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GLOBAL TAXONOMY INITIATIVE FORUM
Online, 2-4 December 2020

REPORT OF THE GLOBAL TAXONOMY INITIATIVE FORUM 2020

INTRODUCTION

1. The Global Taxonomy Initiative (GTI) Forum 2020 was held online from 2 to 4 December 2020,[1] using the GoToWebinar virtual platform. The Forum was organized and co-hosted by the Government of Germany, through the Museum für Naturkunde in Berlin, and the Secretariat of the Convention on Biological Diversity, with generous financial support from the Government of Japan through the Japan Biodiversity Fund. It consisted of an opening symposium on "Best practices and challenges of the GTI in achieving the Aichi Biodiversity Targets", followed by two days of workshops/presentations. Discussions held at the Forum will be captured in a technical document to inform discussions at the third meeting of the Subsidiary Body on Implementation.

2. The participants in the Forum consisted of 18 selected delegates[2] as well as over 200 self-registered participants. The list of participants can be found in annex I below. Recordings of the meeting are available at https://www.cbd.int/article/the-global-taxonomy-initiative-forum-2020/.

ITEM 1. OPENING OF THE GLOBAL TAXONOMY INITIATIVE FORUM

3. The Forum was opened by the Executive Secretary of the Convention on Biological Diversity, Ms. Elizabeth Maruma Mrema, at 8 a.m. EST on 2 December 2020. The Executive Secretary stressed that capacity in taxonomy was important for implementation by Parties of the post-2020 global biodiversity framework as biodiversity was disappearing with unprecedented speed due to human activities. She highlighted how experts in that domain and taxonomic capacity were necessary during crises, such as the COVID-19 pandemic, and to "build back better" our societies towards the 2050 Vision for Biodiversity, "living in harmony with nature."

4. The Deputy Head of Division, International Cooperation on Biodiversity, Federal Ministry for the Environment, Nature Conservation and Nuclear Safety of Germany, Mr. Ralf Becker, delivered welcoming remarks on behalf of the Government of Germany, co-host of the Forum. He highlighted European and German programmes that were addressing the taxonomic impediment, and expressed willingness to support capacity development through the GTI under the post-2020 global biodiversity framework.

5. The Director-General, Nature Conservation Bureau, Ministry of the Environment of Japan, Mr. Toshio Torii, conveyed greetings to the Forum via video message. He stressed the importance of taxonomy and highlighted regional and global programmes across the Asia-Pacific region that were implementing the GTI through support from the Japan Biodiversity Fund and others. The Director-General also stated that taxonomy and relevant databases would be important for monitoring the progress of the implementation of the post-2020 global biodiversity framework.

[1] Notification 2020-089.

[2] See notifications 2020-016 and 2020-031.

ITEM 2. ORGANIZATIONAL MATTERS

6. Ms. Junko Shimura of the Secretariat introduced the Museum für Naturkunde, Berlin, as the co-organizing institution of the Forum with the Government of Germany. After discussion among all participants, Mr. Christoph Häuser of the Museum für Naturkunde, Berlin, was elected chair of the Forum.

7. The Secretariat introduced the provisional agenda (CBD/GTI/OM/2020/1/1) for the Forum, which was approved by all participants.

ITEM 3. SYMPOSIUM ON "BEST PRACTICES AND CHALLENGES OF THE GLOBAL TAXONOMY INITIATIVE IN ACHIEVING THE AICHI BIODIVERSITY TARGETS"

8. The first speaker, Mr. Paul Hebert, a professor at the University of Guelph and Director of the Centre for Biodiversity Genomics, in Canada, presented via video on the International Barcode of Life (iBOL) Consortium, which had completed its five-year goal of generating DNA barcode sequences for 500,000 species and sharing the information in the public domain by 2015. The Consortium-led BIOSCAN programme was currently under way around the world to advance species discovery, document species interactions and track species dynamics for a planetary biodiversity surveillance system that would aid biodiversity monitoring and inform biodiversity management in broad sectors.

