Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services

**Plenary of the Intergovernmental Science-Policy
Platform on Biodiversity and Ecosystem Services
Tenth session**
Bonn, Germany, 28 August–2 September 2023
Item 8 of the provisional agenda*

**Building capacity, strengthening knowledge
foundations and supporting policy**

Information on advanced work on knowledge and data

Note by the secretariat

1.   In section II of decision IPBES-2/5, the Plenary of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) established a task force on knowledge and data for the period of its first work programme (2014–2018). In section II of decision IPBES-3/1, the Plenary approved the data and information management plan set out in annex II to that decision.

2.   At its seventh session, in decision IPBES-7/1, the Plenary adopted the rolling work programme of the Platform for the period up to 2030, which includes among its six objectives "advanced work on knowledge and data" (objective 3 (a)). The objective focuses on identifying, prioritizing, mobilizing and facilitating access to existing knowledge, information and data, including indicators and metrics to be used in assessments; further developing a web-based infrastructure in support of open data sharing and information management; identifying gaps in knowledge and data arising from the completed deliverables of IPBES work programmes; systematically cataloguing knowledge and data gaps identified in the work programme; and catalysing the generation of new knowledge by making those gaps known, including to research funding agencies, research programme developers, and institutions involved in prioritizing and funding data mobilization, and considering them for further prioritization of deliverables in the work programme.

3.   In section IV of decision IPBES-7/1, the Plenary recalled the establishment of the task force and extended its mandate for the implementation of objective 3 (a) of the rolling work programme of the Platform up to 2030, in accordance with the revised terms of reference set out in annex II to that decision, and requested the Bureau and the Multidisciplinary Expert Panel, through the IPBES secretariat, to constitute the task force in accordance with the terms of reference.

4.   According to its terms of reference, the task force on knowledge and data oversees and takes part in the implementation of objective 3 (a) of the rolling work programme up to 2030, "Advanced work on knowledge and data", and acts in accordance with relevant decisions by the Plenary and its subsidiary bodies, including by building on lessons learned in the implementation of deliverable 1 (d) of the first work programme; supporting assessment experts in identifying, prioritizing and mobilizing existing knowledge and data needed for IPBES assessments; guiding the secretariat, including the dedicated technical support unit, in the management of the data, information and knowledge used in IPBES products, including the development of the web-based infrastructure, to ensure their long-term availability and data interoperability; and supporting the Bureau and the Multidisciplinary Expert Panel in reviewing the knowledge needs and gaps identified through IPBES assessments and other

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* IPBES/10/1.

IPBES deliverables and in catalysing the generation of new knowledge and data. In section IV of decision IPBES-7/1, the Plenary also decided to review the mandate and terms of reference of the task force at its tenth session.

5. In decision IPBES-7/1, the Plenary requested the task force to develop specific deliverables for each of the priority topics of the rolling work programme up to 2030. In response, the task force prepared deliverables for objective 3 (a), which were welcomed by the Plenary in decision IPBES-9/1 and are reproduced below.

6. The deliverables on knowledge generation catalysis comprise:

(a) Review and further development of the process for catalysing the generation of new knowledge, the living guidelines to support assessment authors in identifying knowledge gaps, and the template for the collection of knowledge gaps, based on lessons learned from ongoing assessments;

(b) Provision of support to assessment authors in identifying knowledge gaps, including in producing a list of knowledge gaps as part of the assessments, using the guidelines and the template;

(c) Promotion of action by relevant external organizations and initiatives to address identified knowledge gaps;

(d) Monitoring of the impact of knowledge generation catalysis efforts to effectively fill the identified gaps.

7. The deliverables on data and knowledge management comprise:

(a) Data and knowledge management policy and a long-term vision for data and knowledge management;

(b) Provision of support to assessment authors on aspects relating to the data and knowledge management policy and the generation, management, handling and delivery of IPBES products;

(c) Engagement, as appropriate, with other entities, initiatives and service providers regarding data and knowledge relevant to the Platform.

8. The general terms of reference of the task forces, set out in annex II to decision IPBES-7/1, stipulate that each task force will, among other activities, provide a regular progress report and, in consultation with the Multidisciplinary Expert Panel and the Bureau, develop and update a workplan that sets out clear milestones and deliverables with regard to the relevant topics and objectives of the rolling work programme up to 2030 for periodic consideration by the Plenary.

9. In decision IPBES-9/1, the Plenary welcomed the progress made by the task force on knowledge and data in the implementation of objective 3 (a) of the work programme of the Platform up to 2030 and the data and knowledge management policy of the Platform, and it approved the workplan of the task force for the intersessional period 2022–2023. The workplan is set out in annex III to the decision.

10. An overview of the activities carried out by the task force since the ninth session of the Plenary is set out in the report of the Executive Secretary on progress in the implementation of the rolling work programme up to 2030 (IPBES/10/4).

11. The annex to the present document provides further information on activities carried out by the task force in implementing its workplan (sections I, II, III and VI and appendices). Section V sets out additional information on the proposed workplans for the implementation of objective 3 (a) for the intersessional period 2023–2024, presented in document IPBES/10/8. Sections VI and VII contain draft workplans for the implementation of work programme objective 3 (a) for the intersessional periods 2024–2025 and 2025–2026. The annex, including its appendix, is presented without formal editing.

Annex*

I. Membership of the task force

1. The Multidisciplinary Expert Panel and Bureau, at their 13th meetings selected the members of the task force on knowledge and data in line with its terms of reference set out in annex II to decision IPBES-7/1.

2. The current composition of the task force on knowledge and data is as follows:

Name	Country	Function
Douglas Beard	United States of America	Co-chair, Member of the Bureau
Ricardo Motta Pinto-Coelho	Brazil	Co-chair, Member of the MEP
Isabel Sousa Pinto	Portugal	Expert, Member of the MEP
András Báldi	Hungary	Expert
Kalpana Chaudhari	India	Expert
Deborah Drucker	Brazil/Italy	Expert
Grégoire Dubois	Belgium	Expert
Rainer M. Krug	Germany	Expert
Howard Nelson	Trinidad and Tobago	Expert
Xubin Pan	China	Expert
Fatima Parker-Allie	South Africa	Expert
Dave Thau	United States of America	Expert
Katalin Török	Hungary	Expert
Bi Tra Aimé Vroh	Côte d'Ivoire	Expert
Hanno Seebens	Germany	Liaison expert, invasive alien species assessment

3. Representatives of the United Nations Educational, Scientific and Cultural Organization, the United Nations Environment Programme – World Conservation Monitoring Centre, and the Global Biodiversity Information Facility, as well as three individual experts (Wouter Addink from Naturalis Biodiversity Center, Maral Dadvar from Goethe University Frankfurt, and Cornelia Krug from University of Zurich) participated in the work of the task force as resource persons.

4. At its 13th meeting the Bureau selected the Biodiversa+ secretariat, hosted by the French Foundation for Research and Biodiversity (FRB), in Paris, to support the work on knowledge generation catalysis of the task force on knowledge and data, and the Senckenberg Society for Nature Research (Germany) to host the part of the knowledge and data technical support unit focusing on data and knowledge management, until the tenth session of the Plenary.

II. Meetings and activities of the task force

5. The fifth meeting of the task force on knowledge and data was held online on 22 November and 2 December 2022. The overarching goal was to discuss the experiences and lessons learned by the task force on knowledge and data since IPBES 7. The first day of the meeting was dedicated to the experiences and lessons learned with regard to data and knowledge management, and the second day to the experiences and lessons learned with regard to knowledge generation catalysis.

6. The sixth task force meeting on knowledge and data was held online on 10 and 11 May 2023. The main topics discussed were:

(a) On knowledge generation catalysis: Ways to monitor and showcase the impacts of activities on knowledge generation catalysis, to monitor the uptake of IPBES assessments in the programmes of research programmers and funders, and to produce graphic communication materials;

(b) On data and knowledge management: Evaluation of the extent to which completed IPBES assessments comply with the IPBES data and knowledge management policy, and provision of technical support to the ongoing assessments.

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* The annex has not been formally edited.

III. Progress in the implementation of objective 3 (a) (i): Advanced work on knowledge and data – data and knowledge management

7.   This section sets out activities undertaken by the task force between July 2022 and May 2023 under objective 3 (a), advanced work on knowledge and data, regarding data and knowledge management. The use of "technical support unit for knowledge and data" in section III refers to the part of the technical support unit dedicated to data and knowledge management.

A. Data and knowledge management policy and the long-term vision for data and knowledge management

8.   The technical support unit for knowledge and data conducted a conformity assessment[1] to evaluate the extent to which the approved versions of the Assessment of the Diverse Values and Valuation of Nature and the Assessment of the Sustainable Use of Wild Species comply with the IPBES data and knowledge management policy[2] and adhered to the IPBES delivery protocol of the assessment drafts[3]. Both assessments satisfactorily complied with the delivery protocol. This exercise also served as an evidence-based tool to identify procedural ambiguities in the delivery protocol of the assessment drafts, gaps in the data and knowledge management policy, and areas where the assessment teams required further technical support.

9.   Furthermore, the technical support unit for knowledge and data conducted a comparison between the IPBES data and knowledge management policy and two recently published guidelines; the UNESCO Open Science Toolkit[4] and the GEO[5] Data Licensing Guidance[6]. The comparison reconfirmed that the IPBES data and knowledge management policy fully addresses the requirements of both guidelines, and that the current data and knowledge management procedures demonstrate compatible performance in terms of completeness and adherence to the open science recommendations set forth by UNESCO and GEO.

