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BARRIERS TO THE USE OF GLOBAL INDICATORS AND DATASETS TO SUPPORT NBSAP IMPLEMENTATION AND NATIONAL REPORTING PROCESSES

Note by the Executive Secretary

1. The Executive Secretary hereby provides, for the information of participants in the nineteenth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA), a note received from the United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC) on the above subject. The information is provided by the Executive Secretary in the language and format in which it was received.

* UNEP/CBD/SBSTTA/19/1.

Barriers to the use of global indicators and datasets to support NBSAP implementation and national reporting processes

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The United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC) is the specialist biodiversity assessment centre of the United Nations Environment Programme (UNEP), the world's foremost intergovernmental environmental organisation. The Centre has been in operation for over 30 years, combining scientific research with practical policy advice.

Executive Summary

- A lack of national level biodiversity data can pose serious challenges for countries when developing and implementing a National Biodiversity Strategy and Action Plan (NBSAP), or preparing a National Report.
- Many of the global indicators brought together under the Biodiversity Indicators Partnership (BIP) are comprised of national level data, or in other cases can be disaggregated at the national level.
- It is important to recognize that global datasets cannot always replace local or national data. However there are global indicators and/or datasets available that can be used to support national indicator development, national reporting, and NBSAP updating and implementation.
- Five key barriers to the use of global indicators and datasets at the national level were identified through a survey of Convention on Biological Diversity (CBD) National Focal Points:
    - Barrier 1: "*Uncertainty regarding the coverage* [and/or] *accuracy of indicators and datasets at the global scale for national or sub-national reporting*".
    - Barrier 2: "*Uncertainty regarding the applicability of indicators and datasets at the global scale for national or sub-national reporting*".
    - Barrier 3: "*Uncertainty regarding the value added by global indicators and datasets to national or sub-national indicators and datasets*".
    - Barrier 4: "*Availability and accessibility of data taken from global dataset have been deemed too difficult/poor*"
    - Barrier 5: "[Lack of] *technical capacity*"
- Global datasets and associated data may assist countries to bypass some of the limitations that arise from paucity of data at the national level and thereby provide valuable information to monitor progress and inform conservation policy.
- Political, as well as technical, issues can constrain the ability of national level biodiversity practitioners to utilise nationally-derived data. Creating awareness of global datasets can assist in NBSAP implementation and reporting processes.
- Global level indicator developers and data providers can help address these barriers by taking the following steps:
    - Communicating the benefits of using global indicators and datasets through: international organisations, initiatives and networks; materials such as guidance documents, press releases etc.; side events or workshops in the margins of international meetings.
    - Undertaking national level pilot studies to road-test and adapt methodologies to the national level and demonstrate value to national stakeholders.
    - Encouraging lesson sharing between countries in similar circumstances where global indicators and/or datasets have been successfully used at the national level.
    - Considering using open access and/or preferential rates and agreements for national level indicator developers.
    - Providing ongoing support, such as training and capacity building, to national level data users who may lack technical capacity.

Résumé

- Un manque de données sur la biodiversité au niveau national peut présenter d'importants défis aux pays dans le développement et dans la mise en œuvre des Stratégies et Plans d'Action Nationaux pour la Biodiversité (SPANB) ou dans la préparation d'un Rapport national.
- Un grand nombre des indicateurs mondiaux, regroupés par le Partenariat relatif aux indicateurs de biodiversité (BIP), sont composés de données nationales, ou, en quelques cas, s'ils ne sont pas dérivés de données nationales, on peut les désagréger au niveau national.
- Il faut reconnaitre que les ensembles de données mondiaux ne peuvent pas toujours remplacer les données locales ou nationales. Cependant, il existe des indicateurs et/ou des ensembles de données mondiaux qui peuvent s'utiliser afin de soutenir l'élaboration des indicateurs nationaux, la présentation des rapports nationaux et la mise à jour et la mise en œuvre des SPANB.
- On a identifié 5 obstacles clés à l'utilisation des indicateurs et des ensembles de données mondiaux au niveau national au moyen d'un sondage des Points focaux à la Convention sur la Diversité Biologique :
    - Obstacle 1 : « *Une incertitude en ce qui concerne la couverture spatiale [et/ou] l'exactitude des indicateurs et des ensembles de données à l'échelle mondiale pour la présentation des rapports nationaux ou sous-nationaux* ».
    - Obstacle 2 : « *Une incertitude en ce qui concerne l'applicabilité des indicateurs et des ensembles de données mondiaux à la présentation des rapports nationaux ou sous-nationaux* ».
    - Obstacle 3 : « *Une incertitude en ce qui concerne la valeur ajoutée par les indicateurs et les ensembles de données mondiaux aux indicateurs et aux ensembles de données nationaux ou sous-nationaux* ».
    - Obstacle 4 : « *La disponibilité et l'accessibilité des données provenant des ensembles mondiaux sont trop difficiles ou insuffisants* »
    - Obstacle 5 : « *[Un manque de] capacités techniques*
- Les ensembles de données mondiaux, et les données y associées, peuvent aider les pays à surmonter certaines limitations découlant du manque de données au niveau national, et donc peuvent fournir d'importantes informations afin de suivre le progrès et d'informer la politique de conservation.
- Les questions politiques, ainsi que techniques, peuvent limiter la capacité des praticiens nationaux d'utiliser les données recueillies sur le plan national. La sensibilisation aux ensembles de données nationaux peut soutenir la mise en œuvre de la SPANB et la présentation des rapports.
- Sur le plan mondial, les producteurs d'indicateurs et les fournisseurs de données peuvent aider à éliminer ces obstacles en prenant les mesures suivantes :
    - En communiquant les avantages d'utiliser les indicateurs et les ensembles de données mondiaux au moyen des organisations, des initiatives et des réseaux internationaux, des matériaux tels que les documents d'orientation, les communiqués de presse, etc. et des évènements parallèles ou des ateliers en marge des réunions internationales.
    - En entreprenant les études pilotes nationales afin de tester et d'adapter les méthodologies au niveau national et afin de démontrer la valeur aux parties prenantes nationaux.
    - En encourageant l'échange des leçons entre les pays dont les circonstances sont comparables, où des indicateurs et/ou des ensembles de données mondiaux ont été utilisées avec succès au niveau national.
    - En considérant l'utilisation des accords pour permettre le libre accès et/ou les tarifs préférentiels pour les développeurs des indicateurs nationaux.

En offrant le soutien continu aux utilisateurs de données au niveau national qui n'ont peut-être pas la capacité technique nécessaire, par exemple la formation et le renforcement des capacités.

Resumen Ejecutivo

- Una falta de datos de biodiversidad a nivel nacional puede suponer serios desafíos para Países cuando están desarrollando e implementando una Estrategia y Plan de Acción Nacional en Materia de Diversidad Biológica (EPANDB), o durante la preparación de Informes Nacionales.
- Muchos de los indicadores globales juntados bajo la Asociación de Indicadores de Biodiversidad (BIP, Biodiversity Indicators Partnership) están compuestos de datos nacionales, o en otros casos pueden ser desagregados a nivel nacional.
- Es importante reconocer que las bases de datos globales no siempre pueden reemplazar datos locales o nacionales. De todas formas, hay indicadores globales y/o bases de datos disponibles que pueden ser utilizados para apoyar el desarrollo de indicadores nacionales, informes nacionales, y la actualización e implementación de EPANDB.
- Se identificaron cinco barreras claves para el uso de indicadores globales y bases de datos al nivel nacional a través de una encuesta de Puntos Focales de la Convención de Diversidad Biológica (CDB):
    - Barrera 1: "La incertidumbre sobre la cobertura [y/o] actualización de indicadores y bases de datos a nivel global para informes nacionales o sub-nacionales"
    - Barrera 2: "La incertidumbre sobre la... aplicación de indicadores y bases de datos a nivel global para informes nacionales o sub-nacionales"
    - Barrera 3: "Incertidumbre sobre el valor añadido de los indicadores globales y bases de datos a los indicadores y bases de datos nacionales o sub-nacionales"
    - Barrera 4: "la disponibilidad y accesibilidad de datos tomados de bases de datos globales han sido considerados como demasiado difíciles/pobres".
    - Barrera 5: "[Falta de] capacidad técnica".
- Las bases de datos globales y datos asociados pueden ayudar a los países a traspasar algunas de las limitaciones que resultan de la escasez de datos a nivel nacional y así proveer información valiosa para monitorear el progreso e informar las leyes de la conservación.
- Algunas cuestiones políticas, además de las técnicas, pueden restringir la habilidad de los profesionales de la biodiversidad a nivel nacional para utilizar datos derivados nacionales. Aumentar la conciencia sobre las bases de datos globales puede ayudar en la implementación y comunicación del proceso de la EPANDB.
    - Comunicar los beneficios de utilizar indicadores globales y bases de datos a través de: organizaciones internacionales, iniciativas y redes; materiales como documentos de guía, ruedas de prensa etc.; eventos adicionales o talleres a los márgenes de las reuniones internacionales.
    - Llevar a cabo estudios piloto a nivel nacional para probar y adaptar las metodologías al nivel nacional y demostrar su valor a las partes interesadas.
    - Fomentar que se compartan lecciones entre países en circunstancias similares donde los indiciadores globales y/o bases de datos han sido utilizadas con éxito en el nivel nacional.
    - Considerar el uso de contenido abierto y/o tarifas preferenciales y acuerdos para el desarrollo de indicadores a nivel nacional.

Dando apoyo continuado, como mediante la formación o desarrollo de capacidades, a usuarios de datos nacionales que pueden tener una falta de capacidad técnica.

执行摘要

- 缺乏国家层面的生物多样性数据能够制定和实施国家生物多样性战略和行动计划（NBSAP）时，或编写国家报告提出的国家严峻的挑战。
- 许多下的生物多样性指标伙伴关系（BIP）汇聚了全球指标是由国家一级的数据，或在其他情况下，可以在国家层面进行分类。
- 认识到全球数据不能经常更换当地或国家的数据是很重要的。但也有可用于支持国家制定指标，国家报告，并NBSAP更新和实施全球指标和/或数据集提供。
- 五个主要障碍在国家一级利用全球指标和数据集被确定通过国家生物多样性公约（CBD）联络点的调查：
    - 障碍1：“关于覆盖面的指标和数据集[和/或]精度在全球范围内对国家或次国家报告的不确定性”。
    - 障碍2：“关于.....的适用性的指标和数据集在全球范围内对国家或次国家报告的不确定性”。
    - 障碍三：“关于由全球指标和数据集加入到国家或次国家指标和数据集的价值不确定性”。
    - 障碍四：“可用性和全球数据集中获取的数据的访问都被认为太难/穷”
    - 障碍5：“[缺乏]技术能力”
- 全球数据集和相关的数据可以帮助国家绕过一些是源于数据的缺乏在国家层面，从而提供有价值的信息，监测进展情况，并告知保育政策的限制。
- 政治，以及技术，问题可以约束的国家层面的生物多样性从业人员利用国家来源的数据的能力。创建全球数据的意识，可以协助国家生物多样性战略实施和报告程序。
- 全球水平指示器开发商和数据提供商可以帮助解决这些障碍，通过采取以下步骤：
    - 使用通讯通过全球指标和数据集的好处：国际组织，倡议和网络;材料，如指导性文件，新闻发布等;会外活动或研讨会在国际会议的间隙。
    - 开展国家一级试点研究，以实地测试和调整方法，以国家一级和展示价值的国家利益攸关方。
    - 鼓励教训，在类似的情况下全球指标和/或数据集已成功应用于国家水平的国家之间共享。
    - 采用开放式访问和/或优惠税率，并为国家一级指标的开发协议Ø考虑。
    - 提供了持续的支持，如培训和能力建设，为国家一级数据的用户谁可能缺乏技术能力。

الـ تـ نـ فـ يذي الـ مـ لخص

و ضع عـ ندلـ لـ بـ لدان خط يرة تـ حديـ ات تـ شكل أن يـ مكن الـ وطـ ني الـ مـ سـ توى الـ بـ يولـ وجي الـ تـ نوع بـ ياـ نات إلـ ى الافـ تـ قار · .الـ وطـ ني الـ تـ قرير ر إعداد أو ،(NBSAP) الـ وطـ ني الـ بـ يولـ وجي الـ تـ نوع عمل وخطة اـ سـ تراتـ يجـ ية وتـ نـ فـ يذ