9. Mr. Thomas von Rintelen of the Museum für Naturkunde, Leibniz Institute for Evolution and Biodiversity Science in Germany gave a presentation on research and collection-based capacity-building in South-East Asia, including Indonesia, Viet Nam, the Philippines and Cambodia, through the bilateral aid programme of Germany. He showed various collaborations undertaken by research scientists in Germany with researchers and technicians in South-East Asia and highlighted that human resource development and infrastructure development made capacity-building successful and sustainable.

ITEM 4. GLOBAL TAXONOMY INITIATIVE 2021-2030 ACTIVITIES TO SUPPORT THE ACHIEVEMENT BY PARTIES OF THE POST-2020 BIODIVERSITY TARGETS AND THE GLOBAL BIODIVERSITY FRAMEWORK

10. The following presentations were made by designated speakers:[3]

(a) "Findings of the fifth edition of the *Global Biodiversity Outlook* and advice on capacity development in taxonomy", by Mr. Tim Hirsch, Global Biodiversity Information Facility (GBIF). Mr. Hirsch described the extensive collection and mobilization of biodiversity data through GBIF and its contributions to the achievement of Aichi Biodiversity Target 19 and others, such as Targets 9, 11 and 13. Areas of work in which taxonomic capacity was essential in supporting the key transitions described in the fifth edition of the *Global Biodiversity Outlook* were highlighted in agriculture, freshwater, the cities and infrastructure sectors, and One Health;

(b) "Application of DNA barcoding and meta-barcoding in conservation and sustainable use of biodiversity", by Mr. Donald Hobern (on behalf of Mr. Paul Hebert), International Barcode of Life (iBOL) Consortium. Mr. Hobern emphasized that sequencing technologies, such as DNA barcoding and metabarcoding, were tools in support of the GTI that were cost-effective and flexible and could provide the large-scale, repeatable information that the world needed to support global conservation. New activities, such as surveying ecoregions around the world, were being implemented to establish baseline values for biodiversity indicators;

(c) "The Consortium of European Taxonomic Facilities (CETAF): a collaborative network for collections and taxonomy", by Ms. Michelle Price, Head of Science and Curator at the Conservatory and Botanical Garden, Geneva, and Councillor of the International Association for Plant Taxonomy (IAPT). Ms. Price presented how institutional connections and pooling of resources could support progress towards biodiversity targets. She explained that promoting scientific research and access to natural history collections, forming institutional partnerships for funding opportunities, and training with the use of remote

[3] Notification 2020-031.

and distributed electronic learning all promoted cross-disciplinary interactions that were necessary to grow biodiversity understanding and generate evidence-based indicators;

(d) "In support of achievement of post-2020 biodiversity targets: achievements and further needs in Africa", by Mr. Ramagwai Sebola, Chief Director, Foundational Biodiversity Science, at the South African National Biodiversity Institute. Mr. Sebola presented the completion of taxonomic inventories for South African flora and fauna, which had allowed for the identification of priority species for conservation; the human capacity development strategy to involve youth and partner organization across sectors; and national biodiversity data mobilization efforts. He highlighted ongoing challenges, such as poor data sharing, ineffective coordination across the African continent, and the lack of adequate and appropriate technologies;

(e) "Good practices and recommendations from the Belgian GTI Focal Point", by Ms. Jolien Venneman, Science Programme Officer, Royal Belgian Institute of Natural Sciences. Ms. Venneman presented the work conducted by the Institute's Capacities for Biodiversity and Sustainable Development (CEBioS) programme to strengthen conservation and taxonomic capacities in partner countries through training and research grants. Outputs such as the discovery of new species, publication of taxonomic volumes, and writing of policy briefs for decision makers were highlighted, as well as the need for these outcomes to be supported by sustained funding and further investments in digital information;

(f) "GTI in the Bahamas", by Mr. Ethan Freid, Bahamas National Trust and Leon Levy Native Plant Preserve. Mr. Freid described work undertaken by the Bahamas National Trust and the Leon Levy Native Plant Preserve, including development of a living collection of endemic species and a biodiversity awareness, outreach and education campaign that had led to publication of a field guide and other initiatives;