10.   With respect to the further development of the IPBES long-term vision for data and knowledge management[7], the task force on knowledge and data dedicated its 5th meeting (held on 22 November and on 2 December 2022) to discussing the lessons learned, experiences and long-term targets of the task force. The task force then mandated the part of its technical support unit focussing on data and knowledge management to revise the discussed targets of the long-term vision and to develop implementation plans for targets up to 2025. The task force reviewed the implementation plans for targets up to 2025 at its 6th meeting (on 10 and 11 May 2023), and used this review as a basis for wrapping up the work plans for the intersessional period 2023–2024 and beyond.

B. Provision of support to assessment authors on aspects relating to the data and knowledge management policy and the generation, management, handling and delivery of IPBES products

11.   Upon the request of the task force, the technical support unit conducted a comprehensive study and published a report[8] on the indicators used or referred to in the recently completed assessments, the Global Assessment of Biodiversity and Ecosystem Services, the Values Assessment, and the Sustainable Use Assessment, and how they compared to indicators proposed in the monitoring frameworks of recent multilateral environmental agreements; the Kunming-Montreal Global Biodiversity Framework and the Sustainable Development Goals of the 2030 Agenda for Sustainable Development. The report is publicly available on Zenodo,[9] and the underlying datasets were made available to the experts of the Thematic Assessment of the Interlinkages among Biodiversity, Water, Food and Health and the Thematic Assessment of the Underlying Causes of Biodiversity Loss, Determinants of Transformative Change and Options for Achieving the 2050 Vision for Biodiversity.

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[1] https://doi.org/10.5281/zenodo.7738820

[2] https://doi.org/10.5281/zenodo.3551078

[3] https://doi.org/10.5281/zenodo.5509137

[4] https://www.unesco.org/en/open-science/toolkit

[5] https://www.earthobservations.org/

[6] https://gkhub.earthobservations.org/records/nxzjn-qx554

[7] https://doi.org/10.5281/zenodo.5513473

[8] https://doi.org/10.5281/zenodo.7738965

[9] https://doi.org/10.5281/zenodo.7738965

12. The data management reports submitted for the final drafts of the core chapters of the Thematic Assessment of Invasive Alien Species and their Control, and for its summary for policymakers, were reviewed for compliance with the IPBES data and knowledge management policy. Several ad hoc meetings had been held with the invasive alien species assessment technical support unit to clarify questions and facilitate the production of these data management reports. The results of the compliance review were discussed with the technical support unit.

13. The technical support unit for knowledge and data reviewed the citations for the full report of the invasive alien species assessment, its chapters and summary for policymakers, and published them on the IPBES *ICT Portal*[10] as well as on Zenodo.[11]

14. Monthly, and since April 2023 bi-weekly meetings were held with the technical support units for the nexus assessment and for the transformative change assessment. These meetings aimed to address any inquiries or concerns related to the implementation of the IPBES data and knowledge management policy. Additionally, the meetings facilitated coordination regarding cross-chapter tasks on literature search and analysis, as well as the utilization of advanced data technology.

15. Two webinars were held by the technical support unit for knowledge and data as a follow-up to the first author meetings for the experts of the nexus assessment and transformative change assessment. These webinars provided an opportunity for further engagement and discussion among the experts across chapters on matters relevant to data management. The topics covered in these webinars were related to the knowledge and data management aspects of the assessments, aiming to enhance collaboration and ensure a comprehensive understanding of the requirements and guidelines for the assessments.

16. Upon the request of the task force, the technical support unit for knowledge and data reviewed the first draft of the chapters for the nexus assessment and transformative change assessment, on matters relevant to data and knowledge handling and presentation. The technical support unit submitted its extensive comments for discussion during the second author meetings for the assessments.

17. The technical support unit for knowledge and data attended the second author meeting of the nexus assessment (March 2023, South Africa). A close collaboration was established with the experts of chapter 2 on the identification, selection and gathering, and analysis of indicators, as well as with the experts of chapter 5 on harmonized systematic literature search and analysis.

18. The technical support unit for knowledge and data attended the second author meeting of the transformative change assessment (May 2023, Costa Rica). A close collaboration was established with the experts of all chapters, mainly on quantitative analysis, advanced data technology, and harmonized systematic literature search and analysis.

19. An introductory meeting was organized with the business and biodiversity assessment technical support unit to introduce the IPBES data and knowledge management policy, guidelines, and resources, as well as to coordinate for the first author meeting.

20. The IPBES ICT portal[12] underwent a comprehensive review and editing process by the technical support unit for knowledge and data to ensure alignment with the latest version of the IPBES data and knowledge management policy. Necessary changes and updates were made throughout the portal to accurately reflect the guidelines and provisions outlined in the policy. This revision aimed to ensure consistency and coherence between the ICT portal and the official IPBES data and knowledge management policy.

21. The technical support unit for knowledge and data continued its close collaboration with the technical support unit for scenarios and models to support their efforts to develop and maintain a Zotero library for the Nature Futures Framework and an underlying data management report for their literature search.

22. The technical support unit for knowledge and data continued to collaborate with the technical support unit for Indigenous and local knowledge in a joint effort to identify indicators related to Indigenous and local knowledge in the completed assessments, and to systematically identify the uptake and utilisation of knowledge gained from the series of dialogue workshops with experts of

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[10] https://ict.ipbes.net/ipbes-ict-guide/data-management/technical-guidelines/suggested-citations
[11] https://doi.org/10.5281/zenodo.5783347
[12] https://ict.ipbes.net/

Indigenous and local knowledge, as published in IPBES dialogue meeting reports, to the completed assessments.

23.   The task force on knowledge and data collaborated with the task force on capacity-building on matters relevant to the selection of the IPBES fellows. The IPBES fellows are playing a significant role in management and handling of knowledge and data in their respective chapters.

C.   Engagement, as appropriate, with other entities, initiatives, and service providers on data and knowledge relevant to the Platform

24.   The task force and technical support unit supported assessment experts in the handling of data from various providers.

25.   The technical support unit for knowledge and data is hosted at the Senckenberg Biodiversity and Climate Research Institute. The head of the unit attended several meetings, relevant to the work of the technical support unit for knowledge and data, in his capacity as senior scientist at Senckenberg;

        (a)   IPCC workshop on the use of scenarios in the sixth IPCC assessment report and subsequent assessments, Bangkok, Thailand, 25 to 27 April 2023;[13]

        (b)   Co-design workshop for a global knowledge support service for biodiversity[14] with a focus on the needs of Parties for the implementation of the Kunming-Montreal Global Biodiversity Framework organized by UNEP-WCMC in Cambridge from 18 to 21 April 2023;

        (c)   GEO Symposium 2023,[15] and the Open Data and Open Knowledge workshop[16] in Geneva from 13 to 16 June 2023.

IV.   Progress in the implementation of objective 3 (a) (ii): Advanced work on knowledge and data – knowledge generation catalysis

26.   This section sets out activities undertaken by the task force between July 2022 and May 2023 under objective 3 (a), advanced work on knowledge and data, regarding knowledge generation catalysis. The use of "technical support unit for knowledge and data" in section IV refers to the part of the technical support unit dedicated to knowledge generation catalysis.

A.   Review and further development of the process for catalysing the generation of new knowledge, of the living guidelines to support assessment authors in identifying of knowledge gaps, and of the template for the collection of knowledge gaps, based on lessons learned from ongoing assessments

27.   The task force conducted several meetings to identify an efficient way to communicate swiftly on knowledge gaps related to IPBES assessments upon their approval. This matter was addressed at the 7th meeting of the task force's informal knowledge working group in November and at the task force meeting in December 2022. The task force worked on a concept note for complementary approaches to communicate and engage earlier on knowledge gaps in the IPBES assessment process, available in appendix I. Among the proposals, two stand out:

        (a)   Organization of webinars for programmers, funders and the research community, to provide the latest information on literature cut-off dates and review periods for IPBES assessments under development;

        (b)   Identification, prior to the approval of an assessment, of relevant existing knowledge generation programmes and funding initiatives. Timely identification of relevant initiatives would allow the task force to develop a roadmap to start communicating on the knowledge gaps as soon as an assessment is approved.

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[13] www.ipcc.ch/event/ipcc-workshop-on-the-use-of-scenarios-in-the-sixth-assessment-report-and-subsequent-assessments/

[14] https://gkssb.chm-cbd.net/global-knowledge-support-service-biodiversity

[15] https://www.earthobservations.org/symposium2023.php

[16] https://www.earthobservations.org/odok2023.php

B.   **Provision of support to assessment authors in identifying knowledge gaps, including in producing a list of knowledge gaps as part of the assessment, using the guidelines and template**

28.   The task force on knowledge and data and its technical support unit communicated and held meetings with the technical support units for the nexus and transformative change assessments to gauge the support which assessment experts need to identify and present knowledge gaps in their respective assessments. The following support measures were implemented by the task force and its technical support unit:

        (a)   The technical support unit participated online in the first author meetings of the nexus and transformative change assessments (held in May 2022);

        (b)   The task force reviewed the first order draft of the nexus and the transformative change assessments with regard to the identified knowledge gaps;

        (c)   The task force on and technical support unit for knowledge and data held two online webinars with the nexus assessment authors on 6 and 7 March 2023 to present and discuss the guidelines and template for identifying knowledge gaps in the assessment;

        (d)   The task force and technical support unit held one online webinar for the transformative change assessment authors on 9 May 2023 to present and discuss the guidelines and template for identifying knowledge gaps in the assessment;

        (e)   A member of the technical support unit participated in the second author meeting of the transformative change assessment to present the guidelines and discuss the advancement of the identification of knowledge gaps in each chapter;

        (f)   Support was provided towards the development of the final versions of the chapters and summary for policymakers of the invasive alien species assessment. Notably, advice was given on the format of the table of knowledge gaps in the summary for policymakers.

