity Aichi Biodiversity Targets.<sup>34</sup> The status of 12 targets are given below:

AN OVERVIEW OF PROGRESS OF SDG TARGETS RELATED TO BIODIVERSITY DUE TO MATURE IN 2020						
SDG Target	Aichi Target	SDG	Global Progress <sup>35</sup>	Progress in India		
				National Indicators	Progress <sup>36</sup>	
					Year	Value
2.5	13, 18	Maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species.	Progress has been negligible in maintaining plant and animal genetic diversity for food and agriculture. A per reports, 73 per cent of assessed breeds are at risk of extinction. At the end of 2019, global holdings of plant genetic material conserved in gene banks totaled 5.4 million samples, a 1.3 per cent increase from 2018.	2.5.1: Number of accessions conserved in the base collection (-18 Degree Celsius) at National Gene Bank	2015	419312
					2016	430573
					2017	434946
					2018	439717
				2.5.2: Conservation of germplasm, 2015-16 (in number)	75563	
2.5.3: Conservation of fish genetic resource (in number)	Under Compilation					

<sup>32</sup> biodiversity-2030-agenda-technical-note-en

<sup>33</sup> <https://www.cbd.int/doc/decisions/cop-13/cop-13-dec-03-en.pdf>

<sup>34</sup> <https://unstats.un.org/sdgs/report/2020/progress-summary-for-SDG-targets/>

<sup>35</sup> <https://unstats.un.org/sdgs/report/2020/progress-summary-for-SDG-targets/>

<sup>36</sup> [http://www.mospi.gov.in/sites/default/files/publication\\_reports/SDGProgressReport2020.pdf](http://www.mospi.gov.in/sites/default/files/publication_reports/SDGProgressReport2020.pdf)

6.6	11, 14, 15	Protect and restore water-related ecosystems	Water-related ecosystems have maintained a consistent spatial area since the base line reference year 2000. For other water-related ecosystems, including wetlands, groundwater and open water bodies, <b>global-level data is not yet currently available.</b>	6.6.1: Percentage of blocks/mandals/taluka over- exploited, (in percentage)	<b>Year</b>	<b>Value</b>
					2011	16.20
					2013	15.70
				6.6.2: Percentage sewage load treated in major rivers	Under Compilation	
			6.6.3: Biological assessment information of surface water bodies.	Under Compilation		
12.4		Achieve environmentally sound management of chemicals and all wastes and significantly reduce their release to air, water and soil to minimize their adverse impacts on human health and the environment	Parties continue to meet their commitments as required by multilateral environmental agreements in the chemicals and waste cluster, in particular for the Basel, Rotterdam and Stockholm conventions. However, between 2010 and 2019, environmentally sound recycling of e- waste increased at a much slower pace.	12.4.1: Developing national secondary resource policy framework	Under Compilation	
				12.4.2: Development of national policy for environmentally sound management of hazardous chemical and waste	Under Compilation	
				12.4.3: Implementation of National Action Plan for fulfilling obligations of various Multilateral Environmental Agreements (MEA) ratified	Under Compilation	
14.2	6, 11, 15	Sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts.	The global Ocean Health Index appears to have been static over the last eight years. Some regions have low scores on ocean health that are likely worsening.	14.2.1: Percentage change in area under mangroves, (similar to Indicator 14.5.2)	<b>Year</b>	<b>Value</b>
					2015 over 2013	2.43
					2017 over 2015	3.82
					2019 over 2017	1.10
			14.2.3: Percentage change in Marine Protected Areas (MPA)	Under Compilation		
14.4	2, 3, 4, 6, 7, 12, 19	Effectively regulate harvesting and end overfishing, illegal, unreported and	The sustainability of global fishery resources continues to decline, although at a reduced rate.	14.4.1: Maximum Sustainable Yield (MSY) in fishing, (in Million Tonne/Year)	<b>Year</b>	<b>Value</b>
					2015-17	3.7083