عـ لى الـ بـ ياـ نات من (BIP) الـ بـ يولـ وجي الـ تـ نوع مؤ شرات الـ شراكات تـ حت جمعت الـ عالـ مـ ية الـ مؤ شرات من الـ عديـ د تـ تألـ ف · .الـ وطـ ني الـ مـ سـ توى عـ لى تـ صـ نف أن يـ مكن أخرى حالاـ ت فـ ي أو الـ وطـ ني، الـ مـ سـ توى

هناك ولـ كن .الـ وطـ ن ية أو الـ محـ لـ ية الـ بـ ياـ نات دائـ ما محل تـ حل أن يـ مكن لا الـ عالـ مـ ية الـ بـ ياـ نات قـ واعد أن نـ درك أن الـ مهم من · الـ تـ قاريـ ر الـ مؤ شر، الـ وطـ ن ية الـ تـ نمـ ية لـ دعم اـ سـ تخدامها يـ مكن الـ تـ ي الـ مـ تاحة الـ عالـ مـ ية الـ بـ ياـ نات قـ واعد أو / و مؤ شرات .والـ تـ نـ فـ يذ تـ حديـ ث NBSAPو الـ وطـ ن ية،

الـ وطـ ني الـ مـ سـ توى عـ لى الـ عالـ مـ ية الـ بـ ياـ نات وقـ واعد الـ مؤ شرات اـ سـ تخدام عـ لى الـ رئـ يـ سـ ية الـ حواجز خمس • تـ حديـ د تـ مـ وقـ د :الاتـ صال جهات (CBD) الـ بـ يولـ وجي الـ تـ نوع لاتـ فاقـ ية لـ لاـ لوطـ ن ية مـ سح خلال من

الـ تـ قاريـ ر لإعداد عالـ مي نـ طاق عـ لى الـ بـ ياـ نات وقـ واعد الـ مؤ شرات دقـ ة [أو / و] تـ غطـ ية بـ شأن الـ يـ قـ ين عدم" :1 حاجز س ".الـ وطـ ني دون أو الـ وطـ ن ية

الـ تـ قاريـ ر لإعداد عالـ مي نـ طاق عـ لى الـ بـ ياـ نات وقـ واعد الـ مؤ شرات تـ طـ بـ يق ... يـ تـ علق فـ يما الـ يـ قـ ين عدم" :2 حاجز س ".الـ وطـ ني دون أو الـ وطـ ن ية

وقـ واعد لـ لمؤ شرات الـ عالـ مـ ية الـ بـ ياـ نات وقـ واعد الـ مؤ شرات كـ تـ بها الـ تـ ي الـ مـ ضافـ ة الـ قـ يمة بـ شأن الـ يـ قـ ين عدم" :3 حاجز س ".الـ وطـ ن ية ودون الـ وطـ ن ية الـ بـ ياـ نات

/ جدا الـ صـ عب عالـ مـ ية بـ ياـ نات مجموعة من الـ مأخوذة الـ بـ ياـ نات عـ لى الـ حـ صول و سهولـ ة تـ وافـ ر اـ عـ تـ بار تـ مـ لـ قد" :4 حاجز س "الـ فـ قراء

"الـ تـ قـ نـ ية الـ قدرات [نـ قص]" :5 حاجز س

تـ نـ شأ الـ تـ ي الـ قـ يود بـ عض تـ جاوز عـ لى الـ بـ لدان تـ ساعد أن يـ مكن الـ مرتـ بطة والـ بـ ياـ نات الـ عالـ مـ ية الـ بـ ياـ نات مجموعات · سـ يـ اسة وإبـ لاغ الـ محرز الـ تـ قدم لـ ر صـ د قـ يمة مـ علومات تـ وفـ ير وبـ الـ تالـ ي الـ وطـ ني، الـ مـ سـ توى عـ لى الـ بـ ياـ نات نـ درة عن .الـ محافـ ظة

الـ وطـ ني الـ صـ عيد الـ بـ يولـ وجي الـ تـ نوع الـ ممار سـ ين قـ درة من تـ حد أن يـ مكن وقـ ضايـ ا الـ تـ قـ نـ ية، عن فـ ضلا الـ سـ يـ اسـ ية، · الـ تـ نـ فـ يذ عـ مـ لـ يات فـ ي الـ مـ ساعدة الـ عالـ مـ ية الـ بـ ياـ نات قـ واعد الـ وعي خـ لق يـ مكن .الـ وطـ ني الـ مـ سـ تمدة الـ بـ ياـ نات لا اـ سـ تخدام .NBSAP والإبـ لاغ

الـ خطوات اتـ خاذ خلال من الـ حواجز لـ هذه الـ تـ صدي عـ لى تـ ساعد أن يـ مكن الـ بـ ياـ نات وموفـ ري الـ عالـ مي مـ سـ توى مؤ شر مطوري · :الـ تالـ ية

والـ شـ بكات؛ والـ مـ بادرات الـ دولـ ية الـ مـ نظمات :خلال من الـ بـ ياـ نات وقـ واعد الـ عالـ مـ ية الـ مؤ شرات اـ سـ تخدام فـ وائـ د الـ تـ واصل س الاجـ تماعات هلمش عـ لى عمل ورش أو جانـ بـ ية أحداث ذلـ ك؛ إلـ ى وما الـ صـ حـ فـ ية والـ نـ شرات الإر شاديـ ة، الـ وثـ ائـ ق مـ ثل مواد .الـ دولـ ية

وإظهار الـ وطـ ني الـ مـ سـ توى إلـ ى مـ نهجـ يات والـ تـ كـ يف الـ طريـ ق لاخـ تـ بار تـ جريـ بـ ية تـ عهد الـ وطـ ني الـ مـ سـ توى عـ لى درا سات س .الـ وطـ ن ية الـ مـ صـ لحة لأ صـ حاب قـ يمة

الـ بـ ياـ نات قـ واعد أو / و الـ مؤ شرات اـ سـ تخدام تـ م حـ يث مـ شابـ هة ظروف فـ ي الـ دول بـ ين الـ مـ علومات تـ بادل تـ شجـ يع س .الـ درس الـ وطـ ني الـ مـ سـ توى عـ لى بـ نجاح الـ عالـ مـ ية

.تـ فـ ضـ يـ لـ ية الـ وطـ ني وىالـ مـ ست مؤ شر لـ لمطوريـ ن والاتـ فاقـ ات معدلاـ ت أو / و الـ مـ فـ توح الـ وـ صول اـ سـ تخدام فـ ي تـ فـ كر س

قـ د الـ ذيـ ن الـ وطـ ني الـ مـ سـ توى عـ لى الـ بـ ياـ نات لـ مـ سـ تخدمي الـ قدرات، وبـ ناء الـ تدريـ ب مـ ثل الـ مـ سـ تمر، الـ دعم تـ وفـ ير o الـ تـ قـ نـ ية الـ قدرة إلـ ى يـ فـ تـ قرون

Управляющее резюме

- Отсутствие данных по биоразнообразию на национальном уровне может создать серьезные проблемы для стран при разработке и реализации стратегии и плана действий по сохранению биоразнообразия (НСПДСБ) или подготовки национального доклада.

- Многие из глобальных индикаторов объединила под партнерства индикаторам биоразнообразия (BIP) состоят из данных на национальном уровне, или в других случаях может быть разбито на национальном уровне.

- Важно признать, что глобальные наборы данных не всегда могут заменить местные или национальные данные. Однако существуют глобальные показатели и / или наборы данных доступны, которые могут быть использованы для поддержки развития национального индикатора, национальной отчетности, и обновление НСПДСБ и реализацию.

- Пять ключевых барьеров для использования глобальных индикаторов и наборов данных на национальном уровне были определены путем опроса национальных Конвенции о биологическом разнообразии (КБР) координаторов:

    - Барьер 1: "Неопределенность в отношении охвата [и / или] точность показателей и наборов данных в глобальном масштабе для национального или суб-национальных докладов".

    - Барьер 2: "Неопределенность в отношении применимости ... индикаторов и наборов данных в глобальном масштабе для национального или суб-национальных докладов".

    - Барьер 3: "Неопределенность по поводу дополнительных глобальных индикаторов и наборов данных к национальным или суб-национальных показателей и наборов данных значения".

    - Барьер 4: "Наличие и доступность данных, взятых из глобальной базы данных были признаны слишком сложно / плохое"

    - Барьер 5: "[Отсутствие] технического потенциала"

- Глобальные наборы данных и связанные с ними данные могут помочь странам обойти некоторые из ограничений, которые вытекают из недостатка данных на национальном уровне и тем самым обеспечивают ценную информацию для мониторинга прогресса и сообщить политику сохранения.

- Политические, а также технические вопросы, могут сдерживать способность практиков на национальном уровне по сохранению биоразнообразия, чтобы использовать национально полученные данные. Создание осведомленности о глобальных баз данных может помочь в реализации и отчетности процессов НСПДСБ.

- разработчики индикатор Глобальный уровень и поставщики данных могут помочь в решении этих барьеров путем принятия следующих шагов:

    - бщение преимущества использования глобальных индикаторов и наборов данных через: международные организации, инициативы и сетей; материалы,

такие как руководящие документы, пресс-релизы и т.д .; дополнительные мероприятия или семинары в кулуарах международных встреч.

- пилотных Проведение исследований на национальном уровне в дорожно-теста и адаптировать методологии в национальном уровне и продемонстрировать ценность национальных заинтересованных сторон.
- Поощрение обмена информацией между странами в подобных обстоятельствах, когда глобальные показатели и / или наборы данных были успешно используются на национальном уровне урок.
- Учитывая, используя открытый доступ и / или льготные ставки и соглашений для разработчиков индикаторов на национальном уровне.
- беспечение постоянной поддержки, например, обучения и наращивания потенциала, для пользователей данных на национальном уровне, которые могут хватает технического потенциала.

Sumário executivo

- A falta de dados sobre biodiversidade a nível nacional pode representar sérios desafios para os países ao desenvolver e implementar uma Estratégia e Plano de Acção Nacionais para a Biodiversidade (NBSAP), ou a preparação de um Relatório Nacional.
- Muitos dos indicadores globais reunidos sob o Parcerias indicadores de biodiversidade (BIP) são compostos de dados a nível nacional, ou em outros casos podem ser desagregadas a nível nacional.
- É importante reconhecer que os conjuntos de dados globais nem sempre podem substituir os dados locais ou nacionais. No entanto, existem indicadores e / ou conjuntos de dados globais disponíveis que podem ser usados para apoiar o desenvolvimento nacional indicador, relatórios nacionais e atualização NBSAP e implementação.
- Cinco principais barreiras para o uso de indicadores globais e conjuntos de dados a nível nacional foram identificados através de uma pesquisa de Convenção nacional sobre Diversidade Biológica (CBD) Pontos Focais:
    - Barreira 1: "A incerteza quanto à cobertura [e / ou] accuracy de indicadores e conjuntos de dados em escala global para a comunicação nacional ou sub-nacional".
    - Barreira 2: "A incerteza quanto à aplicabilidade ... de indicadores e conjuntos de dados em escala global para a comunicação nacional ou sub-nacional".
    - Barreira 3: "A incerteza quanto ao valor acrescentado por indicadores globais e conjuntos de dados para os indicadores e conjuntos de dados nacionais ou sub-nacionais".
    - Barreira 4: "A disponibilidade e acessibilidade dos dados extraídos do conjunto de dados globais foram consideradas demasiado difícil / pobres"
    - 5 Barreira: "[A falta de] capacidade técnica"
- conjuntos de dados globais e dados associados podem ajudar os países a ultrapassar algumas das limitações que surgem da escassez de dados a nível nacional e, assim, fornecem informações valiosas para monitorar o progresso e informar a política de conservação.
- Políticos, bem como técnicas, problemas podem limitar a capacidade de os profissionais de biodiversidade a nível nacional a utilizar dados nacionalmente derivados. Criar consciência de conjuntos de dados globais podem ajudar nos processos de execução e apresentação de relatórios NBSAP.
- desenvolvedores indicador de nível global e fornecedores de dados pode ajudar a resolver essas barreiras através das seguintes etapas:
    - Comunicar os benefícios da utilização de indicadores globais e conjuntos de dados através de: organizações internacionais, iniciativas e redes; materiais, tais como documentos de orientação, comunicados de imprensa, etc .; eventos paralelos ou workshops em à margem das reuniões internacionais.
    - estudos-piloto a nível nacional a empresa-teste de estrada e adaptar metodologias para o nível nacional e demonstrar valor para as partes interessadas nacionais.
    - Incentivar a partilha entre os países em circunstâncias semelhantes, onde os indicadores e / ou conjuntos de dados globais têm sido usados com sucesso a nível nacional lição.
    - Considerando-se o uso de acesso aberto e / ou taxas e acordos para desenvolvedores indicador de nível nacional preferenciais.
    - Fornecer suporte contínuo, tais como formação e capacitação, para os utilizadores de dados a nível nacional que podem não ter capacidade técnica.