C.   **Promotion of actions by relevant external organizations and initiatives to address identified knowledge gaps**

29.   The task force on knowledge and data and its technical support unit facilitate dialogues between IPBES assessment experts and research programmers and funders who have a focus on biodiversity. Several meetings were held with relevant organizations and networks from the five UN regional groups. The technical support unit continued its efforts to organize dialogues for the Latin America and Caribbean Countries Group by coordinating with the Inter-American Institute for Global Change Research. The progress made in organizing dialogue workshops is as follows:

        (a)   The Belmont Forum and the task force organized two sessions at the global level with co-chairs of the Global Assessment of Biodiversity and Ecosystem Services, at the Sustainability Research Innovation Congress, which was held online from 20 to 24 June 2022. A first two-hour public session was organized as part of the congress, followed by a second session as part of the plenary meeting of members of the Belmont Forum;

        (c)   Biodiversa+, the European Commission and the task force organized an online dialogue workshop on 8 September 2022 to communicate the knowledge gaps identified in the *Global Assessment Report on Biodiversity and Ecosystem Services*, the *Regional Assessment Reports on Biodiversity and Ecosystem Services for Europe and Central Asia*, *for Asia and the Pacific*, *for Africa*, and *for the Americas*, along those identified in the workshop reports on *Biodiversity and Climate Change*, and *on Biodiversity and Pandemics*;

        (d)   Biodiversa+, the European Commission and the task force held a second online dialogue workshop on 20 October 2022, to communicate the knowledge gaps identified in the *Assessment Report on the Diverse Values and Valuation of Nature* and the *Assessment Report on the Sustainable Use of Wild Species*;

        (e)   The task force organized an online dialogue workshop for national focal points and other relevant actors in Africa, held on 13 June 2023, to communicate the knowledge gaps identified in the *Assessment Report on the Diverse Values and Valuation of Nature* and the *Assessment Report on the Sustainable Use of Wild Species;*

        (f)   The task force also organized an online dialogue workshop for national focal points and other relevant actors in the Asia-Pacific region, held on 20 June 2023, to communicate the knowledge

gaps identified in the *Assessment Report on the Diverse Values and Valuation of Nature* and the *Assessment Report on the Sustainable Use of Wild Species;*

(g)   The task force held meetings with the Belmont Forum to organize the in-person participation of IPBES experts in the Belmont Forum plenary and in the 2023 Sustainability Research Innovation Congress. These meetings were held on 25 and 26 June 2023 to communicate the knowledge gaps identified in the *Assessment Report on the Diverse Values and Valuation of Nature* and the *Assessment Report on the Sustainable Use of Wild Species.*

30.   The report on the dialogue with the Belmont Forum held in June 2022 is available in appendix II. The report of the dialogue with national focal points of Africa is available in appendix III. The report of the dialogue with national focal points of Asia Pacific is available in appendix IV.

31.   The task force initiated the development of a page on the IPBES website dedicated to the knowledge gaps identified in IPBES assessments, which will be available at: https://www.ipbes.net/knowledge-generation. On this page, an archive of the relevant materials on knowledge generation catalysis developed by the task force during its mandate of three years will be displayed to support and facilitate the future work of IPBES.

D.   Monitoring of the impact of knowledge generation catalysis efforts to effectively fill identified gaps

32.   Following the dialogue workshop for Europe and Central Asia on the knowledge gaps identified as part of the Values and Sustainable Use Assessments, a questionnaire was sent to participants in October 2022 to evaluate their views on the usefulness of the dialogue workshop and their specific interests and needs for future dialogues. In their evaluation, all participants expressed strong satisfaction with the meeting. Respondents stressed the importance of such recurrent dialogues to improve communication and information sharing between IPBES and research and innovation programmers and funders regarding the work of IPBES. Several programmers and funders indicated that they planned to include the knowledge gaps in their national/subnational programmes or strategies. Uptake of IPBES assessment findings, including knowledge gaps, is being assessed as part of the monitoring activities of the task force.

33.   Following the dialogue workshop with the Belmont Forum in June 2022, IPBES was invited to mobilize experts to participate in the scoping workshops of the Collaborative Research Actions (CRA) on Africa[17] (October 2022) and on Amazon and tropical forests and its global implications: Defining priorities for a sustainable future[18] (June 2023). The objective of these scoping workshops was to enable IPBES experts to directly contribute identified knowledge gaps in the drafting of these Belmont Forum calls. The two co-chairs of the Regional Assessment of Biodiversity and Ecosystem Services for Africa participated in the first workshop and the two co-chairs of the Global Assessment of Biodiversity and Ecosystem Services participated in the second workshop. They contributed to the discussions on the knowledge gaps identified in the Africa Assessment and those identified in the Global Assessment.

V.   Additional information on the workplans for the implementation of work programme objective 3 (a) for the intersessional period 2023–2024

34.   In decision IPBES-7/1, the Plenary decided to review the mandate and terms of reference of the task force at its tenth session. Revised terms of reference for the task force are presented in document IPBES/10/8 for consideration by the Plenary. In the same document, a workplan for the implementation of objective 3 (a) of the IPBES rolling work programme up to 2030 is presented together with workplans for objectives 2; 3 (b); 4 (a) and 4 (b). The workplans, which are presented for consideration by the Plenary, cover the period between IPBES 10 and IPBES 11 (intersessional period 2023–2024). Figure 1 presents the institutional structure proposed for the implementation of these workplans.

35.   Draft workplans for the implementation of objective 3 (a), covering the intersessional period between IPBES 11 and IPBES 12 (intersessional period 2024–2025) and between IPBES 12 and IPBES 13 (intersessional period 2025–2026) are presented in sections VI and VII below.

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[17] https://www.belmontforum.org/cras-in-scoping#africa_regional

[18] https://www.belmontforum.org/cras-in-scoping#amazonian

36.   Figure 2 schematically illustrates the interactions of the task force on knowledge and data with the IPBES assessment processes, as reflected in the proposed workplans to implement objective 3 (a) (i) of the IPBES rolling work programme - data and knowledge management. Throughout the assessment process, continuous support is provided on knowledge and data management. For example, an introductory session on IPBES data and knowledge management policy is run; the first, second, and final drafts of the assessment are reviewed against the policy; and support is provided to experts at all of the author meetings.

37.   Figure 3 schematically illustrates the interactions of the proposed work on knowledge generation catalysis with the IPBES assessment processes, as reflected in the proposed workplans to implement objective 3 (a) (ii) of the IPBES rolling work programme - knowledge generation catalysis. Throughout the assessment process, continuous support is provided to identify knowledge gaps: an introductory session on the guidelines for the identification of knowledge gaps is run; the first and second drafts of the assessment are reviewed, sessions to support the identification of knowledge gaps are held at the second and third author meetings; and following the publication of an assessment dialogues are held with stakeholders to communicate the identified knowledge gaps.

Figure 1
Illustration of the change in bodies responsible for the implementation of objectives 2, 3 and 4 of the IPBES rolling work programme up to 2030. Bolded text and orange arrows indicate a change in responsible body.

Figure 2
Interaction of the task force on knowledge and data with the assessment process. The standard process for the production of an IPBES assessment is shown along the multi-coloured horizontal arrow, with activities to implement objective 3 (a,i), data and knowledge management, shown in blue lines and arrows. The dotted line for scoping indicates that this process is not carried out for every assessment.