(g) "World Flora Online, building a taxonomic resource in global partnership", by Mr. Thomas Borsch, Botanical Garden and Botanical Museum of Berlin, Free University of Berlin, Germany. Mr. Borsch presented the World Flora Online, which provided validated plant biodiversity information to support plant conservation. He highlighted that the digitization of specimens and literature, and capacity-building with joint research projects, had facilitated the realization of this taxonomic resource. He noted that international collaboration networks and continued investment were imperative;

(h) "Catalogue of species in Mexico: National Biodiversity Information System", by Ms. Diana Hernandez, National Commission for the Knowledge and Use of Biodiversity (CONABIO), Mexico. Ms. Hernandez presented on projects and approaches to record the species in Mexico to increase the knowledge, conservation and sustainable use of the country's biodiversity. Initiatives were filling information gaps on national Red List species, generating a system of information on invasive alien species to support in the implementation of national and regional programmes, and providing a public and up-to-date online catalogue of national collections;

(i) "GTI 2021-2030 activities to support the achievement by Parties of the post-2020 biodiversity targets and the global biodiversity framework", by Mr. Haining Qin, Institute of Botany, Chinese Academy of Sciences, China. Mr. Qin described the country's initiatives to establish a platform for sharing biodiversity data with an annual species checklist, to centralize biodiversity information through a national authority information centre, and to involve civil society in taxonomy to facilitate informed decisions;

(j) "Training a new generation of biosystematists to meet society's needs for biodiversity expertise", by Mr. Hugo de Boer, Natural History Museum, University of Oslo, Norway. Mr. de Boer presented capacity development conducted by Norway, including the establishment of the Norwegian Biodiversity Information Centre, with a dedicated national taxonomic initiative, and a research school in biosystematics. Important capacity development was integrating taxonomic knowledge across generations and into industry and the private sector. The Norwegian Environment Agency had commissioned reports for the use of environmental DNA and genomic approaches for environmental consultations. Through integration of those techniques into national laws, the importance of taxonomic capacity was being valued and reinforced;

(k) "Taxonomy initiative in Viet Nam", by Ms. Anh Thi Kieu Ta, Nature and Biodiversity Conservation Agency, Viet Nam Environment Administration, Ministry of Natural Resources and Environment, Viet Nam. Ms. Ta presented the development of the National Biodiversity Database System to connect with GBIF and the Catalogue of Life. Taxonomic efforts were being implemented in national parks and would be expanded to provinces to identify and record all species in Viet Nam for conservation and sustainable development;

(l) "GTI experiences from the UK", by Mr. Mark Watson, Royal Botanic Garden Edinburgh, United Kingdom of Great Britain and Northern Ireland. Mr. Watson presented capacity-building activities addressing the taxonomic impediment through education, institutional capacity-building and bilateral and multilateral partnerships in Nepal and with Japanese organizations. He highlighted the fact that United Kingdom institutes strongly supported digital and online systematic services, and that taxonomic initiatives needed to be long-term with continued financial support in order to maintain the taxonomic skills developed;

(m) "Biodiversity in Turkmenistan", by Mr. Aleksandr Aleksandrovich Shestopal, Centre for Prevention of Dangerous Infections, Ministry of Health and Medical Industry of Turkmenistan. Mr. Shestopal presented on biodiversity and endemic species in Turkmenistan and highlighted the work under way to clarify species systematic classifications and provide comprehensive taxonomic research involving ecological and geographical data with information technology;

(n) "Morocco's efforts in taxonomy", by Mr. Mohammed Sghir Taleb, Scientific Institute, Mohammed V University, in Rabat, Morocco. Mr. Taleb presented on the species richness of Morocco and on scientific literature produced on its endemic biodiversity. Efforts to evaluate species of concern were highlighted through the development of a red book of vascular flora and online species databases. GTI efforts to strengthen national capacities in taxonomy, such as the participation of Morocco in the IPBES regional assessment, were noted.