		unregulated fishing and destructive fishing practices and implement science-based management plans.			2017-18	5.3105			
14.5	5, 11	Conserve at least 10% of coastal and marine areas, consistent with national and international law and based on the best available scientific information	The global mean percentage of each marine KBA covered by protected areas increased from 30.5 per cent in 2000 to 46.0 per cent in 2019, but the majority of these sites still have incomplete or no coverage by protected areas.	14.5.1: Coverage of protected areas in relation to marine areas.	Under Compilation				
					14.5.2: Percentage change in area under mangroves, (similar to Indicator 14.2.1)	<b>Year</b>	<b>Value</b>		
						2015 over 2013	2.43		
						2017 over 2015	3.82		
					2019 over 2017	1.10			
14.6	3, 4	Prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies.	As of February 2020, the number of parties to the Agreement on Port State Measures -increased to 66 (including the European Union) from 58 the previous year. Close to 70 per cent of countries reported high scores in implementing the Agreement.	National Indicator is under development					
15.1	4, 5, 7, 11, 14, 15	Ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in line with obligations under international agreements	In 2020, there is an increase of 12 to 13 percentage points since 2000. However, the majority of Key Biodiversity Areas still have incomplete or no coverage by protected areas. Moreover, since 2010, the increase in coverage has slowed considerably compared with the previous decade	15.1.1: Forest cover as a percentage of total geographical area, (in percentage)	<b>Year</b>	<b>Value</b>			
					2015	21.35			
					2017	21.54			
								2019	21.67
				15.1.2: Protected area as percentage of total geographical area, (in '000 sq.km.)	<b>Year</b>	<b>Value</b>			
					2015	48.477			
2017	48.497								
				2019	48.754				
15.2	4, 5, 7, 14, 15	Promote the implementation of sustainable management of all types of forests, halt	The world's forest area continues to shrink, although at a slightly slower pace than in previous decades. While forest loss	15.2.1: Percentage change in Forest Cover	<b>Year</b>	<b>Value</b>			
					2015 over 2013	0.54			

		deforestation, restore degraded forests and substantially increase afforestation and reforestation globally	remains high, the proportion of forests in protected areas and under long-term management plans, as well as certified forest area, increased or remained stable at the global level and in most regions of the world.		2017 over 2015	0.97
					2019 over 2017	0.56
				15.2.2: Total area covered under different afforestation schemes (in Hectare)	<b>Year</b>	<b>Value</b>
					2015-16	13,81,596
					2016-17	19,90,409
					2017-18	16,88,507
				15.2.3: Tree cover as percentage of total geographical area	<b>Year</b>	<b>Value</b>
					2015	2.82
					2017	2.85
					2019	2.89
<b>15.5</b>	5, 12	Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species	Globally, species extinction risk has worsened by about 10 per cent over the last three decades, with the Red List Index declining from 0.82 in 1990 to 0.75 in 2015, and to 0.73 in 2020 (a value of 1 indicates no threat to extinction and a value of 0 indicates all species are extinct).	15.5.1: Red List Index	Under Compilation	
<b>15.8</b>	9	Introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species	The overall rate of biological invasions shows no sign of slowing down, with growth in both the number of invasive species and their spread due to increased trade and transport.	15.8.1: Percentage change in prevention and control of invasive alien species	Under Compilation	
<b>15.9</b>	2	Integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts	Out of 113 parties who assessed progress this target, about half of the parties made progress. But pace of developments will not allow them to achieve goals by 2020.	15.9.1: Progress towards national targets established in accordance with Aichi Biodiversity Target 2	Under Compilation	

Globally there has been slow, but positive progress for some biodiversity related SDG targets viz; SDG 12.4, 14.6 and 15.9. However, globally there has also been decline in progress towards achievement of SDG targets related to biodiversity (SDG 14.3, 14.4, 15.1, 15.2, 15.5, and 15.8). In India, steady progress has been reported in forest cover and protected area since 2015, total land under afforestation schemes and tree cover.