Contents

1 Introduction

1.1 Purpose and use of this Information Document

This information document has been produced as an output of a United Nations Environment Programme-World Conservation Monitoring Centre (UNEP-WCMC) project, funded by the Federal Office for Environment (FOEN), Government of Switzerland, to examine how global datasets can be utilised to support national level implementation of the Convention on Biological Diversity (CBD) Strategic Plan for Biodiversity 2011-2020. The main objective of this information document is to improve the understanding of global indicator developers and data providers as to how global biodiversity indicators or underlying data and observations can support the development of national biodiversity indicators. A Roadmap to provide support and guidance to national biodiversity practitioners (see Box 1), such as natural resource managers, has been produced to accompany this information document[1]. This Roadmap presents a framework to assist these practitioners by creating awareness of how and why global biodiversity indicators and datasets, which are often generated at the national level, can be incorporated into updated NBSAPs, implementation plans and national reports.

Box 1. Key terms and definitions

Indicator
A metric or measure based on verifiable data that conveys information about more than itself. It is information packaged to communicate something important to decision makers[2]. Biodiversity indicators include the whole range from statistically robust and nationally sanctioned to indicators of change based on expert opinion (with varying degrees of verification).

Underlying datasets
Those datasets that contribute to the development of an indicator, without being directly accessible.

Biodiversity practitioners
Biodiversity and natural resource managers involved in policy processes influencing biodiversity outcomes.

Whilst many global datasets exist, both the Information Document and Roadmap focus on understanding how the global indicators brought together by the Biodiversity Indicators Partnership (BIP; see Box 2) can be utilised by countries in the development and implementation of their NBSAPs and further track progress towards 2020 and beyond.

The evidence base for this Information Document was principally compiled from two main sources:

- A review of the global indicators and their underlying datasets was undertaken in collaboration with the BIP partners
- An online questionnaire distributed via an official CBD Notification (**SCBD/SAM/DC/RH/KM/84530**) to CBD National focal points and individuals involved in NBSAP revision.

[1] Bowles-Newark, N.J., Despot Belmonte, K., Chenery, A., Misrachi, M. (2015). *Using global biodiversity indicators and underlying data to support NBSAP development and national reporting*. UNEP-WCMC In press.
[2] UNEP-WCMC. (2011). *Developing ecosystem service indicators: Experiences and lessons learned from sub-global assessments and other initiatives*. Secretariat of the Convention on Biological Diversity, Montreal, Canada. Technical Series No. 58.

Box 2. The Biodiversity Indicators Partnership

The CBD-mandated Biodiversity Indicators Partnership (BIP) was established in 2007 as a global initiative to promote and coordinate development and delivery of biodiversity indicators in support of the CBD and, subsequently, Multilateral Environmental Agreements (MEAs), the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES), national and regional governments and a range of other sectors.

The BIP brings together over forty organizations working internationally on indicator development to provide the most comprehensive information on biodiversity trends. The BIP has also developed a set of resources to assist the development and use of indicators at the regional and national levels (available from: www.bipindicators.net). These resources include guidance documents, factsheets, a discussion forum for indicator practitioners and an e-learning module on 'Developing Biodiversity Indicators'.

Box 3. The NBSAP Forum

The NBSAP Forum is a global online resource that provides nations with the information they need to revise and implement an effective National Biodiversity Strategies and Action Plan (NBSAP). Through this web portal, each NBSAP Forum member has free and unlimited access to best practices, guidance and resources on each Aichi Biodiversity Target. Members can also connect to 1,150 other individuals and organizations to easily share information, knowledge, resources and request support. The peer review facility allows national teams to share their revised NBSAP and receive technical review, prior to adopting it as a national instrument.

The NBSAP Forum also offers an extensive library of self-paced e-learning opportunities on topics ranging from protected areas management to climate resilience. In 2015, experts will teach live online courses on target and indicator development, resource mobilization, and ecosystem services, among many other topics. The Secretariat of CBD, the United Nations Development Programme (UNDP), and UNEP host it in partnership. Through the NBSAP Forum, they intend to create an international community of practice across a wide range of stakeholders and topics. Access it today: *http://nbsapforum.net/*

1.2 Why use global indicators and/or datasets at the national level?

There is a growing body of evidence to demonstrate that a substantial amount of global biodiversity has already been lost, leading to considerable consequences for human well-being[3,4,5,6,7,8,9,10,11,12,13]. The Strategic Plan for Biodiversity 2011-2020 sets a challenging and ambitious vision that biodiversity is fully valued and integrated into national decision making, and that concrete actions are taken to reverse biodiversity losses[14].

Biodiversity data are key to the successful development and implementation of National Biodiversity Strategy and Action Plans (NBSAPs), a fundamental conduit for implementing the Strategic Plan and developing national targets corresponding to the Aichi Biodiversity Targets. Nearly all of the seven steps advocated for NBSAP development and implementation require the use of biodiversity data in one format or another (Figure 1). Therefore a lack of national level biodiversity data can pose serious challenges for countries when developing and implementing an NBSAP, or preparing a National Report.

[3] UNDP (2014). *Human Development Report 2014 - Sustaining Human Progress: Reducing Vulnerabilities and Building Resilience*. UNDP, New York.

[4] UN DESA (2012). *A Guidebook to the Green Economy - Issue 2: Exploring Green Economy Principles*. UN DESA, New York.

[5] Millennium Ecosystem Assessment (2005). *Ecosystems and Human Well-being: Synthesis*. Island Press, Washington, DC.

[6] Balvanera, P., Pfisterer, A. B., Buchmann, N., He, J.-S., Nakashizuka, T., Raffaelli, D. and Schmid, B. (2006), Quantifying the evidence for biodiversity effects on ecosystem functioning and services. *Ecology Letters*, 9: 1146–1156

[7] Bernstein, A.S., (2014). Biological diversity and public health. *Annual Review of Public Health*, 35: 153-167

[8] Cardinale, B. J., Duffy, J. E., Gonzalez, A., Hooper, D. U., Perrings, C., Venail, P., … Naeem, S. (2012). Biodiversity loss and its impact on humanity. *Nature*, *486*: 59–67

[9] Díaz, S., Fargione, J., Chapin III, F.S. & Tilman, D. (2006) Biodiversity loss threatens human well-being. *PLoS Biology*, 4: 1300-1305.

[10] Haines-Young, R. & Potschin, M. (2010). The links between biodiversity, ecosystem services and human well-being. In: Raffaelli, D.G. & Christopher, L. J. Frid (Eds.) *Ecosystem Ecology*, pp. 110-139.

[11] Convention on Biological Diversity COP 10 Decision X/2: The Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets

[12] Secretariat of the Convention on Biological Diversity (2014). *Global Biodiversity Outlook 4*. Montréal, pp. 155.

[13] Tittensor, D. P., Walpole, M., Hill, S. L. L., Boyce, D. G., Britten, G. L., Burgess, N. D., … Parks, B. C. (2014). A mid-term analysis of progress toward international biodiversity targets. *Science*, 346: 241–244.

[14] https://www.cbd.int/sp/

Figure 1. The seven steps of NBSAP development and implementation[15]

Despite many countries being able to utilise different approaches to report on national level progress towards the Aichi Biodiversity Targets[16], challenges still existed for many countries in making complete reports of progress towards the Aichi Targets when compiling their fifth national reports (5NR). In an assessment of 64 submitted 5NR, undertaken during the preparation of the Fourth Edition of the Global Biodiversity Outlook, just over 40% did not explicitly assess national progress towards the Aichi Targets. The CBD Secretariat updated these figures in June 2015 to include analysis of an additional 67

[15] http://nbsapforum.net/#nbsap-journey

[16] Chenery, A., Ivory, S and Despot Belmonte, K. (2015) *Review of national approaches to assessing progress towards the Aichi Biodiversity Targets.* UNEP-WCMC: Cambridge, UK.

5NR. Figure 2 shows the percentage of the total (131) reports that did not contain information, even of a qualitative nature, to allow for an assessment of progress towards individual Aichi Targets.

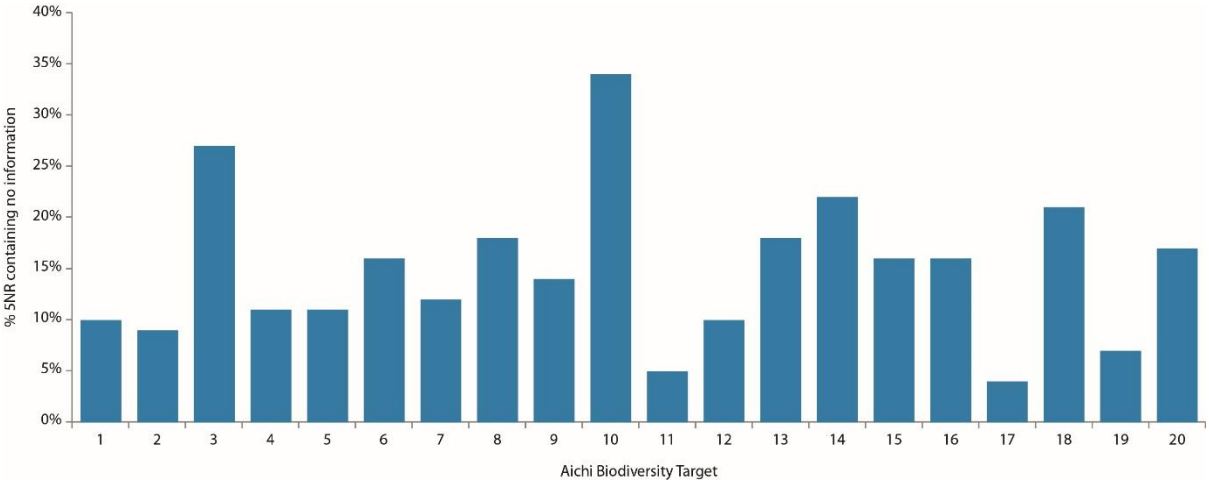

Figure 2. Percentage of fifth national reports containing no information on assessment of national progress towards individual Aichi Targets[17]

Despite global and national biodiversity indicators often being intended for different users and purposes[18], there are global indicators and/or datasets available that can provide opportunities to support national indicator development, national reporting, and NBSAP updating and implementation (see Table 1 and Annex 2). Many of these indicators utilise datasets derived from national level monitoring, however due to barriers around political will and data sharing sensitivities, these data are not well integrated into national processes for biodiversity management, or national reporting. There is a growing body of evidence around these more complex issues within the environmental sector[19,20,21,22,23,24,25], however this Information Document intends to highlight the more technical, rather than political, barriers to the utilisation of global indicators and datasets, and demonstrate ways in which global indicator developers can support national biodiversity practitioners within their work.