11. There were also interventions from self-registered participants:

(a) Mr. Daniel Janzen, a professor at the University of Pennsylvania and Technical Advisor to the Guanacaste Conservation Area in Costa Rica, described the BioAlfa project in Costa Rica, which aimed to create a public platform of the country's biodiversity, increasing public bio-literacy and allowing the integration of biodiversity data the socioeconomics of the country. BioAlfa was a high-resolution biodiversity project under iBOL, sharing unique DNA barcodes publicly from a biodiversity-rich Party. Such activities needed to be spread across the world for the advancement of taxonomic research and biodiversity conservation practices;

(b) Ms. Josefina Enfedaque, Senior Expert, Biodiversity Research Policy, Directorate-General for Research and Innovation, European Commission, highlighted initiatives in preparation in Europe, including the launch of the European Union's Biodiversity Strategy for 2030 and the next research and innovation programme, Horizon Europe. Taxonomic initiatives would form a critical component of the proposed collaboration between the Director General for Environment and for Research. Actions were highlighted and included a European Union pollinator monitoring scheme that involved taxonomic training and citizen scientists and the establishment, in collaboration with IUCN, of the European Red List of Taxonomists to assess taxonomic expertise. Investments (5 million euros) would be made to build taxonomic capacity near biodiversity hotspots and to facilitate the networking of taxonomic facilities and trainers, as well as to help establish national reference collections and generate lists of pollinator species in European countries. Genomics technologies would be supported, and actions would be taken to participate in global genetic and biodiversity monitoring, with contributions to iBOL and the Tree of Life. Importantly, the research and environmental monitoring communities would be brought together across the European Union to further biodiversity monitoring;

(c) Mr. Scott Miller, Chief Scientist, Under Secretary for Science and Research, Smithsonian Institution, United States of America, noted that strengthening connections with the literature, including the Biodiversity Heritage Library, was vital. He stressed that access to biological specimens and associated

taxonomic information and literature needed to be ensured in order to further support Parties and other Governments through collaborative biodiversity research.

ITEM 5. GLOBAL TAXONOMY INITIATIVE 2021-2030 ACTIVITIES TO ENHANCE EDUCATION, PUBLIC ENGAGEMENT AND COLLABORATION BETWEEN PARTIES, GOVERNMENTS AND TAXONOMIC INSTITUTIONS

12. After an overview of the previous item's key messages by Ms. Katie Millette of the Secretariat, the presenters under item 4 above were invited to express their views on enhancing education, public engagement and collaboration between Parties, Governments and taxonomic institutions in the context of removing the taxonomic impediment through activities of GTI, envisioning that capacity development and technical and scientific cooperation would be aligned with the enabling conditions for the post-2020 global biodiversity framework.

13. The panel expressed the following views and suggestions:

(a) Stronger engagement of the GTI national focal points, with a clear vision of national biodiversity strategies, was critically important to make capacity development effective and sustainable;

(b) The GTI national focal point network, as well as regional networks, should be enhanced to learn about and collaborate with projects and initiatives that had provided good practices in support of GTI over the last decade, for example, BioAlfa, CEBioS, CETAF, CONABIO, GBIF, iBOL (including BIOSCAN), and VIETBIO;

(c) The participation of broader sectors where species identification was needed should be enhanced, with appropriate communications with relevant national authorities regarding the post-2020 timeframe;

(d) Systematics and bioinformatics had advanced the outputs of the GTI in the last decade and this should continue with enhanced information sharing; the new initiative known as the alliance for biodiversity knowledge was mentioned in this context;

(e) Biodiversity research should be enhanced along with the capacity development, particularly in biodiversity-rich countries;

(f) International collaboration must be continued and enhanced with appropriate support to establish relevant research infrastructures and capacities.

ITEM 6. DOCUMENTATION OF THE GLOBAL TAXONOMY INITIATIVE 2021-2030 IN SUPPORT OF THE POST-2020 GLOBAL BIODIVERSITY FRAMEWORK

14. Participants expressed concern regarding the short deadline for the formal commenting period for the draft document presented in annex I to the background document.[4] The chair, in consultation with the Secretariat, proposed a revised timeline, which the Forum accepted. It is summarized below:

(a) It was agreed that the deadline for submissions in writing (using the form in annex II to the background document) would be extended to 14 December 2020;

(b) The Secretariat was requested to compile submissions and incorporate input into the draft by 15 January 2021;

(c) The Secretariat would then proceed with the internal processes required to submit the revised document, which would reflect inputs from participants in the Forum, as information for the third meeting of the Subsidiary Body on Implementation and to publish it as *CBD Technical Series No. 96*.