#### Missing indicators and data insufficiency

Data insufficiency is a major challenge. For SDG target 6.6 there is no global-level data available for assessment. The same can be noticed for water-related ecosystems, including wetlands, groundwater and open water bodies in India. There is also lack of data on targets regarding Red list index, invasive alien species and progress towards national targets established with Aichi Biodiversity Target 2.

Data of all the national indicators of target 12.4, for India, are under compilation. In fact, data for 12 of the National Indicators for SDG targets which are going to mature in 2020, are still under compilation, which includes SDG 14.6 for which no National Indicator has been determined so far. With the year 2020 approaching its fourth quarter, there is not much time left to achieve the targets.

The crunch for data in India can be assessed from the fact that, as per India's Voluntary National Review (VNR) on SDGs, the National Indicator Framework (NIF) did not include indicators for many targets. One of the main reasons behind the missing indicators is that the statistical system has not been collecting data that corresponds to the new challenges put forward by the SDG framework. This includes data on responsible consumption and production, which is a key SDG target which complements various other SDG targets. The VNR 2020 report on SDGs emphasized on conducting relevant surveys regularly at shorter intervals for data inputs. The review report has also underlined the importance of collection and presentation of state-level data disaggregated by gender, social category, income groups among others for sharper SDG monitoring and focused policy advice. It is pertinent that the missing indicators should be identified or designed, following a consultative process, and added to the National Indicator Framework (NIF) to ensure complete reporting and monitoring of the SDGs. Also, modern tools and technologies of data collection such as mobile phones, geospatial data and utilizing and mainstreaming citizen-generated data may be used for improved data collection.

## Way Forward

Apart from working on the data front, efforts are essentially required on redesigning the policy approach. On a global front, given the value of these targets to the success of the SDGs, a decisive action is to be sought by active stakeholders. Relevant actors for 2020 SDG targets are United Nations General Assembly, The Economic and Social Council, High Level Political Forum, 2<sup>nd</sup> Committee of UNGA, and the Convention of Biological Diversity. A clear decision-making process agreed by such parties is critical and highly essential, to ensure coherent transition on the

targets maturing in 2020 to ensure that they are in consonance with the ambition and deadline of the 2030 Agenda. Lack of effective engagement on the maturing 2020 environment targets, may further jeopardize the delivery of all the other SDGs.

The 15th Conference of the Parties to the CBD (CBD COP-15) due in China in October 2020, may become a crucial platform, by which, the parties can work on agreeing about a post-2020 framework.<sup>37</sup>

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<sup>37</sup>[http://d2ouvy59p0dg6k.cloudfront.net/downloads/discussion\\_paper\\_options\\_for\\_maturing\\_2020\\_environment\\_targets\\_final\\_1.pdf](http://d2ouvy59p0dg6k.cloudfront.net/downloads/discussion_paper_options_for_maturing_2020_environment_targets_final_1.pdf)



## Environmental Pitfalls of Textile and Apparel Industry

According to United Nations Environmental Program (UNEP), the fashion sector - comprising textile and apparel creation and production is the second largest global economic activity in terms of trade. The global sector is valued at \$1.44 trillion<sup>38</sup>.

Since ancient times, methods of textile production have evolved and influenced how people carried their possession and clothed themselves. One consequence of fast fashion <sup>39</sup> has been an explosion in consumption accompanied by increased waste. The textile and apparel industry has a big environmental impact in every phase of product life cycle.

The fashion industry is one of the major polluting industries in the world. The textiles industry relies mostly on non-renewable resources - 98<sup>40</sup> million tonnes in total per year -to produce synthetic fibers, fertilizers to grow cotton, and chemicals to

produce, dye, and finish fibers and textiles. More than USD 500<sup>41</sup> billion of value is lost every year due to clothing underutilization and the lack of recycling.