This support can be provided in a number of ways:

1. Providing consistent, reliable information for decision making
2. Complementing national systems
3. Addressing capacity issues
4. Assisting in the ability to report on progress towards global targets

[17] sCBD, 2015.
[18] Bubb, P., Chenery, A., Herkenrath, P., Kapos, V., Mapendembe, A., Stanwell-Smith, D., and Walpole, M. (2011) *National Indicators, Monitoring and Reporting for the Strategy for Biodiversity 2011-2020*. UNEP-WCMC: Cambridge, UK
[19] Weichselgartner, J. & Kasperson, R. (2010). Barriers in the science-policy-practice interface: Toward a knowledge-action-system in global environmental change research. *Global Environmental Change*, 20, 266-277
[20] Bertzky, M., & Stoll-Kleemann, S. (2009). Multi-level discrepancies with sharing data on protected areas: What we have and what we need for the global village. *Journal of Environmental Management,* 90(1), 8-24.
[21] Dalal-Clayton, B. & Bass. S. (2009). *The challenges of environmental mainstreaming: Experience of integrating environment into development institutions and decisions*. IIED: London.
[22] Pereira, H. M., & Cooper, D. H. (2006). Towards the global monitoring of biodiversity change. *Trends in Ecology & Evolution, 21*(3), 123-129.
[23] Secades, C., O'Connor, B., Brown, C. & Walpole, M. 2014. *Earth observation for biodiversity monitoring: A review of current approaches and future opportunities for tracking progress towards the Aichi biodiversity Target*s. CBD Technical Series No. 72. Secretariat of the Convention on Biological Diversity, Montreal, Canada.
[24] Stephenson, P.J., Burgess, N.D., Jungmann, L., Loh, J., O'Connor, S., Oldfield, T., Reidhead, W. & Shapiro, A. (2015). Overcoming the challenges to conservation monitoring: integrating data from in situ reporting and global data sets to measure impact and performance. *Biodiversity.* DOI: 10.1080/14888386.2015.1070373.
[25] Tenopir, C., Allard, S., Douglass, K., Aydinoglu, A. U., Wu, L., Read, E., Manoff, M. & Frame, M. (2011). Data sharing by scientists: practices and perceptions. *PloS one*, 6(6), e21101.

The need to utilise the global indicators has also been demonstrated through the eleventh meeting of the Conference of the Parties to the Convention on Biological Diversity (CBD COP 11) decision XI/3[26], whereby Parties were invited to "*prioritize the application at national level of those indicators that are ready for use at global level where feasible and appropriate*" and the Biodiversity Indicators Partnership (BIP) was requested to "*develop practical information on the indicators… to assist in the application of each of the indicators*".

In addition to reporting on progress towards international Multilateral Environmental Agreements (MEAs) such as the CBD, indicators can be used to highlight priority areas to be addressed through government policy making and implementation. Indicators allow policy makers and other actors to be more sensitive to changes in the natural environment, and to continually increase the efficacy of biodiversity management interventions[27]. Limited availability of data for the production of national indicators impedes the ability of policy makers to adequately account for biodiversity and ecosystem services within their processes. Therefore, where indicators are lacking, science and policy remain disconnected. Equally, global indicators utilise a wealth of global, regional and national datasets in their development, yet there is a lack of understanding of how these indicators or their underlying data can be mobilised to support national biodiversity planning and monitoring.

[26] https://www.cbd.int/doc/decisions/cop-11/cop-11-dec-03-en.pdf
[27] https://www.cbd.int/indicators/intro.shtml

Table 1. Global indicators available from the BIP suite to support national level reporting and/or NBSAP updating and implementation

Strategic Goal	Global indicator	Aichi Target	Indicator type	Aggregated from national or sub-national level data	Indicator/underlying dataset can be disaggregated at the national level
A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society	Biodiversity Barometer	1	Response	Yes	
	Ecological Footprint	4	Pressure	Yes	
	Red List Index (impacts of utilisation)[β]	4	State	in some cases	Yes
B: Reduce the direct pressures on biodiversity and promote sustainable use	Extent of Forests and Forest Types	5	State	Yes	
	Marine Trophic Index	6	Pressure	Yes	
	Marine Stewardship Council Certified Catch and Fishery Improvements	6	Response	Yes	
	Red List Index (impacts of fisheries on marine species) [β]	6	State	in some cases	Yes
	Area of Forest Under Sustainable Management: Certification	7	Response	Yes	
	Loss of Reactive Nitrogen to the Environment	8	Pressure	Yes	
	Nitrogen Deposition	8	Pressure	No	Yes
	Red List Index [β]	8	State	in some cases	Yes
	Adoption of National Legislation Relevant to the Prevention or Control of Invasive Alien Species	9	Response	Yes	
	Trends in Invasive Alien Species Vertebrate Eradications	9	Response	No	Yes
	Trends in Numbers of Invasive Alien Species Introduction Events	9	Pressure	No	Yes
	Red List Index (impacts of invasive alien species) [β]	9	State	in some cases	Yes
	Cumulative Human Impact on Marine Ecosystems	10	Pressure	Yes	
	Red List Index (reef-building coral species) [β]	10	State	in some cases	Yes
C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity	Coverage of Protected Areas	11	State	Yes	
	Management Effectiveness of Protected Areas	11	Response	Yes	
	Protected Area Overlays with Biodiversity[¥]	11	Response	Yes	
	Wild Bird Index	12	State	Yes	

Strategic Goal	Global indicator	Aichi Target	Indicator type	Aggregated from national or sub-national level data	Indicator/underlying dataset can be disaggregated at the national level
	Living Planet Index	12	State	in some cases	Yes
	Red List Index [β]	12	State	in some cases	Yes
	Wildlife Picture Index	12	State	Yes	
	Genetic Diversity of Terrestrial Domesticated Animals	13	State	Yes	
D: Enhance the benefits to all from biodiversity and ecosystem services	Red List Index (species used for food and medicine) [β]	14	State	in some cases	Yes
	Nutrition Indicators for Biodiversity	14	State	Yes	
	Ocean Health Index	14	State	Yes	
	Red List Index (pollinating species) [β]	14	State	in some cases	Yes
E: Enhance implementation through participatory planning, knowledge management and capacity building	Index of Linguistic Diversity	18	State	Yes	
	Status and Trends of Linguistic Diversity and Numbers of Speakers of Indigenous Languages	18	State	Yes	
	Number of Global Biodiversity Information Facility Records Over Time	19	Response	No	Yes
	Official Development Assistance Provided in Support of the Convention	20	Response	Yes	

¥ This indicator is made up of three components: Protected area coverage of ecoregions; Protected area coverage of Alliance for Zero Extinction areas; and Protected area coverage of Important Bird and Biodiversity Areas.

[β] Red List Indices are aggregated from species-level data assessments which are based on local, national and global level data.

In a study conducted by NatureServe[28], 132 local conservation experts from three geographically diverse regions of critical biodiversity concern (the Tropical Andes, the African Great Lakes, and the Greater Mekong) were surveyed in order to better understand the challenges to effective biodiversity monitoring at national and regional scales and investigate national perceptions of the benefits of utilising global data. Most cited benefits included the ability to: collect, share and analyse information; assess biodiversity status and threats; inform policy planning and decision making; and assess and improve conservation impacts and ecosystem services (see Figure 4). The results of these studies were used to create a Biodiversity Indicators Dashboard (see Box 4).

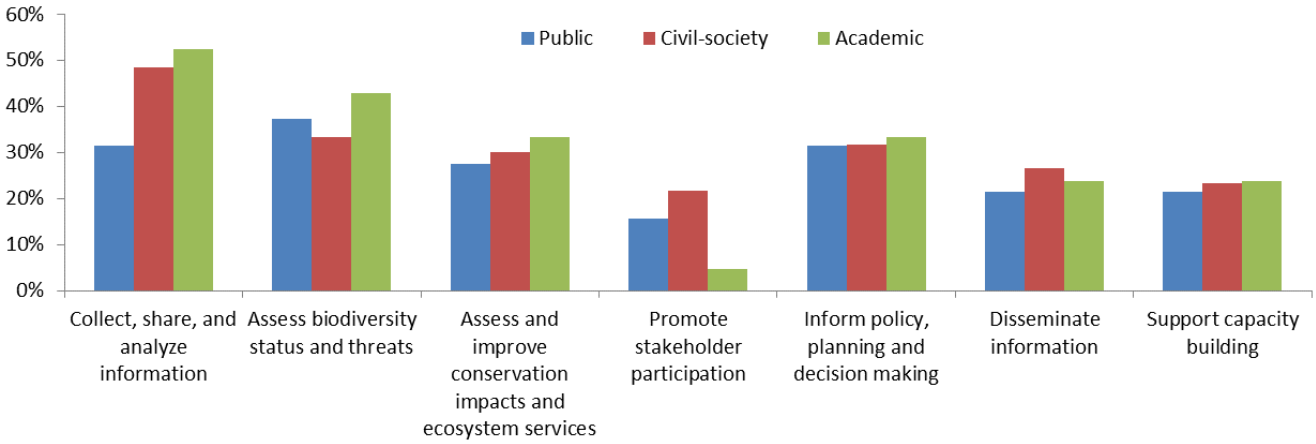

Figure 4. Perceived benefits of using global data within a dashboard approach, by sector. Number of respondent is 51 for public sector, 60 for civil-society, and 21 for academic sector[28]

The next section discusses the current use of global biodiversity indicators and datasets at the national level by elaborating on the key barriers identified through a survey of CBD focal points (see Section 2). In the final section we present examples of how some of the identified barriers have been overcome and propose a series of options for both global data providers (such as the BIP Partners) and national users (such as indicator developers and biodiversity practitioners) regarding the opportunities presented by utilising global datasets at the national level.

[28] Xuemei, H., Smyth, R.L., Young, B.E., Brooks, T.M., Sánchez de Lozada, A., Bubb, P., Butchart, S.H.M., Larsen, F.W., Hamilton, H., Hansen, M.C. & Turner, W, R. (2014). A biodiversity indicators dashboard: Addressing challenges to monitoring progress towards the Aichi Biodiversity Targets using disaggregated global data. *PLOS One* DOI: 10.1371/journal.pone.0112046

Box 4. The Biodiversity Indicators Dashboard.

Using this framework, NatureServe has created a Biodiversity Indicators Dashboard that enables users to track indicators of biodiversity and conservation performance data, in a clear, user-friendly format. Four global indicators were disaggregated to the regional and national level to prove the concept. The four indicators measure:

- Pressure on biodiversity (deforestation rate)
- State of species (the IUCN Red List Index)
- Conservation response (Key Biodiversity Areas)
- Benefits to human populations (freshwater provision)

Additional indicators of disaggregated global or regional datasets generated, further developed through the Biodiversity Indicators Dashboard, can be visualized at http://dashboard.natureserve.org.

The Dashboard analyses three regions—the tropical Andes, the Great Lakes of Africa, and the Mekong River Valley—and their component countries (see Figure 5). These visualizations include charts that show regional and national trends in biodiversity. The tool helps: track progress toward the Aichi Targets; supports national monitoring and reporting; informs outcome-based policy-making that protects natural resources and allows for direct comparison between countries within the three focal regions.

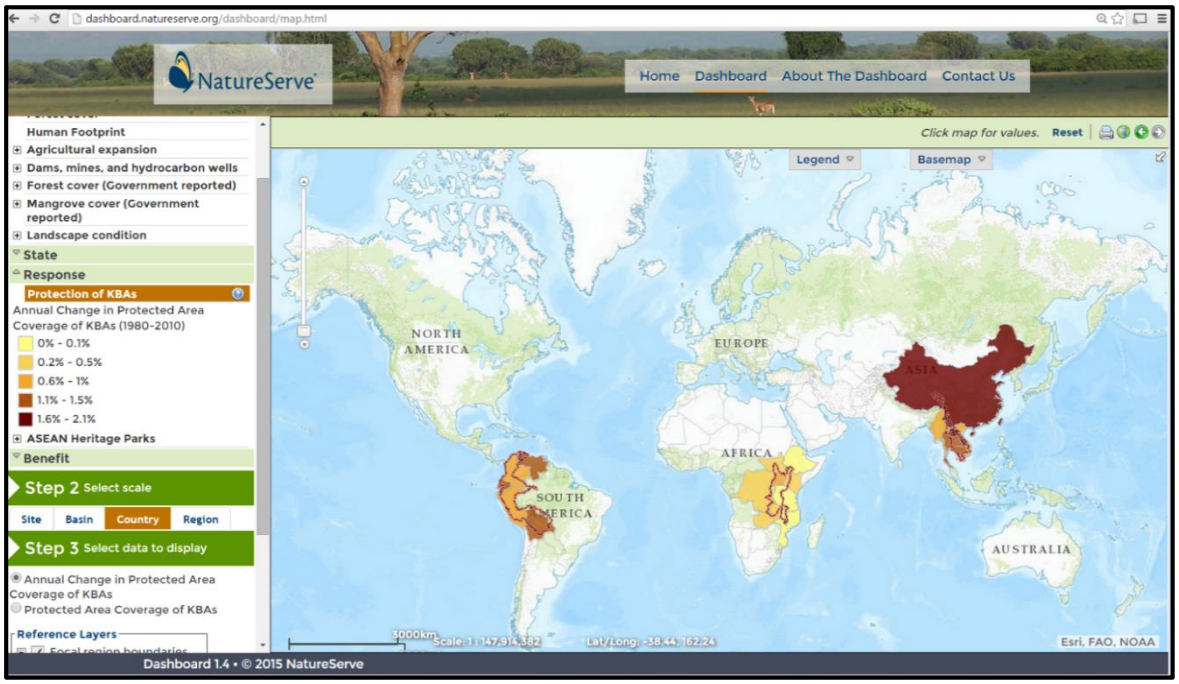

Figure 5 Screenshot of the NatureServe Biodiversity Indicators Dashboard showing the three focal regions.