Figure 3
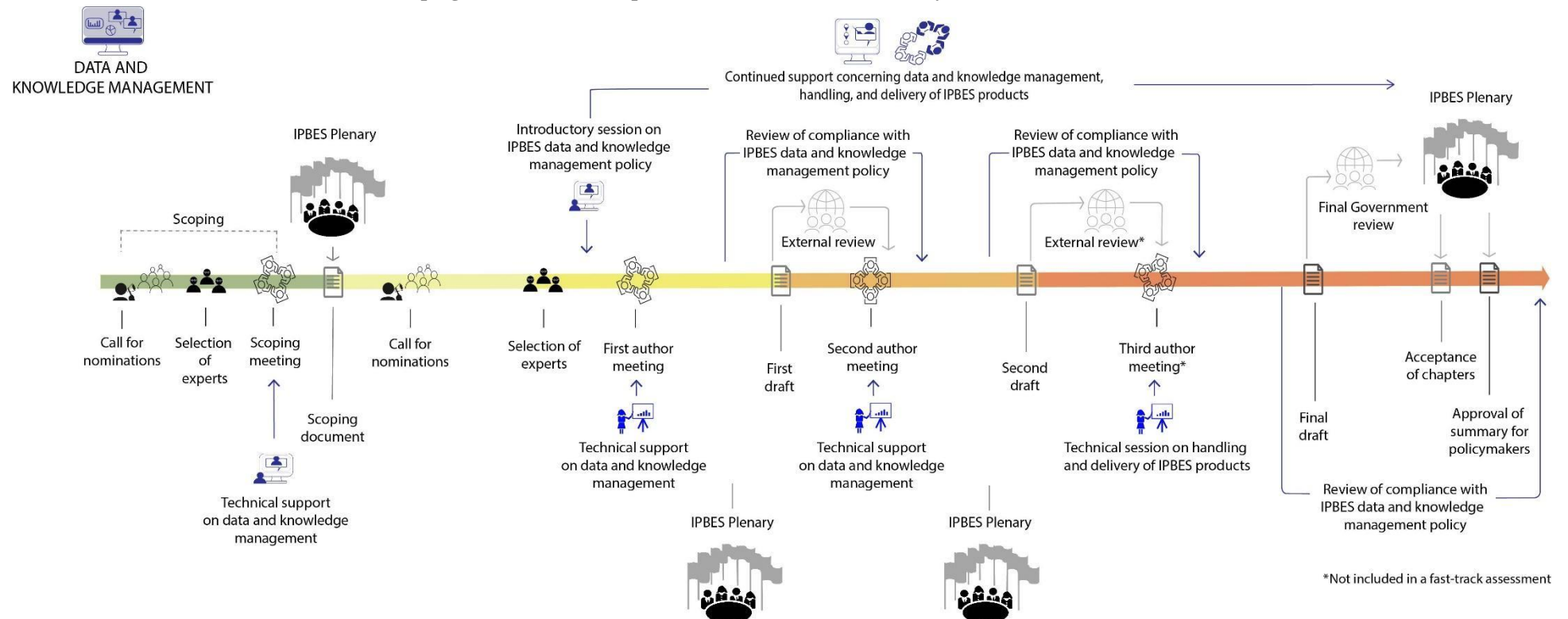**Interaction of work on knowledge generation catalysis with the assessment process. The standard process for the production of an IPBES assessment is shown along the multi-coloured horizontal arrow, with activities to implement objective 3 (a,ii), knowledge generation catalysis, shown in purple lines and arrows. The dotted line for scoping indicates that this process is not carried out for every assessment.**
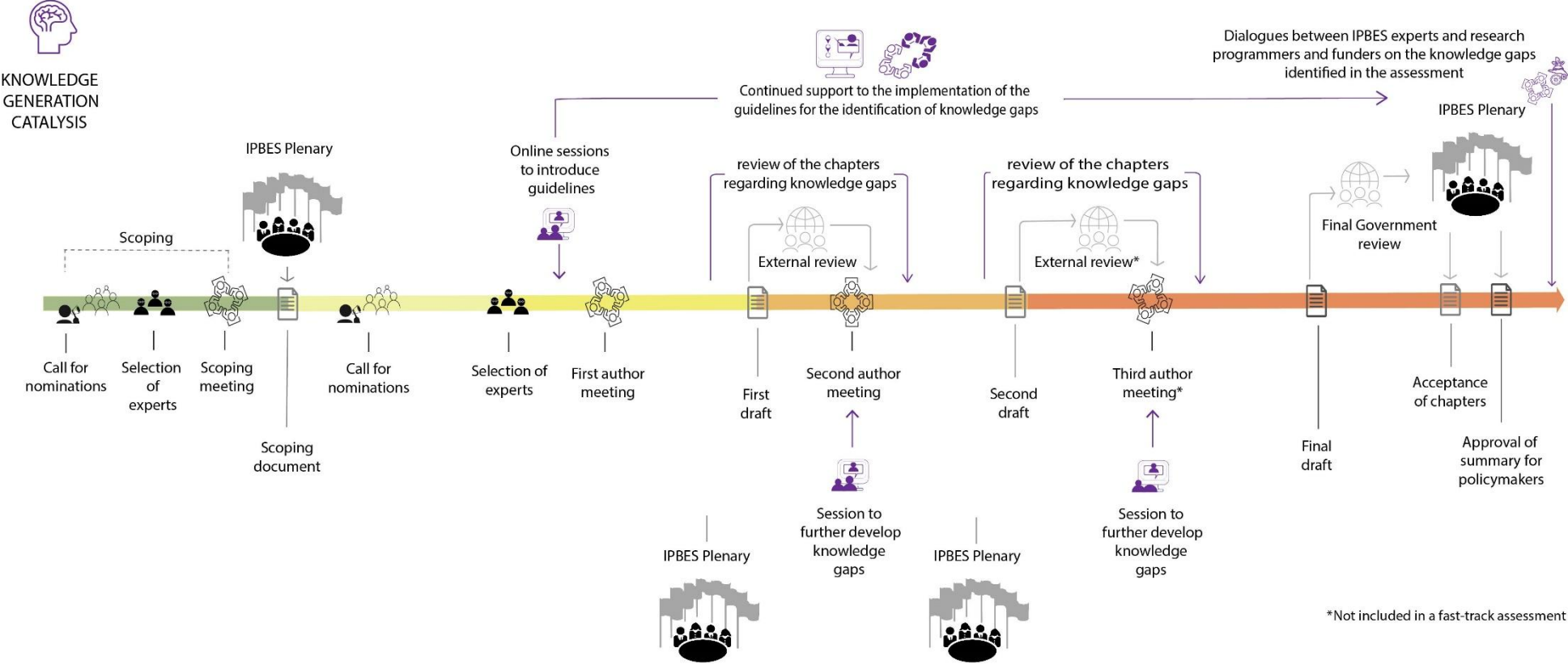
VI. Draft workplans for objective 3 (a) (i): Advanced work on knowledge and data – data and knowledge management

38.   It is proposed that the following workplan for objective 3 (a) (i), advanced work on knowledge and data – data and knowledge management, be implemented by a task force on knowledge and data. The Bureau will decide on appropriate technical support for the implementation of the workplan.

A.   Draft workplan for the intersessional period 2024–2025 (for information)

39.   Activities for the maintenance of the data and knowledge management policy and further development of the long-term vision for data and knowledge management will include:

(a)   Comprehensive review and, if necessary, revision of the IPBES data and knowledge management policy;

(b)   Comprehensive review and, if necessary, revision of the IPBES long term vision on data and knowledge management;

(c)   Further development of the draft workplan for the intersessional period 2025-2026 in line with the revised long-term vision for data and knowledge management, with regard to its targets up to 2027.

40.   Activities for the provision of support to assessment authors on aspects relating to the data and knowledge management policy and the management, handling and delivery of IPBES products will include:

(a)   Support to the nexus and transformative change assessments, after their finalization, on aspects relating to the wrap-up, documentation and archiving of the work carried out during the development of the assessments;

(b)   Support to the Methodological Assessment of the impact and Dependence of Business on Biodiversity and Nature's Contributions to People and any new assessments[19] with guidelines, tutorials and materials on the implementation of the data and knowledge management policy, as well as on aspects relating to the documentation of knowledge gaps, advanced data technologies and archiving of the work carried out during the development of the assessments.

41.   Activities for the engagement, as appropriate, with other entities, initiatives and service providers on data and knowledge relevant to the Platform will include:

(a)   Support to IPBES experts concerning access, handling and, if needed, processing of a wide range of external data and knowledge;

(b)   Support to IPBES experts concerning the application of advanced data technologies and services offered by other entities;

(c)   Sharing of relevant information on knowledge and data with capacity-building initiatives under biodiversity-related multilateral agreements, as appropriate.

42.   Activities to ensure the effectiveness of the implementation of the workplan include the monitoring of relevant indicators to the work on data and knowledge for measuring the effectiveness of the workplan.

B.   Draft workplan for the intersessional period 2025–2026 (for information)

43.   Activities for the maintenance of the data and knowledge management policy and further development of the long-term vision for data and knowledge management will include:

(a)   Review and revision of the IPBES data and knowledge management policy, as necessary;

(b)   Review and revision of the IPBES long term vision on data and knowledge management, as necessary;

(c)   Development of the draft workplans for the intersessional periods 2026-2029 in line with the revised long-term vision for data and knowledge management, with regard to its targets up to 2030.

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[19] Subject to the initiation of new assessments by the Plenary.

44.   Activities for the provision of support to assessment authors on aspects relating to the data and knowledge management policy and the management, handling and delivery of IPBES products will include:

        (a)   Support to the business and biodiversity assessment, following its completion, on aspects relating to the wrap-up, documentation and archiving of the work carried out during the development of the assessment;

        (b)   Support to any new assessments[20] with guidelines, tutorials and materials on the implementation of the data and knowledge management policy, as well as on aspects relating to the documentation of knowledge gaps, advanced data technologies and archiving of the work carried out during the development of the assessments.

45.   Activities for the engagement, as appropriate, with other entities, initiatives and service providers on data and knowledge relevant to the Platform will include:

        (a)   Support to IPBES experts concerning access, handling and, if needed, processing of a wide range of external data and knowledge;

        (b)   Support to IPBES experts concerning the application of advanced data technologies and services offered by other entities;

        (c)   Sharing of relevant information on knowledge and data with capacity-building initiatives under biodiversity-related multilateral agreements, as appropriate.

46.   Activities to ensure the effectiveness of the implementation of the workplan include the monitoring of relevant indicators to the work on data and knowledge for measuring the effectiveness of the workplan.

VII. Draft workplans for objective 3 (a) (ii): Advanced work on knowledge and data – knowledge generation catalysis

47.   It is proposed that the following workplan for objective 3 (a) (ii), advanced work on knowledge and data – knowledge generation catalysis, be implemented by a task force on knowledge and data. The Bureau will decide on appropriate technical support for the implementation of the workplan.

A. Draft workplan for the intersessional period 2024–2025 (for information)

48.   Activities for the review and further development of the process for catalysing the generation of new knowledge, the living guidelines to support assessment authors in identifying knowledge gaps and the template for the collection of knowledge gaps, based on lessons learned from ongoing assessments, will include the further development of a proposal to enhance the early and efficient communication of knowledge gaps related to upcoming and ongoing IPBES assessments, and testing the implementation of the proposed process, as appropriate;

49.   Activities for the provision of support to assessment authors in identifying knowledge gaps, including in producing a list of knowledge gaps as part of the assessments, using the guidelines and template, will include overseeing technical support to assessment experts in the process of knowledge gaps identification, presentation and collection;

50.   Activities for the promotion of actions by relevant external organizations and initiatives to address identified knowledge gaps, will include:

        (a)   Overseeing the maintenance of a space on the IPBES website, where knowledge gaps identified in completed IPBES assessments can be easily accessed, filtered and searched;

        (b)   Overseeing the issuance of a notification by the secretariat, communicating the knowledge gaps identified in the nexus and transformative change assessments to IPBES members and stakeholders;

        (c)   Provision of input to the in-person dialogue meetings with national focal points organized by the task force on capacity-building and policy-support, to share knowledge gaps identified in completed IPBES assessments with a view to supporting Governments in facilitating the generation of new knowledge;

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[20] Subject to the initiation of new assessments by the Plenary.

(d)   Provision of input to (online) workshops organized by regional networks of research programmers and funders or the biodiversity and ecosystem services research community, in order to communicate knowledge gaps identified in completed IPBES assessments to those networks and their members.