On a global average, every person buys 5kg of clothes per year, but in Europe and the USA the figure is as high as 16kg<sup>42</sup>. Overall apparel consumption is projected to rise even further, from 62 million tonnes in 2015 to 102 million tonnes in 2030<sup>43</sup>. This projected increase in global fashion consumption will create further environmental stress and risks. By 2030<sup>44</sup>, it is predicted that the industry's water consumption will grow by 50 percent to 118 billion cubic meters (or 31.17 trillion gallons), its carbon footprint will increase to 2,791 million tonnes and the amount of waste it creates will hit 148 million tons.<sup>45</sup>

At present, many of the key cotton-producing countries are under high water stressed, including China, India, USA, Pakistan, and Turkey. In China, 80% to 90% of fabric<sup>46</sup>, yarn, and plastic-based fibers are made in water-scarce or water-stressed regions.

<sup>38</sup><http://www.ijims.com/uploads/b71b53a1a196ea5f111a155.pdf>

<sup>39</sup> Fast fashion can be defined as cheap, trendy clothing that samples ideas from the catwalk or celebrity culture and turns them into garments in high street stores at breakneck speed to meet consumer demand.

<sup>40</sup>[https://www.ellenmacarthurfoundation.org/assets/downloads/publications/A-New-Textiles-Economy\\_Full-Report.pdf](https://www.ellenmacarthurfoundation.org/assets/downloads/publications/A-New-Textiles-Economy_Full-Report.pdf)

<sup>41</sup> [https://www.ellenmacarthurfoundation.org/assets/downloads/A-New-Textiles-Economy\\_Full-Report\\_Updated\\_1-12-17.pdf](https://www.ellenmacarthurfoundation.org/assets/downloads/A-New-Textiles-Economy_Full-Report_Updated_1-12-17.pdf)

<sup>42</sup> [https://www.oebu.ch/admin/data/files/section\\_asset/file\\_de/2422/2017\\_changing\\_fashion\\_rating\\_and\\_innovation\\_report\\_e\[1\].pdf?lm=1506581817](https://www.oebu.ch/admin/data/files/section_asset/file_de/2422/2017_changing_fashion_rating_and_innovation_report_e[1].pdf?lm=1506581817)

<sup>43</sup> [https://globalfashionagenda.com/wp-content/uploads/2017/05/Pulse-of-the-Fashion-Industry\\_2017.pdf](https://globalfashionagenda.com/wp-content/uploads/2017/05/Pulse-of-the-Fashion-Industry_2017.pdf)

<sup>44</sup> <https://www.thefashionlaw.com/can-the-fashion-industry-ever-really-be-sustainable/>

<sup>45</sup> <https://www.thefashionlaw.com/can-the-fashion-industry-ever-really-be-sustainable/>

<sup>46</sup> <https://www.theconsciouschallenge.org/ecologicalfootprintbibleoerview/water-clothing>

Washing clothes, meanwhile, releases 500,000 tons<sup>47</sup> of microfibers into the ocean each year – the equivalent of 50 billion plastic bottles. Many of those fibers are polyester, a plastic found in an estimated 60% of garments. Producing polyester releases two to three times more carbon emissions than cotton, and polyester does not break down in the ocean. A 2017 report <sup>48</sup> from the International Union for Conservation of Nature (IUCN) estimated that 35% of all micro plastics in the ocean came from the laundering of synthetic textiles like polyester. Factories use polyvinyl chloride to size fabrics, chlorine bleach to lighten a fabric's color, benzidine and toluidine as dyeing agents and flame retardants that are known cancer-causing agents. Releasing this untreated chemical wastewater brew can pollute waterways and groundwater sources. Water use and pollution lead to increased environmental stress at the water basin level, particularly in apparel producer countries such as India and China, which are already suffering from medium or high levels of water stress and water pollution. The textile industry

is the second greatest polluter of local freshwater in the world.