2 The current use of global biodiversity indicators and datasets at the national level

In order to assess the current use of global biodiversity indicators and datasets at the national level, an online questionnaire was distributed via an official CBD Notification[29] to CBD National Focal Points and individuals involved in NBSAP revision. Survey respondents were requested to provide information on the following[30]:

- *Have they used/ are they using global indicators and/or datasets in the preparation of NBSAPs or national reports?*

If yes:

  - *Which indicators and/or datasets did they use?*
  - *Did they encounter any problems using these indicators and/or datasets?*

If no:

  - *What were the barriers to using these indicators and datasets?*
  - *What would give them the confidence to use these indicators or datasets in the future?*

Of the 49 survey respondents[31], 21 (43%) respondents stated that they had used global indicators and/or datasets in the preparation of their NBSAPs or National Reports. Of these, 71% (15) maintained that they would consider using additional global indicators or datasets in the future. This suggests that those that have used global indicators or datasets have found this to be a mostly positive experience.

Respondents elaborated further on their use of global indicators and /or datasets, with the IUCN Red List Index being the most commonly cited (4), with the Ecological Footprint, Marine Trophic Index and Global Wild Bird Index also being used at the national level.

2.1 Key barriers to the use of global indicators and/or data at the national level

Through analysis of the survey responses, five key constraints and barriers were identified regarding the use of global indicators and/or datasets at the national level.

Barrier 1: "*Uncertainty regarding the coverage* [and/or] *sensitivity of indicators and datasets at the global scale for national or sub-national reporting*".

There were concerns and uncertainty over the quality of the indicators, particularly their geographical and temporal coverage, and the sensitivity of the indicators/datasets to respond to national level changes.

[29] SCBD/SAM/DC/RH/KM/84530

[30] For the complete questionnaire see Annex 1.

[31] Survey respondents included representatives from the following countries: Afghanistan, Australia, Belgium, Benin, Brazil, Cambodia, Comoros, Costa Rica, Czech Republic, Ecuador, Eritrea, Finland, Georgia, Germany, Honduras, India, Italy, Japan, Luxembourg, Mexico, Namibia, New Zealand, Nigeria, Oman, Palau, Peru, Poland, Samoa, South Africa, Switzerland, United Kingdom, United States of America and Zambia.

Barrier 2: "*Uncertainty regarding the applicability of indicators and datasets at the global scale for national or sub-national reporting*".

A number of respondents were unsure of how global indicators and datasets could be utilised at the national level for monitoring implementation of their NBSAPs.

Barrier 3: "*Uncertainty regarding the value added by global indicators and datasets to national or sub-national indicators and datasets*".

Countries expressed uncertainty regarding the added value global indicators and datasets could provide to their NBSAPs or biodiversity-related assessments.

Barrier 4: "*Availability and accessibility of data taken from global datasets have been deemed too difficult/poor*"

Respondents were unsure of how to gain access to information concerning the use of global indicators and datasets at the national level. Limited access to global datasets was also noted as a constraint.

Barrier 5: "[Lack of] *technical capacity*"

Respondents stated that their respective countries did not have the technical capacity needed to utilise global indicators and datasets for their national level indicator development and/or assessments.

Those respondents from upper middle and high income countries were mostly concerned with the relevance of the global indicators at the national level (**Barrier 2**). Whereas those from lower middle and low income countries had concerns around the level of technical capacity required in order to utilise global indicators and datasets (**Barrier 5**). Each of these barriers will now be discussed and potential options for future support suggested for both national level data users and global level data providers.

3 Options for future support

3.1 Global level data providers

When asked if they would be interested in collaborating with members of the Biodiversity Indicators Partnership (BIP) to examine how global indicators and/or datasets could be used in their NBSAP or National Reports, 32 survey respondents (65%) answered positively. However only approximately half of these respondents currently use or have used global indicators or datasets in the preparation of NBSAPs or National Reports. This analysis suggests that, while there is existing national appetite for investigating the potential of global datasets, channels of communication need to be strengthened in order to promote the availability and benefits directly to potential national level users. This is the first step that global level data providers can take towards to addressing the five barriers highlighted by survey respondents.

The instigation of pilot studies at the national level will allow for the continued development of data quality and verification processes. This testing of global indicators and datasets could also provide the scope for a robust comparison between global and national indicators. For example, the Living Planet Index (LPI) is not only a global index but can also be calculated for regions and nations, provided that there are sufficient data available. LPIs have been produced for a number of different regions and countries including Uganda, Canada, the Mediterranean Wetlands and the Arctic (see Box 5). The publication of study results, including information on applying global indicator methodologies at the national level, will serve to allay concerns over the quality of global indicators and datasets (**Barrier 1**).

Box 5. The Living Planet Index for Uganda

The Living Planet Index (LPI) is an indicator of change in global biodiversity based on change in population abundance of vertebrate species from all around the world. Biodiversity is perhaps most widely understood at the species level, so as a measure of trends in species abundance the LPI has a high degree of resonance with decision makers and the public and links clearly to ecological process and ecosystem function.

The global LPI database can be disaggregated for subsets of data to:

- show trends in species abundance for particular taxonomic groups;
- show trends in species abundance for particular habitats or biomes;
- identify regions and ecosystems where the abundance of species is changing most rapidly;
- explore trends in abundance of species impacted by different threat processes;
- monitor trends in species listed on conventions such as Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) or the Convention on Migratory Species (CMS).

Makerere University in Uganda has been producing 'State of Uganda's biodiversity' reports since 1998[32], using the LPI method to analyse trends and providing a regular input of data into the LPI database. Despite Uganda's recurring political and economic problems over the last four decades, monitoring of at least some species (mainly large savannah ungulates but also some forest primates and wetland species), has been undertaken since the 1960s. From these limited data sets, it has been possible to construct a series of indices using the LPI method, showing the decline in the abundance of certain species in the country's natural ecosystems from 1970 to 2004. The Living Planet Index for Uganda (Figure 5) combines the trends from the species population indices of Uganda's forests, freshwaters and savannahs. The savannah data set is relatively

[32] Pomeroy, D., Lutaaya, B., and Tushabe, H. (2006*) State of Uganda's Biodiversity 2006.* National Biodiversity Databank and Makerere University Institute of Environment and Natural Resources, Kampala, Uganda

extensive, comprising whole-country estimates for populations of 16 species of large mammal, while the data sets for forests and freshwater are smaller and less comprehensive (five and four species respectively.

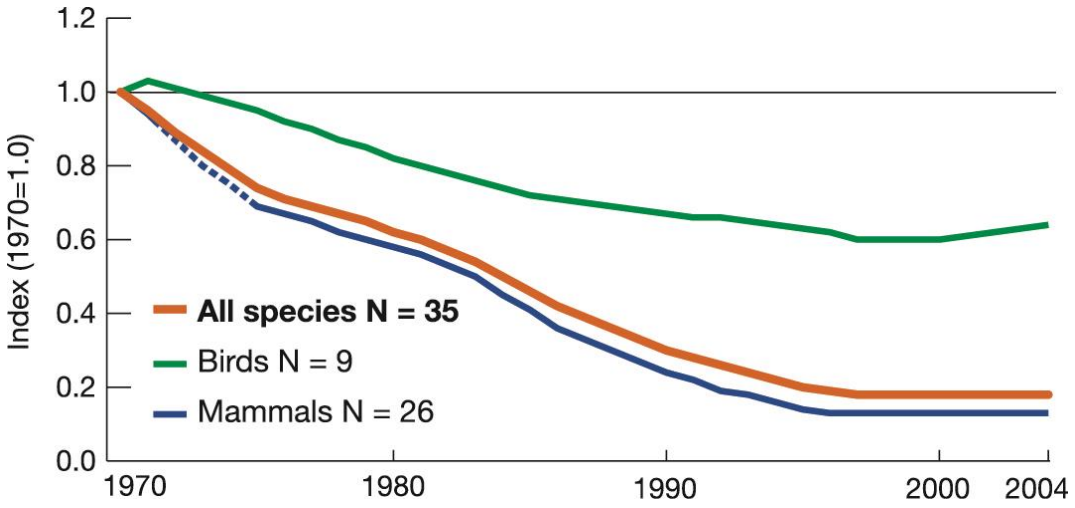

Figure 5. The Living Planet Index for Uganda 1970-2004 showing the disaggregated bird and mammal indices.

At present, data submitted by countries and regions must be sent directly to the responsible organisations for the LPI, WWF International and the Zoological Society of London (ZSL). Work has now been completed to make the database available online in the form of the Living Planet Database (www.livingplanetindex.org) with a view to encourage countries and regions to submit their data to produce both their own indicators and strengthen the global indicator.

Source: McRae, L., Loh. J., Bubb, P.J., Baillie, J.E.M., Kapos, V., and Collen, B. 2008. *The Living Planet Index - Guidance for National and Regional Use*. UNEP-WCMC, Cambridge, UK.

Global level data providers can facilitate the sharing of lessons between countries that have successfully integrated their indicators and/or datasets with countries in similar circumstances (i.e. geographical location or technical capacity). This type of knowledge transfer will allow for the applicability of global indicators and datasets for national level reporting to be demonstrated to national level users, addressing those concerns in **Barrier 2,** as well as highlighting the value provided at the national level by these data (**Barrier 3**). The more potential national level users that can be reached via this strategy, the more comparability there will be between countries with regards to progress towards global targets, something highlighted as desirable by two survey respondents:

"Use of global indicators would be encouraged by the expectation that same indicators would be used by all other partners in order to have comparison among different countries".

"[I would have the confidence to use global indicators] if the data could be disaggregated to national level and would allow the comparison of neighbouring countries, for example".

Increasing the relevance of global indicators to users at the national level, by taking into account national needs and priorities, allows for the use of common indicators at multiple scales[33]. The Wild Bird Index is an example of an indicator used at the national, regional and global level (Box 6).

[33] Stephenson, P. J., O'Connor, S., Reidhead, W., & Loh, J. Using biodiversity indicators for conservation. *Oryx*, 1-1.

Box 6. The Wild Bird Index

Birds are recognised as good indicators of environmental change and as useful proxies of wider changes in nature. The Wild Bird Index (WBI) measures average population trends of a suite of representative wild birds, as an indicator of the general health of the wider environment. WBIs deliver scientifically robust and representative indicators for birds to support formal measurement and interpretation of national, regional and global targets to reduce, or halt, the rate of biodiversity loss.

The WBI project aims to promote and encourage the development of WBIs from national population monitoring schemes. Where such schemes already exist, it will coordinate and facilitate the collation of bird species' data and the generation of indices and indicators. Where there are none, it will provide tools and support to implement similar data collation and synthesis in a representative set of countries across regions, with the funds available to the project.

The Wild Bird Index was approved in October 2004 by the European Commission as one of the official structural indicators for changes in EU member states. In order to assess and report on the state of agricultural areas, Poland used an aggregated index of common farmland bird species population abundance in their fifth national report. A general long-term decreasing trend was found (Figure 6), tentatively attributed to factors related to the intensification of agriculture, such as the accumulated and/or delayed effects of increasing agricultural engineering. WBIs are being used at the national level in at least 25 other European countries, including Austria, Belgium (Wallonia), Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italia, Latvia, Luxembourg, Netherlands, Norway, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, and United Kingdom.