51.   The impact of knowledge generation catalysis efforts to effectively fill the identified gaps, will be monitored.

52.   Activities to ensure the effectiveness of the implementation of the workplan include the monitoring of a set of relevant indicators for measuring the effectiveness of the workplan.

B.   Draft workplan for the intersessional period 2025–2026 (for information)

53.   Activities for the review and further development of the process for catalysing the generation of new knowledge, of the living guidelines to support assessment authors in identifying knowledge gaps and of the template for the collection of knowledge gaps, based on lessons learned from ongoing assessments, will include the further development, as necessary, of a proposal to enhance the early and efficient communication of knowledge gaps related to upcoming and ongoing IPBES assessments, and testing the implementation of the proposed process, as appropriate.

54.   Activities for the provision of support to assessment authors in identifying knowledge gaps, including in producing a list of knowledge gaps as part of the assessments, using the guidelines and template, will include overseeing technical support to assessment experts in the process of knowledge gaps identification, presentation and collection;

55.   Activities for the promotion of actions by relevant external organizations and initiatives to address identified knowledge gaps, will include:

(a)   Overseeing the development of a space on the IPBES website, where knowledge gaps identified in completed IPBES assessments can be easily accessed, filtered and searched;

(b)   Overseeing the issuance of a notification by the secretariat, communicating the knowledge gaps identified in the business and biodiversity assessment to IPBES members and stakeholders;

(c)   Provision of input to the in-person dialogue meetings with national focal points organized by the task force on capacity-building and policy-support, to share knowledge gaps identified in completed IPBES assessments with a view to supporting Governments in facilitating the generation of new knowledge;

(d)   Provision of input to (online) workshops organized by regional networks of research programmers and funders or the biodiversity and ecosystem services research community, in order to communicate knowledge gaps identified in completed IPBES assessments to those networks and their members.

56.   The impact of knowledge generation catalysis efforts to effectively fill the identified gaps, will be monitored.

57.   Activities to ensure the effectiveness of the implementation of the workplan include the monitoring of a set of relevant indicators for measuring the effectiveness of the workplan.

Appendix I

Approaches to communicating identified knowledge gaps earlier in the IPBES assessment process

Context and process

1.   The workplan for the task force on knowledge and data for the intersessional period 2022-2023, as approved by the Plenary in IPBES-9/1, contains activities to support the production of a list of identified knowledge gaps and ensure its earliest possible availability.

2.   The current process of communicating knowledge gaps begins after the approval of an assessment, through dialogues in which assessment co-chairs present the knowledge gaps, followed by discussions between programmers, and funders and IPBES experts in various formats. Following these dialogues, the funders and programmers are encouraged to design relevant programmes in light of the knowledge gaps presented. The task force then monitors relevant programmes to identify potential uptakes of IPBES products.

3.   The first dialogues to communicate knowledge gaps were held in 2022, in which IPBES assessments that were completed in 2018 and 2019 were presented. It was important to present the knowledge gaps, but they may not have been as relevant as they were at the time the assessments were released. Earlier communication about knowledge gaps would:

(a)   Allow IPBES to build on the momentum of recently approved assessments;

(b)   Promote an earlier uptake of IPBES knowledge gaps in relevant programmes;

(c)   Allow new knowledge to be generated in time to be assessed in future IPBES assessments - as programmers and funders define their strategy for programmes and calls two to three years in advance.

4.   The technical support unit held several meetings from August 2022 to March 2023 with the management committee, the task force and assessment experts to reflect on the most relevant and feasible approaches to achieve earlier communication of knowledge gaps and how to appropriately align this with the IPBES assessment process.

5.   This appendix presents three suggestions for engaging earlier on knowledge gaps that have emerged from these meetings. The task force believes that the three identified approaches could be implemented together or independently.

A.   Initiate identification of knowledge gaps at the scoping phase

The scoping report of an assessment serves as a guide and framework for experts to conduct the assessment, and includes a section on the need to identify knowledge gaps. The Multidisciplinary Expert Panel, in consultation with the Bureau and with the scoping experts selected to assist with the scoping, where an additional scoping process is conducted, could consider including major knowledge gaps in the scoping report, if appropriate.

6.   The task force recognizes that the identification of knowledge gaps is dependent on the topic of the assessment and that knowledge gaps will be identified throughout the stages of an assessment (including at the end of an assessment).

7.   The task force also acknowledges the need for scoping reports to be as concise as possible. However, under any given topic, some knowledge gaps could be flagged from the outset. Given this, the task force proposes that the Multidisciplinary Expert Panel, in consultation with the scoping experts, list the most relevant knowledge gaps in the scoping report, noting that these gaps could evolve as the assessment is conducted. Assessment experts would not be constrained by the gaps listed in the scoping report and would work on further identifying additional knowledge gaps throughout the assessment process.

8.   This approach would allow earlier communication of information on knowledge gaps to research institutions that may be able to act more efficiently to mobilise financial means allowing the generation of new knowledge addressing these gaps.

B.   Promote participation of programmers and funders in the assessment review process

9.   This suggestion focusses on the organization of bi-annual webinars with **programmers, funders and the research community**. These webinars would provide participants with the latest information on literature cut-off dates and review periods for ongoing IPBES assessments, allowing them to plan their outputs accordingly. In addition, the dialogue workshops with stakeholders during the external review periods of assessments, could present more information on the knowledge gaps identified in the assessment to date, with the opportunity to ask questions. This way, the research community would be informed of possible upcoming knowledge gaps in ongoing assessments so that the research community can redirect part of its efforts on generating new knowledge possibly in time for use by the assessment.

C.   Map relevant knowledge generation programmes addressing gaps during an assessment

10.   This suggestion would consist in having the task force identify existing programmes and initiatives of programmers and funders relevant to identified knowledge gaps prior to the approval of an assessment. The **task force would map relevant knowledge generation programmes addressing draft knowledge gaps** during the draft stages of the assessment. As soon as an assessment is approved, the task force would thus be able, based on the developed roadmap, to efficiently start communicating the knowledge gaps to those identified programmes and organizing in a more tailored and timely manner.

11.   This approach would:

        (a)   Lead to a concrete discussion with relevant programmes and thus more efficient uptake of IPBES knowledge gaps;

        (b)   Enable the task force to be better prepared for the dialogues on knowledge gaps held with stakeholders upon the completion of an assessment.

Appendix II

Report of the online regional dialogue workshop with the Belmont Forum and its members

I. Introduction

1.   Following discussions with the technical support unit on knowledge and data, the Belmont Forum invited IPBES to participate in its members' plenary which took place on 21 and 22 June 2022 as part of the Sustainability Research & Innovation congress in South Africa. The purpose of this participation was to promote awareness and use of IPBES knowledge gaps with worldwide research and innovation programmers and funders. The first day of the Belmont Forum plenary was dedicated to the presentation of research needs and the second day was dedicated to updates on the Belmont Forum collaboration research actions.

2.   The present document provides an overview of the Belmont Forum, the discussions held during the meetings, the results of the meeting and a list of participants.

3.   The map below represents the countries that participated in the Belmont Forum plenary. Alongside these countries, the Inter-American Institute for Global Change Research (IAI) joined the plenary and represented its 19 Parties in the Americas (Argentina, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, Guatemala, Jamaica, Mexico, Panama, Paraguay, Peru, USA, Uruguay, Venezuela).

II. The Belmont Forum

4.   Established in 2009, the Belmont Forum is a high-level partnership of the world's major and emerging funders of global environmental change research, international science councils, and regional consortia committed to the advancement of transdisciplinary science. The Belmont Forum is composed of 30 funding agencies on six continents with connections to six regional-to-global partners.

5.   The Belmont Forum Challenge is the guiding statement for Forum activities. In 2017, a revised Challenge was approved by the membership to frame future actions of the Belmont Forum. It states that the Forum's goal is:

> *To support international transdisciplinary research providing knowledge for understanding, mitigating, and adapting to global environmental change.*

6.   In this document, the Belmont Forum also states its aim to improve the understanding of environmental and societal changes, underpinning science-based approaches for preventing and mitigating negative consequences and for best adapting societies. To achieve this, the Belmont Forum supports inter- and transdisciplinary research which takes account of coupled natural, social and economic systems, to promote and enhance the protection of earth's biodiversity and endangered ecosystems.

III. Collaborative research actions

7.   Collaborative research actions are the Forum's equivalent of a call for proposals.

8.   Each proposal submitted to a collaborative research action theme in the Belmont Forum Grant Operations must consist of a project co-developed by natural scientists, social scientists and stakeholders that hail from at least three countries.

9.   In practice, before launching a collaborative research action, the members developing the concept note for the call will hold regional scoping workshops. Scoping workshops are held to develop the components of a Belmont Forum call for proposals: programmatic interest from partner organizations to develop a "Group of Program Coordinators", the themes, award instruments, review process, call requirements and timeline, any training, capacity building, valorization, or reporting events, and identification of a thematic program office. Scoping workshops may include both experts and representatives from interested partner organizations. When details about the call elements are discussed, the workshop converts into a "closed" session where only representatives from partner organizations are in attendance.
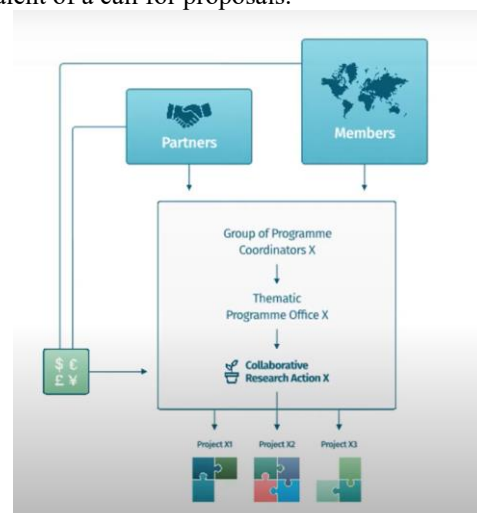
IV. Participation of IPBES in the Belmont Forum Plenary

10.   The Belmont Forum Plenary (BF Plenary) is an annual meeting of the members, members-in-waiting, partners, and invited guests. The plenary is the primary meeting for decision-making within the Belmont Forum. IPBES experts, secretariat and the part of the technical support unit for knowledge and data focussing on generation catalysis were invited to participate in the two-day plenary.