[4] "Draft Global Taxonomy Initiative in support of the post-2020 global biodiversity framework", available at https://www.cbd.int/meetings/GTI-OM-2020-01.

ITEM 7. OTHER MATTERS

15. GBIF offered to produce a summary statement, in collaboration with other participants, for the facilitation of communication among relevant bodies on the outcome of the Forum. Participants supported that offer. The resulting statement was subsequently approved by all participants as contained in annex II below and was posted online.[5]

16. Participants expressed their willingness to continue their engagement in GTI activities through its international networks and relevant organizations. They stressed once again that more engagement of the GTI national focal points was needed in project development and capacity development activities in order to support Parties in the implementation of the global biodiversity framework.

ITEM 8. ADOPTION OF ELEMENTS FOR REPORTING AND AN OFFLINE FINALIZATION PROCESS

17. Participants approved the process as considered under agenda item 6.

ITEM 9. CLOSURE OF THE GLOBAL TAXONOMY INITIATIVE FORUM

18. The Secretariat expressed thanks to the chair, the presenters and the co-hosting institution, the Museum für Naturkunde, and all participants and donors that supported activities of the Global Taxonomy Initiative, and conveyed wishes for a bright GTI future with active engagement from the national focal points.

19. The chair closed the Forum at 11 a.m. EST on 4 December 2020.

[5] "Call for action on recognizing the critical role of taxonomy to underpin transformative change within the post-2020 Global Biodiversity Framework" (https://www.cbd.int/gti/doc/gti_forum_2020_statement.pdf).

Annex I

LIST OF PARTICIPANTS

Name	Affiliation
Selected participants[6]	
Parties	
Miguel Gonzalo Andrade Correa	Institute of Natural Sciences, National University of Colombia, Colombia
Hugo de Boer	Natural History Museum, University of Oslo, Norway
Ethan Hillel Freid	Bahamas National Trust, Leon Levy Native Plant Preserve, Bahamas
Christoph Häuser	Museum für Naturkunde Berlin, Germany
Diana Hernández	National Commission for the Knowledge and Use of Biodiversity (CONABIO), Mexico
N'Goran Germain Kouamé	Jean Lorougnon Guédé University, Côte d'Ivoire
Hai-Ning Qin	Institute of Botany, Chinese Academy of Sciences, China
Ramagwai Sebola	South African National Biodiversity Institute (SANBI), South Africa
Aleksandr Aleksandrovich Shestopal	Centre for Prevention of Dangerous Infections, Ministry of Health and Medical Industry, Turkmenistan
Mohammed Sghir Taleb	Scientific Institute, Mohammed V University, Rabat, Morocco
Ta Thi Kieu Anh	Nature and Biodiversity Conservation Agency, Ministry of Natural Resources and Environment, Viet Nam
Jolien Venneman	Royal Belgian Institute of Natural Sciences, Belgium
Expert organizations and resource persons	
Thomas Borsch	Botanic Garden and the Botanical Museum Berlin, Germany
Paul Hebert	Centre for Biodiversity Genomics, University of Guelph, Canada
Tim Hirsch	Global Biodiversity Information Facility (GBIF), Denmark
Donald Hobern	International Barcode of Life Consortium (iBOL), Australia
Michelle Price	Consortium of European Taxonomic Facilities (CETAF), International Association for Plant Taxonomy (IAPT), Conservatory and Botanical Garden of Geneva, Switzerland
Mark Watson	Royal Botanic Garden Edinburgh, United Kingdom of Great Britain and Northern Ireland
Self-registered participants	
Donat Agosti	Plazi, Switzerland
Mónica Alegre González	National Commission for the Knowledge and Use of Biodiversity (CONABIO), Mexico
Luis Amador	Austral University of Chile, Chile
Rogelio II Andrada	University of the Philippines, Philippines
Maria Izilda Andrade	Lauro Souza Lima Institute, Brazil
Annawaty Annawaty	Tadulako University, Indonesia
Abdelhamid Azeroual	Hassan I University, Settat, Morocco
Inessa Bagatini	Federal University of São Carlos, Brazil
Juliana Bahia	Museum für Naturkunde Berlin, Germany
Olaf Banki	Species 2000, Catalogue of Life, Netherlands
Mercedes Barrios	Center for Conservation Studies, University of San Carlos of Guatemala, Guatemala

[6] See CBD notification 2020-031.