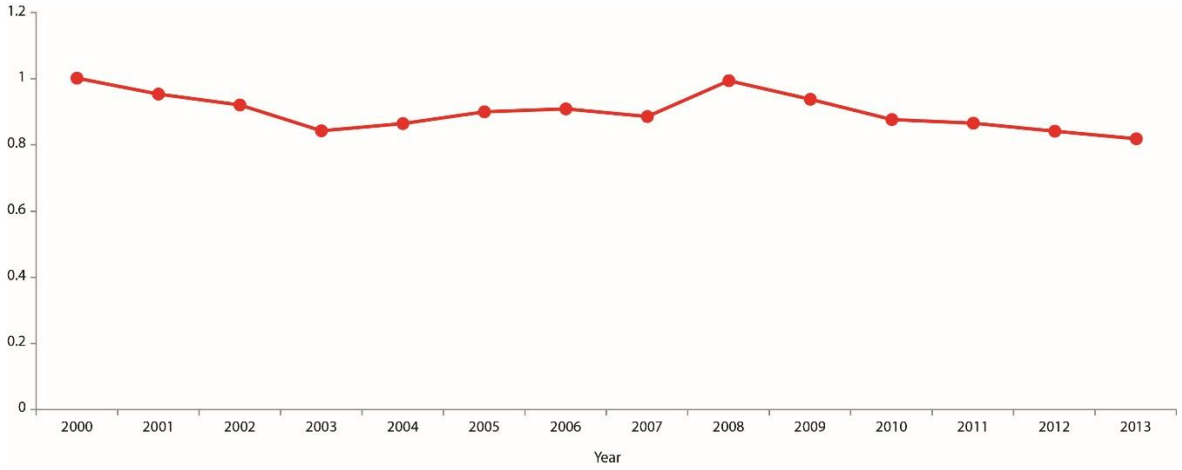

Figure 6. Changes in Farmland Bird Index, aggregating information on trends of 22 common farmland species in 2000-2013[34].

A regional WBI for Europe has already been produced and is being used to measure progress towards the headline target of the new EU Biodiversity Strategy to 2020 - *Halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restoring them in so far as feasible, while stepping up the EU contribution to averting global biodiversity loss*[35]. WBIs have also recently been published for North America, and these two aggregated indices were

[34] Chief Inspectorate For Environmental Protection 2014

[35] European Commission. (2011). *The EU Biodiversity Strategy to 2020*. European Union: Belgium.

combined to produce status and trends information towards global achievement of Aichi Target 5 for the fourth edition of the Global Biodiversity Outlook[36] (Figure 7).

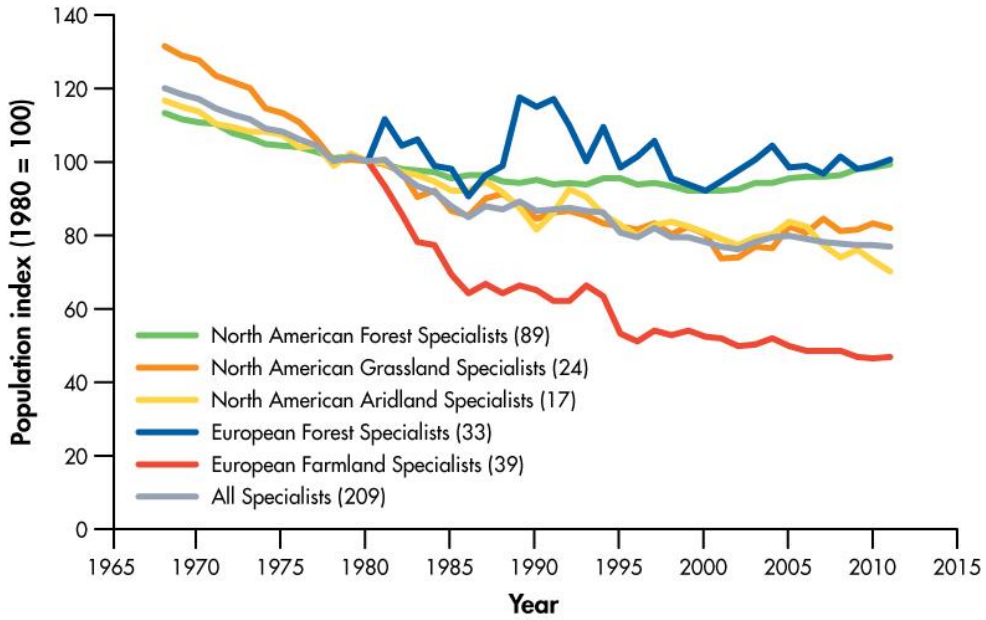

Figure 7 The Wild Bird Index for 209 habitat-specialist bird species in Europe and North America, showing the average population trends of specialist birds have declined by more than 20% since 1980, based on continental-scale systematic surveys and monitoring schemes[37]

WBI initiatives have begun in Africa (particularly in Botswana, Kenya and Uganda), Australia and China. The Global WBI, will be comprised of these aggregated national level indexes and will continue to expand, hopefully into a truly global indicator.

For more information about producing regional and national WBIs, contact Richard Gregory (RSPB; mailto:richard.gregory@rspb.org) and/or Ian Burfield (BirdLife International; mailto:ian.burfield@birdlife.org).

Although many of the global indicators and datasets are freely available via online tools or downloadable content, the limited access to some of these data has been emphasised by survey respondents (**Barrier 4**). Global data providers could consider, where feasible, allowing for open access to data for national level data users (see Box 7). Creating specific data sharing and use agreements for these data users would help protect the interests of global data providers, while allowing for the data to be used at the national level.

There is a perceived lack of technical capacity at the national level to incorporate global indicators and/or datasets into NBSAP implementation and national reporting processes, as stated by survey respondents (**Barrier 5**). Therefore, where global data can be identified as readily applicable, available and accessible, efforts should be made to alleviate capacity issues to address this barrier at the national level.

Producing national level indicator development guidance materials in a range of languages that are available offline (either hard copy or downloadable) is a relatively easy step that can be taken, providing a quick win both in terms of filling national level data gaps and the tailoring of global indicators and

[36] Secretariat of the Convention on Biological Diversity (2014) Global Biodiversity Outlook 4. Montréal, 155 pages.
[37] EBCC/RSPB/BirdLife/Statistics Netherlands; Sauers et al. (2014)

datasets. The BIP have developed an 'Indicator Toolkit', designed to be a one-stop-shop for indicator practitioners. The toolkit offers easy access to guidance, help and support to national indicator developers, including guidance documents for specific BIP indicators, developed to assist users in producing these indicators at the national level[38]. The Roadmap document, produced alongside this Information Document, also contains information on each of the global indicators from the BIP suite that are currently available for use at the national level (see Table 1).

Box 7. BirdLife Data Zone: Country Profiles

BirdLife International have developed an open access web portal displaying scientific data on the world's bird species and the sites critical to their conservation. Through the Country Profiles, these data can be obtained at the national and territorial levels, as well as relevant policy information, and access to additional resources and publications. The portal was specifically designed to provide information and assistance to countries in developing their NBSAPs and for national reporting.

Figure 8 Screenshot of the BirdLife Country Profile for Cambodia[39]

[38] http://www.bipindicators.net/nationalindicatordevelopment

[39] BirdLife International (2015) Country profile: Cambodia. Available from: http://www.birdlife.org/datazone/country/cambodia.

3.2 National level biodiversity practitioners

There are currently 33 indicators available from the BIP global indicator suite that are ready for use at the national level (see Table 1 and Annex 2). These cover 17 of the 20 Aichi Targets. All BIP global partners stated that they would be interested in supporting national stakeholders in reproducing their respective indicators at the national level. Where national indicators are limited or missing, global indicators can be disaggregated and used at national level, or global indicator methodologies can be applied at the national level. For example, national Red List Indices (RLIs) can be calculated either by disaggregating the global indices, or by repeatedly assessing extinction risk at the national scale, and many countries have compiled national Red Lists which form the basis of the latter approach (see Box 8).

Box 8. The Red List Index[40]

The Red List Index (RLI) shows trends in the extinction risk of sets of species. It requires data from repeated assessments of species using the Red List categories and criteria, which are available for many more species than detailed, reliable, time-series of population abundance data. This is because such data are generally available for entire suites of species (e.g. all species worldwide in a particular taxonomic group, or all regularly occurring species in a country for a particular taxonomic group) they produce potentially less-biased indicators than those based on a subset of better-studied species.

More information about producing national RLIs can be found in the publication, IUCN Red List Index – Guidance for National and Regional Use available from: https://cmsdata.iucn.org/downloads/rli_guidelines_final_4march09_1.pdf

There are at least 515 national Red Lists for various taxonomic groups, covering at least 122 countries, of which Red Lists for 43 countries are available online at http://www.nationalredlist.org. However, not all these use the guidelines for application of the IUCN Red List Categories and Criteria at regional and national scales, so results may not be comparable between countries.

It is important to recognize that global datasets cannot always replace local or national data, especially in smaller countries in more remote locations as described by these two respondents:

"The confined territory of [my country] *make global indicators ineffective in catching the specifics of the national biodiversity trends. Global indicators are helpful to compare the national situation to the overall global situation and to give hints on the scientific data collection for a certain indicator, however for measuring specific national trends, the spatial scale is too wide and national indicators are better suited for our evaluation".*

"When evaluating national development it seems most appropriate to use data from national level. [My country] *has relatively good national data sources. Because of specific circumstances (northern location, low population density etc.) many of the global and even regional issues are not that relevant in* [my country]*".*

Respondents to the survey expressed concerns over the quality of global indicators and datasets, particularly their geographical and temporal coverage and the sensitivity of the indicators/datasets to respond to national level changes (**Barrier 1**).

Where national information is limited or missing, global datasets can supplement national datasets in order to monitor biodiversity and assess progress towards meeting conservation targets. Available data

[40] www.nationalredlist.org

from satellite remote sensing, for example, could be used to monitor progress on national and international targets. However national level capacity to verify and use these data, together with issues around political will, can make the integration of global datasets problematic. Data derived from satellite remote sensing can provide estimates on land cover, forest areas and water provision (for example annual estimates of tree-cover are now freely available at 30m resolution globally – see http://www.globalforestwatch.org/). These datasets can be coarse in resolution or differ depending on the data sources, however efforts are being made by the providers of global remote sensing products to enhance access, continuity and affordability for national level users, and this includes increasing resolution[41]. In areas where there is less capacity for *in situ* monitoring, or where national level information is not available or accessible, high resolution global datasets can be used to complete the picture in combination with national level datasets. One of the highest resolution global datasets, GlobeLand30, is freely available in order to promote scientific data sharing in the fields of Earth observation and geospatial sciences (see Box 9).

Box 9. GlobeLand30 land cover tool

In 2014 China donated the first open-access, high resolution map of Earth's land cover (named GlobeLand30), to the United Nations, as a contribution towards global sustainable development and combating climate change. Datasets at 30-metre resolution were collected for the map, making them valuable for monitoring environmental changes and for resource management at global, regional and local scales.

The GlobeLand30 datasets are freely available and comprise ten types of land cover, including forests, artificial surfaces and wetlands, for the years 2000 and 2010. They were extracted from more than 20,000 Landsat and Chinese HJ-1 satellite images (see www.globallandcover.com).