11.   On Tuesday, 21 June 2022 the plenary focused on different presentations: On IPBES, the outcomes of the 2021 United Nations Climate Conference, the Global Financing Facility and the Adaptation Research Alliance.

12.   This day started with a brief update from the Belmont Forum about its 3 to 6 year strategy. According to the feedback of the Belmont Forum members, this strategy should focus on transdisciplinary research with an emphasis on working with Indigenous peoples and local communities. Science to policy and science to community communication, and North & South collaboration against the climate crisis were recurrent priorities for Belmont Forum members.

13.   IPBES Executive Secretary Anne Larigauderie introduced IPBES and its work. Kate Brauman, one of the coordinating lead authors of the Global Assessment, supported by Hien Ngo, head of the technical support unit for the Global Assessment, presented the IPBES Global Assessment and Regional Assessments of Biodiversity and Ecosystem Services and the workshop reports on Biodiversity and Pandemics, and Biodiversity and Climate Change. Kate Brauman gave an overview of knowledge gaps identified in these assessments and workshop reports. The knowledge gaps were presented through four interconnected categories: i) observation, ii) understanding, iii) projections, and iv) solutions. Each category was illustrated by examples of knowledge gaps.

14.   Following this presentation, the Forum's members participated in parallel collaborative sessions. One collaborative session was dedicated to IPBES and the research needs arising from its assessments. Based on the presentation on knowledge gaps, members were invited to reflect on which knowledge gaps resonated with them, what would be the societal benefits of addressing the identified gaps, whom to involve and which organization could fund these needs. From the responses, IPBES gaps were considered key to the Belmont Forum's members, and the gaps that resonated the most with them were capacity-building outside of the academic realm and assessing policy effectiveness. They highlighted the different societal impacts that addressing these gaps could have: supporting the well-being of humans and other species, helping governments to improve and initiate regulation, and developing better practice by drawing upon local communities' knowledge. The São Paulo Research Foundation (FAPESP) emphasized that they are looking to improve local governments' engagement within Brazil and cited a concept note for a future call of the Belmont Forum about Amazonia and tropical areas that could benefit from the research of IPBES. Belmont Forum's members interested to fund research on IPBES knowledge gaps were the South African National Research Foundation and

FAPESP. Members also suggested that the Global Research Council may have an interest in providing funding.

15.   On Wednesday, 22 June 2022 the technical support unit was invited to join the second day of the plenary. This day was dedicated to updating Belmont Forum members on the state of the different collaborative research actions of 2021, 2022 and future collaborative research actions.

16.   During these presentations the following collaborative research actions were discussed and their potential links to IPBES knowledge gaps were identified:

(a)   Integrated Approaches to Human Migration/Mobility in an Era of Rapid Global Change (call launched in 2022);

(b)   Systems of Sustainable Consumption and Production (call launched in 2022);

(c)   Climate, Environment, Health II (scoping process in 2021, to be launched in April 2023);

(d)   Pathways II (scoping process in 2022, to be launched in 2023);

(e)   Urban Blue & Green (scoping process in 2022, to be launched in April 2023);

(f)   African Regional (in a scoping process in 2022).

17.   Two new potential collaborative research actions were discussed: Climate and Cultural Heritage and Amazonian Regional collaborative research actions. Both potential collaborative research actions were accepted at this plenary by members and entered the scoping phase.

V.   Outcomes

18.   *"Belmont Forum was very happy to welcome the participation of IPBES at its Members Meeting which was held at the Sustainability Research & Innovation Congress in June 2022. By bringing in IPBES experts who are working to identify international research needs/gaps - and building these discussions into the Belmont Forum process, we hope to facilitate identification and alignment of shared priorities, and enable our Members to think about how best to leverage the international landscape to support calls that will have greatest global environmental change impact!"* - Nicole Arbour, Executive Director, Belmont Forum

19.   The participation of IPBES at the Belmont Forum plenary was successful. It allowed the IPBES knowledge gaps from five assessments and two workshop reports to be showcased to an assembly representing 30 worldwide funders and programmers. During the plenary, Belmont Forum members, such as the South African National Research Foundation and the São Paulo Research Foundation, showed an interest in developing collaborative research actions to address the IPBES knowledge gaps and funding calls. The support document containing the collated IPBES knowledge gaps was given to all Belmont Forum members. The São Paulo Research Foundation expressed its interest in using the presentation and the document to support a proposal for a collaborative research action on the Amazon Region. A member of the Belmont forum leading the call highlighted that the possible results from this proposal will have relevance to other tropical areas and ecosystems, particularly in the Global South. He stressed that understanding the relationship between human health and biodiversity loss compounded by climate change and land use changes is complex, and difficult to model.

20.   Following the dialogue, the Belmont Forum conducted an expert workshop to help identify research priorities for the African collaborative research action and IPBES was invited to join. The co-chairs from the IPBES African Assessment participated in this workshop and made contributions based on the extensive document on the Regional Assessment for Africa and the Global Assessment. These contributions will be taken into account by the Belmont Forum members in charge of drafting the call, (São Paulo Research Foundation and Inter-American Institute for Global Change Research) which should be launched later in 2023.

21.   The Belmont Forum also conducted an expert workshop on Climate and Cultural Heritage, to which IPBES experts were invited but unable to attend. However, a member of the technical support unit attended to identify possible links with IPBES knowledge gaps. During this meeting, a member of the Belmont Forum referred to the Values Assessment and mentioned the possibility to build on this assessment for the call text.

22.   For the remaining collaborative research actions mentioned above, the technical support unit will follow up with the Belmont Forum and its members to monitor the uptake of IPBES knowledge gaps, and schedule other dialogues on recently approved IPBES assessments.

VI. List of participants

23.   According to the Secretariat of the Belmont Forum, the following members were present:

Countries	Organizations
Intergovernmental (19 parties)	Inter-American Institute for Global Change Research (IAI)
Brazil	São Paulo Research Foundation (FAPESP)
Canada	Natural Sciences and Engineering research Council of Canada (NSERC)
China	National Natural Science Foundation of China (NSFC)
France	French Research Alliance for the Environment (AllEnvi)
France	French National Agency for Research (ANR)
Japan	Japan Science and Technology Agency (JST)
Norway	Research Council of Norway (RCN)
Sweden	Swedish Research Council for Environment, Agricultural Sciences, and Spatial Planning (Formas)
South Africa	National Research Foundation
Thailand	Thailand Science Research and Innovation (TSRI)
Türkiye	The Scientific and Technological Research Council of Turkiye
United Kingdom	Natural Environment Research Council of UK
United States of America	National Science Foundation of America

Appendix III

Online dialogue workshop for IPBES national focal points and other relevant actors in Africa

I. Background

1.   The dialogue workshop for IPBES national focal points and other relevant actors in Africa was organized to contribute to the implementation of the IPBES rolling work programme up to 2030, in particular for:

(a)   The implementation of objective 3 (a), advanced work on knowledge and data, as it will support catalysing the generation of new knowledge by making knowledge gaps identified in IPBES assessments known;

(b)   The implementation of objective 4 (a), advanced work on policy instruments, policy support tools and methodologies, as it will support the use of IPBES assessments in policymaking;

(c)   The implementation of objective 2 (c) strengthened national and regional capacities, as it will provide an opportunity for sharing best practices on catalysing knowledge generation and enhance understanding of opportunities to engage with the work of IPBES among national focal points.

2.   The online dialogue was held on 13 June 2023. It was the first dialogue to jointly address three objectives of the IPBES work programme: capacity-building, strengthening knowledge foundations and supporting policy.

II. Participants, opening remarks and setting the scene

3.   The dialogue workshop brought together 39 participants, including IPBES national focal points, government representatives from different sectors, members of the Multidisciplinary Expert Panel and the Bureau, members of the task force on knowledge generation catalysis, IPBES experts, and representatives of relevant international and regional organizations. Dr. Luthando Dziba, co-chair of the Multidisciplinary Expert Panel, welcomed participants. He introduced the agenda and speakers, and outlined the purpose of this dialogue: to provide an informal space to exchange views and experiences and to better understand how the findings of IPBES assessments and the knowledge gaps identified in those assessments are used by IPBES members in Africa, at the subregional and national level, while also identifying key factors that may be limiting their use. In his opening remarks on behalf of the Bureau of IPBES, Dr. Sebsebe Demissew highlighted the work of the task force on knowledge generation: to support the identification of knowledge gaps in each assessment, and to communicate them to funders and programmers to inform future research priorities

4.   Dr. Jean-Marc Fromentin and John Donaldson, co-chairs of the Thematical Assessment of the Sustainable Use of Wild Species presented the assessment and its knowledge gaps, highlighting knowledge gaps relevant for the African region.

5.   Dr. Mike Christie, co-chair of the Methodological Assessment of the Diverse Values and Valuation of Nature, presented the assessment and its knowledge gaps, with a focus of knowledge gaps relevant for the African region. The presentations set the scene for the discussions on policy and research priorities.

III. Initiatives and efforts to help address the knowledge gaps identified

Representatives from two organizations, which work within the region, shared examples on how they contribute to addressing the knowledge gaps identified in IPBES assessments.