Name	Affiliation
Luís Batista	Federal University of Lavras, Brazil
Hatem Belgacem	Ministry of Local Affairs and Environment, Tunisia
Reda Benhima	Ministry of Energy, Mines and Environment, Morocco
Martha Bernabet	Bolivian Conservation and Development Foundation, Bolivia
José Augusto Pires Bitencourt	Vale Institute of Technology, Brazil
Bonnie Blaimer	Museum für Naturkunde Berlin, Germany
Mariana Boité	Oswaldo Cruz Foundation, Brazil
Israel Borokini	University of Nevada, Reno, United States of America
Pierluigi Bozzi	International University Network on Cultural and Biological Diversity, Kenya
Peter Buchanan	Manaaki Whenua - Landcare Research, New Zealand
Eliana Buenaventura	Museum für Naturkunde Berlin, Germany
Carlos Callangan	ASEAN Centre for Biodiversity, Philippines
Leandro Capurro	University of the Republic (Uruguay), Uruguay
Elizabeth Cárdenas	Ministry of Environment, Peru
Cecilia Carmaran	University of Buenos Aires-National Scientific and Technical Research Council (UBA-CONICET), Argentina
Geyby Tatiana Carrillo Apolo	Incabiotec, Peru
Ana Carrion	Pontifical Catholic University of Rio Grande do Sul, Fundação Estadual de Proteção Ambiental Henrique Luís Roessler (FEPAM), Brazil
Jessika Carvajal	Amazonian Institute for Scientific Research SINCHI, Colombia
Gervásio Carvalho	Pontifical Catholic University of Rio Grande do Sul, Brazil
Ana Casino	Consortium of European Taxonomic Facilities (CETAF), Belgium
Nicolas Castaño	Amazonian Institute for Scientific Research SINCHI, Colombia
Manuel Castillo	University of the Philippines Los Baños College of Forestry and Natural Resources, Philippines
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Cecilia Da Silva	University of the Republic (Uruguay), Uruguay
Domingos da Silva Leite	University of Campinas, Brazil
Ulrike Damm	Senckenberg Gesellschaft für Naturforschung, Germany
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Sami Dhouib	WWF North Africa, Tunisia
Carliz Diaz	Ministry of People's Power for Ecosocialism, Directorate-General for Biological Diversity, Venezuela
Oliver Dilly	German Aerospace Center (DLR), Germany

Name	Affiliation
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Alana Jute	Institute of Marine Affairs, Trinidad and Tobago
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Jenny Phillips	BioAlfa, Costa Rica
Balakrishna Pisupati	United Nations Environment Programme (UNEP), India
Shijith Puthan Purayil	Mahatma Gandhi Government Arts College, India
Aijaz Ahmad Qureshi	Islamic University of Science & Technology, India
Manzoor Qureshi	Gilgit-Baltistan Rural Support Programme, Pakistan
Adriana Radulovici	University of Guelph, Canada
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Thiago Ramos	Universidad Privada del Este, Paraguay
Phuttatida Rattana	Office of Natural Resources and Environmental Policy and Planning, Ministry of Natural Resources and Environment, Thailand
Mariana Ribeiro Maia	Brazil
Mouna Rifi	National Agronomic Institute of Tunisia, Tunisia
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Santiago Ron	Pontifical Catholic University of Ecuador, Ecuador
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Sharon Ruthia	Kenya
Chinara Sadykova	RCE Kyrgyzstan, Kyrgyzstan
Manda Safavi	Environmental Protection Authority, New Zealand
Carlos Salas	Technical University of Manabí, Ecuador
Brenda Salles	Estácio de Sá University, Brazil
Serigne Sarr	Alioune Diop University of Bambey, Senegal
Edmund Schiller	Natural History Museum Vienna, Austria
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Annex II