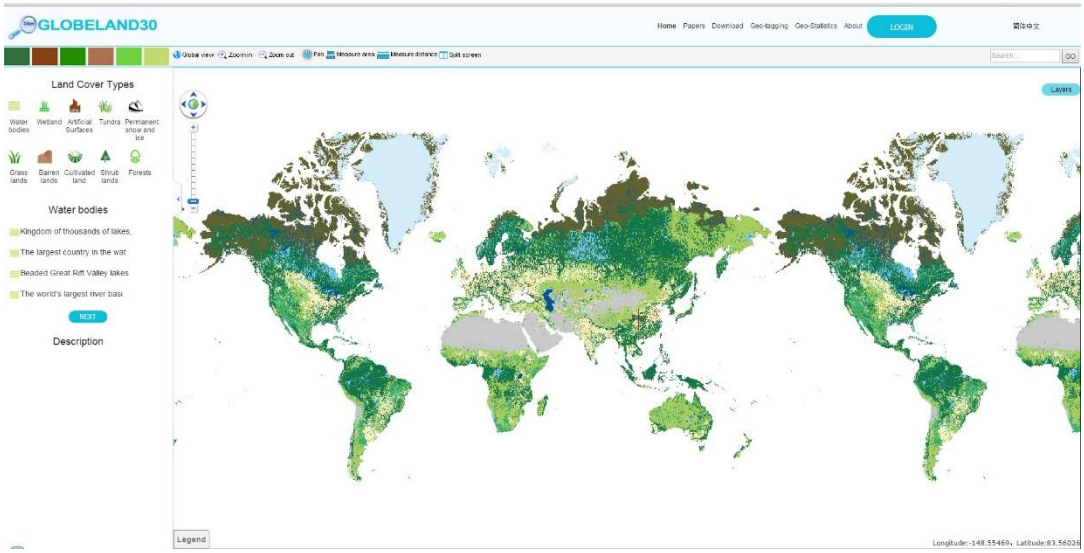

Figure 9. Screenshot of the GlobeLand 30 land cover tool[42].

Source: Chen Jun, Yifan Ban, Songnian Li, 2014, China: Open access to Earth land-cover map, *Nature*, 514:434, 23 Oct. 2014.

[41] Turner, W., Rondinini, C., Pettorelli, N., Mora, B., Leidner, A. K., Szantoi, Z., Buchanan, G. et al. 2015. Free and open-access satellite data are key to biodiversity conservation. *Biological Conservation*, 182, 173-176.
[42] http://www.globallandcover.com/home/Enbackground.aspx

Those global indicators included in the suite brought together under the BIP are often used within peer reviewed literature and for published statistical analyses. For example the global indicators brought together under the BIP were utilised in two main ways to support the Fourth Edition of the Global Biodiversity Outlook (GBO-4), a mid-term assessment of progress towards implementation of the Strategic Plan for Biodiversity 2011-2020. Firstly, updates for 37 of the 48 listed BIP indicators, were provided to the production team, for the development of storylines within the status and trends sections of the Aichi Target chapters. Secondly, an indicator synthesis was produced in which more than 100 datasets were identified as candidate global indicators to be extrapolated to 2020. Those indicators, from the BIP and non-BIP sources, that were retained for the GBO-4 analysis were selected using a set of criteria (Table 2) that were designed to ensure the suitability and credibility of the indicators, while still ensuring that they were sufficiently data-rich for statistical extrapolation.

Table 2. Criteria used to identify indicators for use in the GBO-4 extrapolation to 2020 analysis[43].

Criteria used to identify which BIP and non-BIP indicators were incorporated in the GBO-4 extrapolation to 2020 analysis
Relevance to the Aichi Target
Scientific and institutional credibility, either through publication in the peer-reviewed literature or through having an institutional basis
An end data point after 2010, although this was relaxed where an Aichi Target had few indicators or where an indicator was particularly relevant
At least 5 data points
Broad geographic coverage

The resulting indicator extrapolations formed one of the main sources of information supporting the production of GBO-4 and they were also published in the scientific journal, *Science43*. Applying the peer-reviewed methodology of a global indicator to nationally derived data can assist in the production of more robust indicators at the national level (see Box 10). However Bubb et al (2011)[18], highlighted the following considerations for the application of global indicator methodologies at the national level:

"All the global headline indicator methods can in principle be applied at national scale, but such an application requires an understanding of their scientific concept and data requirements. This is most straightforward for the global indicators which rely on data reported at the national level, such as coverage of protected areas and extent of forests, and which are area-based measures. For some global indicators there are conceptual issues which need to be considered before their application at national level. For example, this is the case for the Red List Index and River Fragmentation, where the unit of analysis may well not fit within national boundaries, such as the global population of a species covering many countries, or a multi-national river system. A national calculation for these indicators would first need to determine the appropriate scale and boundaries for including data, such as nationally endemic species, discrete national populations of species, or river basins and sub-basins".

Box 10. Applying a peer-reviewed methodology – the Index of Linguistic Diversity

Traditional environmental knowledge is expressed and transmitted largely through language. If a language is in decline that generally means that the knowledge it conveys is also in decline.

Current data in the Index of Linguistic Diversity (ILD) database could be used to provide a first-cut picture of national linguistic diversity. If finer-grained data from the national level (e.g., dialect censuses) is available, it could be fed into the ILD methodology to provide a much more detailed picture of national linguistic diversity.

[43] Tittensor, D. P., Walpole, M., Hill, S. L., Boyce, D. G., Britten, G. L., Burgess, N. D., ... & Visconti, P. (2014). A mid-term analysis of progress toward international biodiversity targets. *Science*, *346*(6206), 241-244.

The ILD depends on estimates of speaker numbers, which are known to vary widely in quality. The ILD uses data-filtering techniques to try to eliminate those data points that are most likely to be anomalous. The reliability of speaker numbers is something that has to be accounted for at all levels, from global to national. The ILD can be applied nationally and regionally. No change in methodology is needed, just the relevant data.

Source: Loh, J. and Harmon, D. 2014. *Biocultural Diversity: Threatened species, endangered languages*. WWF Netherlands

National data can play a significant role in supporting analyses that track progress towards the Aichi Targets (**Barrier 2**). However, where national biodiversity information is fragmented between different national agencies, monitoring and reporting on conservation efforts is hindered. In cases where national level data has been aggregated in order to create a global indicator, it may be that the corresponding national level data holders are not well connected to the NBSAP or national reporting process. For example, during an assessment of the fourth national reports (4NR)[18], it was found that the 'Extent of forests and forest types' indicator was used in the 4NR by only 50 countries, despite many more than this having reported these data to the FAO Forest Resource Assessment. Accessing global datasets in order to identify where these data may originate from can assist in the integration of these national datasets, however this is not purely a technical issue. Political sensitivities and willingness, as well as poor linkages between national government departments, agencies and institutions, all play a part in limiting the sharing and use of national datasets[44].

National level practitioners have stated some concerns over the added value that global indicators and datasets can provide to NBSAPs and biodiversity-related assessments (**Barrier 3**). In cases where the disaggregation of a global indicator, or the application of a global methodology, are not relevant at the national level, there may still be underlying datasets that can be used to support the development of national indicators or in national assessments.

Easy access to biodiversity datasets for monitoring and reporting is needed at multiple scales. However, there are a number of methodological and logistical challenges in regards to the collection and sharing of data. In terms of data collection there is a lack of consistency on methodologies and statistical analyses at national and global levels, and in some cases inadequate capacity or expertise to collect data *in-situ*.

Biodiversity monitoring involves data-intensive and science-driven processes, yet there are capacity gaps in terms of generation, management and dissemination of information at the national level that need to be addressed. Countries face a number of challenges that impact effective conservation monitoring and reporting; these challenges include lack of technology, limited financial resources (resource allocation), lack of personnel (staff on-the-ground, technical knowledge, processing expertise), limited access to information (**Barrier 4**), and interoperability issues. In terms of data sharing, some of the challenges include the cost of acquiring data, data processing and access policies. CBD Parties are encouraged to use available global datasets as well as sharing their own data in order to harmonise monitoring systems. Countries can benefit from support with data management, standardised scientific methods, data analysis, and indicator development (**Barrier 5**). Global data sets and associated data may assist countries to bypass national capacity barriers and provide valuable information to monitor progress and inform conservation policy.

[44] UNEP/CBD/COP/11/INF/8

4 Conclusion

Global indicators, datasets and methodologies can be usefully applied at the national level in order to support indicator development, NBSAP implementation and policy and decision making processes. In some cases, these data have been derived from national level monitoring programmes, however there may be poor linkages between organisations and agencies, limiting the use of these data for NBSAP implementation and national reporting. Global data should not be used in replacement of data collected *in situ*, but rather be used as an effective way to fill gaps in information at the national level, and for enhancing the use of indicators at multiple scales.

Providing biodiversity practitioners, and other national level data users, with the confidence to use global indicators and datasets can contribute to the provision of more complete, and comparable, national reports. In turn it will allow an additional conduit through which global level data providers can better tailor their products to be more useful, specifically at the national level, and encourage the collection of national level data using standardised methodologies. The options presented for both global level data providers and national level indicator developers, will facilitate the use of global indicators and datasets where appropriate, boosting comparability between countries and creating a more accurate representation of national progress towards global targets for reports such as the Global Biodiversity Outlook.

Annex 1

Survey Questions

Introduction

Thank you for contributing to this survey, which is being conducted by UNEP-WCMC in collaboration with the Secretariat of the Convention on Biological Diversity. The survey has two sections. The first section relates to the different approaches used by countries to assess progress towards the Aichi Biodiversity Targets in their 5th National Reports. The second section examines how countries use or could use global level data to support monitoring of the Strategic Plan for Biodiversity 2011-2020.

The survey results will support the preparation of background documents for the Ad Hoc Technical Expert Group (AHTEG) on indicators for the Strategic Plan for Biodiversity 2011-2020. The AHTEG is being held in response to paragraph 20(b) of decision XII/1 and with the generous financial support of the European Union and the Government of Switzerland. The results will also be used to support the development of a Road Map to support NBSAP practitioners in using global datasets to support national biodiversity monitoring. All documents will be made available to survey respondents for comments before release.

Section 2: Using global level data to support monitoring of the Strategic Plan for Biodiversity

1. Have you used global indicators and/or global datasets in the preparation of your NBSAP or National Reports? (A global indicator refers to a specific measure which provides information on the status or trends of biodiversity at the global level. These indicators are based on data sets which cover large parts of the world and in some cases be disaggregated into national or regional information).

2. Which datasets/indicators have you used?

3. Would you consider using additional indicators and datasets in the future?

4. Did you encounter any problems in the use of these indicators/datasets?

5. What were the barriers to your use of global indicators and/or datasets? (i.e. technical capacity, accessibility of data, limited coverage)

6. What would give you the confidence to use these indicators/datasets in the future?

7. Are you aware of the list of indicators identified in COP decision XI/3 and the factsheets on indicators brought together by the Biodiversity Indicators Partnership (BIP: www.bipindicators.net)?

8. If yes: Would you be interested in examining, in collaboration with members of the Biodiversity Indicators Partnership (www.bipindicators.net) how these could be used in your NBSAP or National Reports

Annex 2

What global indicators are currently available from the BIP suite that can be utilised at the national level, how are they accessed and what options are available for their use?

Following a review of the current suite of BIP global indicators and underlying datasets, it was found that 33 of the BIP global indicators are available for use at the national level. These indicators cover 17 of the 20 Aichi targets and can be readily used to support national reporting processes.

Table 3 shows information for each of these indicators and datasets, including:

- Strategic goal
- primary and secondary Aichi Targets
- Indicator type (State, Pressure, Response)
- Sampling dates
- Scale
- Availability of data

All BIP global indicator partners have confirmed that, where possible, they would be interested in supporting national stakeholders in reproducing their respective indicators at the national level. Factsheets for each of the indicators and datasets currently available from the BIP suite for use at the national level have been produced as a quick reference guide for biodiversity practitioners. The factsheets contain information on: corresponding Aichi Targets; indicator type (state, pressure or response); sampling dates; level of disaggregation available; how to access the data; and current availability of the datasets. These characteristics are displayed using a series of icons:

Icons	Description	Icons	Description
	Aichi Target number	*Availability*	
Indicator Type			Online
	State		pdf
	Pressure		Excel
	Response		
Access			
	Freely available for non-commercial use		
	Available with agreements		
	Please contact provider		

Table 3. Global indicators and datasets available from the BIP suite for use at the national level.