6.   Tim Hirsch, deputy director at the Global Biodiversity Information Facility, presented on how to fill knowledge gaps by mobilizing primary biodiversity data. He emphasized the importance of addressing gaps in biodiversity data specifically in Africa. To bridge these gaps, he emphasized the need for programs that support capacity-building in African institutions, governments and agencies to collect and organize data using common standards. He highlighted the Biodiversity Information for Development programme, which has been successful in bringing together over 100 projects and several hundred datasets from sub-Saharan Africa, resulting in approximately 2 million species

records. He encouraged collaboration between Global Biodiversity Information Facility nodes in Africa and national focal points of IPBES to generate more data and fully utilize data generation opportunities. He also stressed the importance of working together at national, regional, and sub-regional levels with funders and research programs to address geographic, thematic, and taxonomic gaps identified by the IPBES process. By mobilizing foundational data and promoting collaboration, the Global Biodiversity Information Facility aims to facilitate the filling of knowledge gaps and enhance biodiversity information in Africa.

7.   Yuko Kurauchi from the Biodiversity and Ecosystem Services Network, BES-Net, emphasized the efforts of the BES-Net project in Africa, including support for national ecosystem assessments, the provision of solution funds to African countries, and the promotion of tripartite dialogues. These initiatives aim to address knowledge gaps and enhance understanding of biodiversity and ecosystem services in the region. Yuko highlighted three key areas of their work in addressing knowledge gaps:

        (a)   Filling knowledge gaps through national ecosystem assessments. These assessments are nationally driven processes aimed at developing comprehensive and up-to-date syntheses of knowledge on biodiversity and ecosystem services. BES-Net has supported 12 countries, including four African countries (Botswana, Cameroon, Ethiopia, and Malawi), in undertaking national assessments;

        (b)   The BES Solution Fund, which is used to distribute seed grants to countries. The goal is to extend support to a total of 18 countries by 2028. The fund aims to support biodiversity solutions based on key findings and messages from IPBES assessments and national ecosystem assessments. She gave an example of how the funds were used in Kenya and Nigeria for research related to the IPBES pollinator assessment, focusing on wild pollinators and pollinator-dependent plant species;

        (c)   The Tripartite Dialogue, also known as the trialogue. This dialogue brings together policymakers, scientists and practitioners in both physical and virtual spaces. Yuko Kurauchi emphasized the importance of these dialogues in fostering mutual understanding, multi-stakeholder engagement, and collaboration for evidence co-creation and solution design. She mentioned organizing events for Anglophone and Francophone African countries as part of this dialogue initiative.

IV.   National experiences using IPBES products for policymaking

8.   Representatives from three countries within the region (Democratic Republic of the Congo, Malawi and South Africa) shared their experiences of using IPBES assessments as examples of how IPBES products have been used in policymaking in Africa, in order to encourage a discussion among dialogue participants.

9.   Daniel Mukubikikuni, secondary national focal point of the Democratic Republic of the Congo, presented on the establishment of a national platform for biodiversity and ecosystem services in the Democratic Republic of the Congo. This platform is being created to bridge the knowledge gaps and facilitate the science-policy interface in the country. He explained that the establishment of the platform was recommended following a conference held in the Democratic Republic of the Congo in 2018, to promote the uptake of the IPBES Regional Assessment of Biodiversity and Ecosystem Services for Africa. The national platform is being set up with the support of the Capacity Development for Biodiversity and Ecosystem Services (CABES) project. The platform aims to compile and disseminate up-to-date information on biodiversity and ecosystem services, inform decision-making processes, and promote communication and information exchange. The platform will consist of representatives from government, scientists, universities, research centres, Indigenous communities, civil society organizations, and technical and financial partners. It will operate based on principles of relevance, broad stakeholder participation, and multi-sectoral collaboration, drawing inspiration from IPBES. The platform will be hosted at the Ministry of the Environment and Sustainable Development.

10.   Lilian Chimphepo, national focal point of Malawi, gave an introduction of the national ecosystem assessment of Malawi. In 2021, a working group was formed, and a framing workshop was conducted to engage local communities, since Indigenous people are not present in the country. During the workshop, 43 local knowledge holders from three regions shared their experiences in managing biodiversity using their local knowledge and practices. Recognizing the knowledge gaps due to the absence of elderly participants in the workshop, separate interviews were conducted with them in 2022 to capture their insights. Three sites were identified as potential case studies for the assessment, namely Salima, Lilongwe and Nsanje. The intervention also highlighted the key milestones achieved, such as reaching out to 180 Indigenous and local knowledge holders, identifying potential Indigenous and local knowledge sites, and creating awareness through an Indigenous and

local knowledge documentary. Thematic areas of focus included the link between cultural practices and biodiversity conservation, intergenerational knowledge transfer, disaster risk reduction, and the multiple values of nature to Indigenous peoples and local communities. The process of conducting a national ecosystem assessment in Malawi included work on recognizing and incorporating Indigenous and local knowledge, reviving intergenerational knowledge transfer, and promoting inclusive and participatory approaches. Lessons learned from the assessment process contribute to a more comprehensive understanding of ecosystems and enhanced conservation and sustainable management efforts in the country.

11.   Ntakadzeni Tshidada, secondary national focal point for South Africa, indicated that South Africa is empowered by Section 50 of the National Environmental Management: Biodiversity Act to promote research done by the South African National Biodiversity Institute (SANBI). She highlighted the role of SANBI in promoting biodiversity research and conservation in South Africa. With the recent cabinet approval of the White Paper on the conservation and sustainable use of South Africa's biodiversity, SANBI aims to enhance biodiversity research, knowledge systems, and evidence-based decision-making. The policy recognizes the importance of the sustainable use of biodiversity and incorporates key elements from the IPBES Sustainable Use Assessment, such as inclusive decision-making, recognition of multiple knowledge forms, and fair distribution of benefits. Furthermore, she pointed out that the assessment findings are integrated into various national documents: the incorporation of the key findings of the IPBES Pollination Assessment into the national biodiversity assessment, the development of a draft policy position on the conservation and sustainable use of iconic species like elephants, lions, and leopards, and the upcoming publication of the national report on biological invasion, influenced by the IPBES assessment of invasive alien species. These examples highlight the utilization of assessment outcomes to inform key policy documents in South Africa.

V.   Summary of the discussion on challenges identified and ways to overcome them

12.   Two main challenges were reported by national focal points: lack of data and limited availability and accessibility of data. One of the participants highlighted that lack of data is linked to the process of selecting IPBES authors: areas from where no authors are selected are not considered in the assessments, due to insufficient knowledge. At the same time, it was acknowledged that not every area, country, or discipline can be fully represented in the assessments, given the limited number of experts involved in each assessment. As a potential solution it was proposed to involve national focal points who can help fill the gaps by gathering data at the national level and providing it to the authors. This approach would enhance the richness of the assessments. Another issue raised was the challenge of data availability and accessibility, particularly in Africa. It was mentioned that some experts from Africa may be hesitant to volunteer their time to participate in an IPBES assessment, and efforts need to be made to address this challenge. The co-chairs stressed the importance of involving experts from all regions and emphasized that publications from the African region provide valuable information to IPBES experts and a greater availability of articles from this region would be beneficial. They emphasized that addressing these issues requires collective responsibility from IPBES, the national focal points, and member states.

13.   A national focal point pointed out that there are common gaps in data and information, due to the data often being scattered across different institutions. Many institutions in Africa do not freely provide data, and although mechanisms exist to address this, it is acknowledged as a valid concern for African experts.

14.   During the discussion, a national focal point highlighted the challenge of knowledge gaps specific to their country, particularly regarding combating wildlife trafficking and the use of wildlife species. She thanked the authors for this important knowledge sharing session and appreciated the insights provided, which will guide future actions.

15.   As a follow-up to the discussions, Dr. Luthando Dziba acknowledged the valuable information shared and suggested that further discussions on this topic be organized by the Bureau members from Africa at IPBES 10 to disseminate the knowledge, engage more stakeholders and continue the discussions.

VI.   Brief introduction to the work of the task force on capacity-building

16.   Ingunn Storrø, head of the IPBES technical support unit on capacity-building, provided an overview of the ways of engaging with IPBES and specific opportunities for engagement in 2023. The first opportunity was to nominate experts for IPBES assessments and scoping processes. The second opportunity was to participate in the external review of assessments, for example in the review of the nexus and the transformative change assessments, which are expected to start in towards the end of 2023. The third opportunity was to support the uptake of IPBES assessments. Countries can organize launch events or uptake events to disseminate the key findings and raise awareness. She concluded by mentioning upcoming meetings, including a dialogue to support science policy platforms and networks, as well as an in-person dialogue meeting with national focal points in December. To stay informed, she recommended to join the mailing list, visit the IPBES website, utilize the IPBES manual for national focal points, and reach out to the Bureau members or the secretariat for assistance.

Appendix IV

Online dialogue workshop for IPBES national focal points and other relevant actors in Asia Pacific

I.   Background

1.   The dialogue workshop for IPBES National Focal Points and other relevant actors in Asia Pacific was organized to contribute to the implementation of the IPBES rolling work programme up to 2030, in particular for:

(a)   The implementation of objective 3 (a), advanced work on knowledge and data, as it will support catalysing the generation of new knowledge by making knowledge gaps identified in IPBES assessments known;

(b)   The implementation of objective 4 (a), advanced work on policy instruments, policy support tools and methodologies, as it will support the use of IPBES assessments in policymaking;

(c)   The implementation of objective 2 (c) strengthened national and regional capacities, as it will provide an opportunity for sharing best practices on catalysing knowledge generation and enhance understanding of opportunities to engage with the work of IPBES among national focal points.

2.   The online dialogue was held on 20 June 2023. In Asia Pacific, it was the first dialogue to jointly address three objectives of the IPBES work programme: capacity-building, strengthening the knowledge foundations and supporting policy.