As textiles move through the production process, numerous life-threatening pollutants left untreated can contaminate the air. Factory boilers that heat the water release nitrous oxides and sulphur dioxides. Carbon monoxide is released from factory sizing operations. These toxic vapors would remain suspended in the air and be carried by the wind to pollute other areas.

Textile manufacturing operations create large amounts of toxic and nontoxic solid waste. Fibers, hemp, yarn and fabrics are solid waste that are created directly from production lines. In addition, the industry produces 2.1 billion tonnes<sup>49</sup> of waste such as disposed clothing or off-cuts each year, of which only 20 per cent is recycled.

### Initiatives taken up at international level for sustainable fashion

 **United Nations Alliance for Sustainable fashion** <sup>50</sup> : UN commits to changing the path of fashion, reducing its environmental and social impacts; and turning fit into a driver of the implementation of the Sustainable Development Goals.

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<sup>47</sup> <https://www.weforum.org/agenda/2020/01/fashion-industry-carbon-unsustainable-environment-pollution/>

<sup>48</sup> <https://www.businessinsider.in/science/news/the-fashion-industry-emits-more-carbon-than-international-flights-and-maritime-shipping-combined-here-are-the-biggest-ways-it-impacts-the-planet-/articleshow/71640863.cms>

<sup>49</sup> <https://www.sgtgroup.net/textile-quality-management-blog/sustainable-fashion-transformation-recycling-and-reuse>

<sup>50</sup> <https://www.unenvironment.org/news-and-stories/story/putting-brakes-fast-fashion>

 **Clean by Design NRDC**<sup>51</sup>: National Research and Development Corporation's Clean By Design initiative works with major apparel retailers and brands by using their buying power as leverage to clean up the factories in their supply chains. Today, more than 100 mills<sup>52</sup> benefit from the Clean by Design program.

 In December 2017, the United Nations climate change secretariat invited a range of fashion sector representatives to convene to participate in the **Climate Action Dialogue**<sup>53</sup>.

 In 2016<sup>54</sup> **Adidas** launched their **Sustainability Roadmap for 2020**, which translates the company's sustainable efforts into tangible goals and measurable objectives until 2020. The achievements include plastic bag free stores, global plastic free offices, delivering their commitment to become 99% free of poly- and per fluorinated substances (PFCs) and creating five million pairs of shoes containing ocean plastics.

## Conclusion

The clothing and textile industry needs to find a way which allows it to respect the ecological boundaries of our planet and its limited resources. It calls for ethical consumption<sup>55</sup>.

Sustainable or ethical fashion is a response to the environmental and social devastation brought by conventional production techniques. Ethical consumption can and will lead to a paradigm shift in behaviour. This might serve to minimize the need to make new purchases of the latest fashion fad, therefore reducing impacts. This approach would also take the industry, and the world, closer to achieving the universal Sustainable Development Goals by 2030.

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<sup>51</sup> <https://www.nrdc.org/issues/encourage-textile-manufacturers-reduce-pollution>

<sup>52</sup> <https://apparelcoalition.org/collaboration-impact-nrdc/>

<sup>53</sup> <https://inmotion.dhl/en/fashion/white-paper/>

<sup>54</sup> <https://inmotion.dhl/en/fashion/white-paper/>

<sup>55</sup> <https://www.thefashionlaw.com/can-the-fashion-industry-ever-really-be-sustainable/>

## **International Tiger Day, July 29 2020**

**10 interesting facts about tigers on (India Today)**

Tiger cubs are born blind and attain clear vision after 6-8 weeks of birth.

Tigers are the largest wild cats in the world and can weigh up to 363 kilograms

Tigers live alone and aggressively scent-mark large territories to keep their rivals away

No two tigers have the same stripes.



The average life span of a tiger in the wild is about 11 years.

No two tigers have the same stripes.

At full speed, tigers can reach up to 65km/h

Tigers can climb trees under stress!

There were eight tiger subspecies at one time, but three became extinct during the 20th century.

Tigers are good swimmers!