GLOBAL TAXONOMY INITIATIVE FORUM 2020 PARTICIPANT STATEMENT

Call for action on recognizing the critical role of taxonomy to underpin transformative change within the post-2020 Global Biodiversity Framework[7]

The participants in the Global Taxonomy Initiative (GTI) Forum, held from 2-4 December 2020, agree with the following statement, addressed to Parties to the Convention on Biological Diversity and relevant stakeholders involved in drafting and implementation of the post-2020 global biodiversity framework.

Taxonomy is the fundamental scientific discipline underpinning biodiversity discovery and understanding. As such, attainment of the goals of the global biodiversity framework depend on effective action both to maintain and strengthen long-established taxonomic expertise, and to support the many innovations enabling unprecedented discovery of the Earth's biodiversity as well as the sharing of data and information to support conservation and sustainable development.

Taxonomy must be recognized and fully integrated into all components of the global biodiversity framework. This includes, but is not confined to:

- The 2030 action targets of the framework
- The implementation support mechanisms of the framework, especially capacity development, technical and scientific cooperation, and knowledge generation

Development of capacity in taxonomy is critical to the successful implementation of the global biodiversity framework. This includes support for developing taxonomic infrastructure and capacity in all countries and regions, and for ensuring that such skills are passed on to new generations, to underpin and enhance understanding of biodiversity in all places on Earth. Increased investment in education, training and career opportunities in taxonomy is urgently needed to prevent an overall decline in taxonomic research, and to promote continued expertise and taxonomic literacy among younger professionals and future generations engaged in conservation.

Innovative and emerging technologies provide unprecedented opportunities for generating and sharing knowledge about the biosphere, when combined with essential taxonomic knowledge, techniques and skills. Such opportunities include:

- Harnessing the immense knowledge base accumulated in natural history collections of all sizes and in all regions, through digitization and sharing of data on preserved specimens using common standards to enable universal discovery, access and use
- Generation and sharing of data arising from technological improvements in genetic sequencing of organisms in nature, for example through environmental meta-genomics, enabling planetary-scale understanding of species, surveillance of their dynamics, and acceleration of species discovery
- Providing digital access to taxonomic literature and associated archives, both through digitization of historic materials, and rapid integration of newly-published taxonomic discoveries and treatments into the global knowledge base
- Engagement of citizens, indigenous peoples and local communities in observation and documentation of evidence on biodiversity occurrence in space and time, through bringing together volunteer networks, taxonomic expertise and user-friendly applications to register,

[7] This statement has been posted at https://www.cbd.int/gti/doc/gti_forum_2020_statement.pdf.

share and access biodiversity data; thereby encouraging bio-literacy and public participation in conservation and sustainable use of biodiversity

- Enabling conservation of all branches of the Tree of Life as an essential component of addressing biodiversity loss, by recognizing the evolutionary framework underlying taxonomy, and incorporating phylogenetic and systematics information with spatial data on species distribution and occurrences
- Enabling improved management, assessment, and surveillance in order to prevent negative impacts on biodiversity and human well-being, including through improved biosecurity measures

The goals of the global biodiversity framework will only be realized through active and effective collaborations and connections among all relevant taxonomic initiatives at all scales. Such ongoing collaboration must avoid duplication of effort and enable integration of data and information within a shared knowledge network, based on inclusive participation and transparent governance, as well as effective and efficient use of available resources.

We commit to engaging fully with the Parties to the Convention on Biological Diversity to ensure that taxonomy is well reflected in the post-2020 global biodiversity framework. In particular, we feel it is essential that taxonomy continue to feature as a strong component of the programmes for technical and scientific cooperation under the Convention, building on the GTI network of focal points and partners, pending the inclusive review process for review and renewal of these programmes, to be submitted for approval at fifteenth meeting of the Conference of the Parties.

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[8] CBD notification 2020-031.

[9] CBD notification 2020-031.

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