II.   Participants, opening remarks and setting the scene

3.   The dialogue workshop brought together 51 participants, including IPBES national focal points, government representatives from different sectors, members of the Multidisciplinary Expert Panel and the Bureau, members of the task force on knowledge generation catalysis, IPBES experts, and representatives of international and regional organizations. Dr. Shizuka Hashimoto, co-chair of the Multidisciplinary Expert Panel, welcomed participants. He introduced the agenda and speakers, and outlined the purpose of this dialogue: to provide an informal space to exchange views and experiences and to better understand how the findings of IPBES assessments and the knowledge gaps identified in those assessments are used by IPBES members in the Asia-Pacific region, at the subregional and national level, while also identifying key factors that may be limiting their use. In his opening remarks on behalf of the Bureau of IPBES, Dr. Vinod Mathur highlighted the work of the task force on knowledge generation: to support the identification of the knowledge gaps in each assessment, and to communicate them to funders and programmers to inform future research priorities.

4.   Dr. Jean-Marc Fromentin, co-chair of the Thematical Assessment of the Sustainable Use of Wild Species presented the assessment and its knowledge gaps, highlighting knowledge gaps relevant for the Asia Pacific region. He noted that most of the knowledge gaps apply globally, but highted the major gaps relevant to the Asia Pacific region: marine fishing, lack of information in South Asia for specific species, artisanal fishing, logging in South Asia, observation of non-extractive practice in South Asia in the Pacific.

5.   Dr. Unai Pascual, co-chair of the Methodological Assessment of the Diverse Values and Valuation of Nature, presented the assessment and its knowledge gaps, with a focus of knowledge gaps relevant for the Asia Pacific region. The presentations set the scene for the discussions on policy and research priorities.

III.   Initiatives and efforts to help address the knowledge gaps identified

6.   Representatives from two organizations, which work within the region, shared examples on how they contribute to addressing the knowledge gaps identified in IPBES assessments to national focal points.

7.   Hilary Goodson, from the Global Biodiversity Information Facility, presented on how to fill knowledge gaps by mobilizing primary biodiversity data. She introduced the Global Biodiversity Information Facility as an intergovernmental organization focused on biodiversity data. She mentioned

that while the Global Biodiversity Information Facility has global coverage, there are gaps in formal government participation in Asia. The Global Biodiversity Information Facility infrastructure involves collaboration with over 2000 publishing institutions to shape data sets to common standards. She highlighted the importance of filling critical data gaps in Asia, particularly in taxa and biogeography, and building communities of practice to integrate biodiversity data into policies and decision-making processes. She presented one of the programmes that the Global Biodiversity Information Facility runs, the Biodiversity Information Fund for Asia. She discussed different capacity enhancement programmes and initiatives to improve data transparency and traceability. She emphasized the need for stronger linkages between IPBES and GBIF, especially in Asia, to target data gaps and enhance data use in the region, and provided opportunities for IPBES national focal points to consider.

8.   Yuko Kurauchi from the Biodiversity and Ecosystem Services Network, BES-Net, highlighted the efforts of BES-Net in the Asia Pacific region, including support for national ecosystem assessments, the provision of seed funding under the "Solution Fund" to Asia Pacific countries, and the promotion of tripartite dialogues. These initiatives aim to address knowledge gaps and enhance understanding of biodiversity and ecosystem services in the region. She highlighted three key areas of their work in addressing knowledge gaps:

        (a)   Filling knowledge gaps through national ecosystem assessments. These assessments are nationally driven processes aimed at developing comprehensive and up-to-date syntheses of knowledge on biodiversity and ecosystem services. BES-Net has supported 12 countries, including three countries in Asia Pacific (Cambodia, Thailand and Vietnam), in undertaking national assessments;

        (b)   The BES Solution Fund, which is used to distribute seed grants to countries. The goal is to extend support to a total of 18 countries by 2028. The fund aims to support biodiversity solutions based on key findings and messages from IPBES assessments and national ecosystem assessments. Yuko Kurauchi gave an example of how the funds were used for Kazakhstan and Vietnam in the 2021–2023 phase;

        (c)   The Tripartite Dialogue, also known as the trialogue, promoted by BES-Net. This dialogue brings together policymakers, scientists, and practitioners in both physical and virtual spaces. Yuko Kurauchi emphasized the importance of these dialogues in fostering mutual understanding, multi-stakeholder engagement, and collaboration for evidence co-creation and solution design. She concluded by highlighting that BES-net aims to strengthen the engagement of IPBES and other partners in Asia Pacific region, expressing BES-Net's desire to connect and discuss on these initiatives with IPBES.

9.   Xioajun Deng, deputy head of knowledge management at the Asia-Pacific Network for Global Change Research, shared his experience and point of view. In his intervention, he emphasized their commitment to addressing knowledge gaps in biodiversity and global change with the Asia-Pacific Network . The Asia-Pacific Network, consisting of 22 governments in the Asia-Pacific region, aims to support projects aligned with post-2020 biodiversity targets and nature-based initiatives. The Asia-Pacific Network for Global Change Research sees IPBES as a valuable partner in raising awareness among its members and government focal points, enabling a better understanding of IPBES outputs and findings to fill these knowledge gaps. The Asia-Pacific Network also highlighted the potential for collaboration in engaging young scientists and promoting open access to research data. They are developing a network of early-career professionals and seek to encourage the use of platforms like Global Biodiversity Information Facility to deposit and disseminate open biodiversity data, contributing to a more sustainable framework and infrastructure.

IV.   National experiences using IPBES products for policymaking

10.   Representatives from two countries within the region (India and Japan) shared their experiences of using IPBES assessments as examples of how IPBES products have been used in policymaking in Asia Pacific.

11.   Dr. Vinod Mathur, IPBES Vice-Chair from India, showcased India's proactive approach in utilizing IPBES assessments to understand and address the significance of pollinators in agriculture, as well as their commitment to conducting national and subnational ecosystem assessments to inform policy-making and contribute to international discussions on biodiversity. He specifically focused on India's efforts to address the importance of pollinators in agriculture, using the examples of coffee plantations in the southern region and apple orchards in the northern region. He emphasized the need for subnational assessments within the Asia Pacific region, drawing upon the IPBES framework and literature reviews. Dr. Mathur expressed India's intention to conduct a national ecosystem assessment.

Such assessments would play a crucial role in shaping national policies, and as India currently holds the presidency of the G20, Dr. Mathur highlighted the opportunity to share knowledge and findings from these assessments with other G20 countries. He expressed gratitude for the work of IPBES, particularly emphasizing the relevance of the pollinator assessment in guiding policy decisions in India.

12.   Mr. Ichiro Hama, national focal point of Japan, presented three examples of Japan's initiatives related to biodiversity:

        (a)   The first example was the revision of Japan's national biodiversity strategy and action plan in line with the Kunming-Montreal Global Biodiversity Framework. The revised plan incorporates elements linked to the 2050 Vision for Biodiversity and sets stakeholder-oriented and action-oriented targets to address societal challenges using nature-based solutions. The IPBES reports have played a crucial role in providing scientific evidence and knowledge for Japan's national biodiversity strategy and action plan, such as highlighting the global degradation of biodiversity and the need to integrate climate change and biodiversity actions;

        (b)   The second example is Japan's national ecosystem assessment, known as Japan Biodiversity Outlook. The third edition of the assessment utilized the IPBES conceptual framework to assess the indirect causes of biodiversity loss in Japan and has influenced the implementation of the assessment. The results of Japan Biodiversity Outlook 3 were integrated into Japan's national biodiversity strategy and action plan as a basis for understanding the status of biodiversity in Japan;

        (c)   The third example involves an event organized by the Ministry of the Environment in Japan to introduce the results of the IPBES Values Assessment to the general public. Recognizing the abstract nature of the assessment, the event aimed to foster understanding by discussing the multiple values of nature, including perspectives from the Ainu Indigenous peoples. With more than 200 attendees from various sectors, the event successfully disseminated scientific findings and educated citizens about the value of biodiversity.

13.   National focal points were invited to record their examples for using IPBES assessments in decision-making in the IPBES Impact Tracking Database,[1] so that the information is available to other countries.

14.   Dr. Mathur noted that India, like Japan, is also looking to utilize IPBES assessments in the revision of their national biodiversity strategy and Action Plans to align with the Kunming-Montreal Global Biodiversity Framework. He concluded by emphasizing that Japan's example is inspiring other countries, including India, to utilize IPBES assessments for their biodiversity strategies.

15.   Dr. Hashimoto, chair of the meeting, concluded by sharing that IPBES had conducted an online survey a couple of years ago to understand the use and impacts of the IPBES conceptual framework. The survey results were presented at IPBES 9 as an information document and noted that there are numerous national and regional ecosystem assessments that have incorporated the conceptual framework to structure their assessment reports. Dr. Hashimoto expressed his pleasure at the growing use of the conceptual framework and expressed hope that the same trend will continue in the Asia-Pacific region.

V.   Brief introduction to the work of the task force on capacity-building

16.   Ingunn Storrø, head of the IPBES technical support unit on capacity-building, provided an overview of the ways of engaging with IPBES and specific opportunities for engagement in 2023. The first opportunity was to nominate experts for IPBES assessments and scoping processes. The second opportunity was to participate in the external review of assessments, for example in the review of the nexus and the transformative change assessments, which are expected to start in towards the end of 2023. The third opportunity was to support the uptake of IPBES assessments. Countries can organize launch events or uptake events to disseminate the key findings and raise awareness. She concluded by mentioning upcoming meetings, including a dialogue to support science policy platforms and networks, as well as an in-person dialogue meeting with national focal points in December. To stay informed, she recommended to join the mailing list, visit the IPBES website, utilize the IPBES manual for national focal points, and reach out to the Bureau members or the secretariat for assistance.

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[1] https://www.ipbes.net/impact-tracking