Strategic Goal	Global indicator	Aichi Targets Primary	Secondary	Indicator type	Sampling dates	Aggregated from national or sub-national level data	Availability
A	Biodiversity Barometer (Page 37)	1		R	2009-2015	Yes	
A	Ecological Footprint (Page 39)	4		P	1961-2011	Yes	
B	Extent of Forests and Forest Types (Page 41)	5		S	1990-2010	Yes	
B	Marine Trophic Index (Page 43)	6		P	1950-2006	Yes	
B	Marine Stewardship Council Certified Catch and Fishery Improvements (Page 45)	6	4	R	1999-2015	Yes	
B	Red List Index (impacts of fisheries on marine species) (Page 71)	6		S	1980-2012	In some cases	
B	Area of Forest Under Sustainable Management: Certification (Page 47)	7		R	1995-2015	Yes	
B	Loss of Reactive Nitrogen to the Environment (Page 49)	8		P	2001-2012	Yes	
B	Nitrogen Deposition (Page 51)	8		P	1860-2015	No	
B	Red List Index (impacts of pollution) (Page 71)	8		S	1980-2012	In some cases	
B	Adoption of National Legislation Relevant to the Prevention or Control of Invasive Alien Species (Page 53)	9	5, 10, 11, 12, 17	R	2010	Yes	EXCEL .CSV

B	Trends in Invasive Alien Species Vertebrate Eradications (Page 55)		5, 10, 11, 12, 17		1900-2014	No	
B	Trends in Numbers of Invasive Alien Species Introduction Events (Page 57)				1900-2014	No	
B	Red List Index (impacts of invasive alien species) (Page 71)				1980-2012	In some cases	
B	Cumulative Human Impact on Marine Ecosystems (Page 59)		4, 5, 6, 12, 15, 19		2008-2013	Yes	
B	Red List Index (reef-building coral species) (Page 71)				1980-2012	In some cases	
C	Coverage of Protected Areas (Page 61)		5, 12, 14, 17		1995-2015	Yes	
C	Management Effectiveness of Protected Areas (Page 63)				1990-2014	Yes	Varies
C	Protected Area Overlays with Biodiversity (Page 65)		5,12		1872-2014	Yes	
C	Wild Bird Index (Page 67)		5, 7		1961-2011	Yes	
C	Living Planet Index (Page 69)		5, 6, 7, 8, 9, 10, 11,14		1970-2014	in some cases	
C	Red List Index (Page 71)		4, 5, 6, 8, 9, 10, 11, 14		1980-2012	in some cases	

Strategic Goal	Global indicator	Aichi Target	Secondary Aichi Targets	Indicator type	Sampling dates	Aggregated from national or sub-national level data	Availability
C	Wildlife Picture Index (Page 75)	12	4, 5, 7, 10, 11, 15	S	2007-2015	Yes	
C	Genetic Diversity of Terrestrial Domesticated Animals (Page 77)	13		S	2000-2014	Yes	
D	Red List Index (species used for food and medicine) (Page 79)	14	4, 6, 12	S	1978-2010	in some cases	
D	Nutrition Indicators for Biodiversity (Page 81)	14		S	2007-2014	Yes	
D	Ocean Health Index (Page 83)	14	1, 4, 5, 6, 7, 10, 12, 15	S	2012-2013	Yes	
D	Red List Index (pollinating species) (Page 71)	14		S	1980-2012	In some cases	
E	Index of Linguistic Diversity (Page 85)	18		S	1970-2010	Yes	
E	Status and Trends of Linguistic Diversity and Numbers of Speakers of Indigenous Languages (Page 87)	18		S	2008-2011	Yes	
E	Number of Global Biodiversity Information Facility Records Over Time (Page 89)	19	9, 11, 12, 13	R	2003-2015	No	
E	Official Development Assistance Provided in Support of the Convention (Page 91)	20		R	2007-2013	Yes	PDF

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BIODIVERSITY BAROMETER

Aichi Biodiversity Target	Indicator type	Availability	Sampling dates	Disaggregation Available	Access
			2009-2015	National	

What is the Biodiversity Barometer?

The Biodiversity Barometer indicator measures the level of public awareness of biodiversity in case study countries; an increase in the indicator represents higher biodiversity awareness rates in these countries. The indicator also measures understanding of biodiversity, through the number of people that provided correct definitions of biodiversity. This information helps to identify gaps and distinguish groups which are most in need of awareness raising activity. Although this indicator does not have global coverage yet, the indicator continues to expand each year to include additional countries.

In addition to the above, the Biodiversity Barometer looks into sources of biodiversity awareness, personal importance of biodiversity to people, expectations towards companies. These issues are however not included as BIP indicators.

Producing this indicator nationally...

The Biodiversity Barometer has been conducted in 16 countries over the last 5 years. These countries include: Brazil, China, Colombia, France, Germany, India, Japan, Mexico, Peru, Netherlands, South Korea, Switzerland, UK, USA and Vietnam. Biodiversity Barometer Summaries from 2009 to 2015 and original datasets are available online *http://ethicalbiotrade.org/biodiversity-barometer/*

Use at the national level...

In the core countries (Brazil, France, Germany, UK and USA), 1000 consumers per country are interviewed every year. Each year, the Biodiversity Barometer features one or several new countries, in which approximately 1000 consumers are interviewed. The Union for Ethical BioTrade (UEBT) plans to revisit those countries to determine the historical development of biodiversity awareness, for instance in 2015 the survey was conducted again in India.

Further resources

Biodiversity Indicators Partnership website
http://www.bipindicators.net/biodiversitybarometer

Union for Ethical BioTrade
http://ethicalbiotrade.org/biodiversity-barometer/

Union for Ethical BioTrade

ECOLOGICAL FOOTPRINT

Aichi Biodiversity Target	Indicator type	Availability	Sampling dates	Disaggregation Available	Access
4	P		1961-2011	Regional National	

What is the Ecological Footprint?

Direct anthropogenic threats to biodiversity include habitat loss or damage, overexploitation, pollution, invasive species and climate change. These direct threats are the result of more distant, indirect drivers of biodiversity loss arising from consumption of resources and the generation of waste. The ultimate drivers of biodiversity threats are human demands for food, fibre and timber, water and energy and area on which to build infrastructure. As the human population and global economy grow, so do the pressures on biodiversity.

The Ecological Footprint tracks an important element of human pressure on the biosphere: demands for the limited supply of the Earth's renewable resources. The National Footprint Accounts (NFA) measure overall national consumption levels of provisioning and regulatory ecosystem services, and in parallel measure the national capacity to supply these services.

The Ecological Footprint is currently listed as a category "C" indicator for use in monitoring Aichi Target 4 of the Strategic Plan for Biodiversity 2011–2020 as it provides a proxy measure of underlying drivers of habitat loss (directly) and biodiversity loss (indirectly) at regional and national scales.

Producing this indicator nationally...

Ecological Footprint and biocapacity values have been published for more than 200 nations as part of the NFA produced by Global Footprint Network since 2003. A new edition of the NFA is independently calculated by Global Footprint Network and released every year: the most recent edition of the NFA (the NFA 2015 edition) covers the period 1961-2011. Detailed information on the methodology used to calculate nations' Ecological Footprints as well as input data and data handling processes are reported in Galli et al., 2014.

Applied at the national level, Ecological Footprint results shows that significant biocapacity deficits (when national consumption of provisioning and regulatory ecosystem services exceeds the capacity of national ecosystems to supply these services) exist in many countries. Moreover, for many of these countries these results seem to indicate that pressure on ecosystems and the consequent habitat loss could be more effectively addressed by reducing the demand for resource provisioning and regulatory ecosystem services elsewhere.

Use at the national level...

As of 2005, Global Footprint Network has been running a campaign named "Ten-in-Ten" aiming to have ten national governments adopt the Ecological Footprint by 2015. The ultimate goal of this campaign is for nations to use the Footprint framework to shift policies and investments. During the past 10 years, 68 nations have engaged with the organization directly, 18 nations have completed reviews of the Footprint (many of them independently) and 13 nations have officially applied it resulting in policy and investment shifts in 4 nations. Moreover, two governments are currently using the Ecological Footprint as a policy and decision-making tool for accounting resource consumption and pressure generation: the United Arab Emirates developed a Footprint scenario tool to assist in the development of science-based policies, while Ecuador became the first country to set a specific Footprint reduction target into its National Development Plan, that its Footprint be within its biocapacity by 2013. For more information on the Ten-in-Ten campaign and the various national applications of the Ecological Footprint visit: *http://www.footprintnetwork.org/en/index.php/GFN/page/ten_in_ten_campaign/*

Future developments...

Global Footprint Network continuously improves the Ecological Footprint methodology year after year and plans to keep releasing updated annual editions of the National Footprint Accounts for world countries. As such, users can expect to rely on annual national Ecological Footprint updates, which can be used for benchmarking and monitoring human pressure on ecosystems and biodiversity.

Further resources

Biodiversity Indicators Partnership website
http://www.bipindicators.net/ecologicalfootprint

Galli, A., Wackernagel, M., Iha, K., Lazarus, E., 2014. Ecological Footprint: implications for biodiversity. Biol. Conserv. 173, 121–132.
Online at: *http://www.sciencedirect.com/science/article/pii/S0006320713003741*

Global Footprint Network
Advancing the Science of Sustainability

Global Footprint Network

EXTENT OF FORESTS AND FOREST TYPES

Aichi Biodiversity Target	Indicator type	Availability	Sampling dates	Disaggregation Available	Access
			1990-2010	Regional National	

What is the Extent of Forests and Forest Types indicator?

Forests cover 30% of the total land area and include some of the most diverse ecosystems on Earth. The extent of forests is an easily understood baseline variable, which provides a first indication of the relative importance of forests in a country or region. Estimates of change in forest area over time provide an indication of the demand for land for forestry and other land uses, as well as of the impact of significant environmental disasters and disturbances on forest ecosystems.

This indicator also serves as a baseline variable in the sense that it directly or indirectly relates to the development of other forest related variables such as the diversity and abundance of species, deforestation, forest fragmentation, area of forest under sustainable management etc. However, the extent of forest is only one factor in assessing the world's forests and their contribution to the conservation of biological diversity. It is also vital to present comparable data on the different forest types, to examine forest health and look at the usage and management of these forests. Further, the net loss of forest area is not in itself sufficient to describe land-use dynamics that include both loss of forests due to deforestation and natural disasters and gains in forest area from planting or natural expansion.

Producing this indicator nationally...

The Global Forest Resources Assessments (FRA) are now produced every five years in an attempt to provide a consistent approach to describing the world's forests and how they are changing. The Assessment is based on two primary sources of data: Country Reports prepared by National Correspondents and remote sensing that is conducted by the Food and Agriculture Organization of the United Nations (FAO) together with national focal points and regional partners. Data are collected and validated at country level.

A number of guidance materials are available for national indicator developers, including:

- Terms and definitions
- FRA template
- Guide for country reporting for FRA 2015

These can be found at: *http://www.fao.org/forestry/fra/83059/en/*

Use at the national level...

FRA work with data sent by the National Correspondents, who are officially nominated by countries. Data are collected and validated at country level. The FRA 2015 has data since 1990.

To access the dataset and the Country Reports please visit: *http://www.fao.org/forestry/fra/en/*

Future developments...

Information on trends in the extent of forest area at national, regional and global scales for the period 1990-2000-2005 and 2010 are available; The next update will be available in 2015, as the FRA is update every 5 years.

Further resources

Biodiversity Indicators Partnership website
http://www.bipindicators.net/forestextent

FAO Global Forest Resources Assessment
http://www.fao.org/forestry/fra/83059/en/

Food and Agriculture Organization
of the United Nations

MARINE TROPHIC INDEX

Aichi Biodiversity Target	Indicator type	Availability	Sampling dates	Disaggregation Available	Access
			1950-2006	Regional National	

What is the Marine Trophic Index?

The Marine Trophic Index (MTI) has been developed by the **Sea Around Us project** at the University of British Columbia (UBC) Fisheries Centre, and was established to investigate the impacts of fisheries on the world's marine ecosystems. The MTI can be used to describe the complex interactions between fisheries and marine ecosystems and communicate a measure of species replacement indices by fisheries. The concept and underlying methods to estimate the MTI have been well–tested and have undergone substantial peer-review using existing information. The MTI is calculated from catch composition data collected by the Food and Agricultural Organization of the United Nations (FAO), after being spatially allocated to Exclusive Economic Zones (EEZs), Large Marine Ecosystems (LMEs) or other relevant spatial ecosystem components. The concept and approach is now widely accepted.

Producing this indicator nationally...

The MTI is available for the EEZs of every coastal country in the world and for all currently defined LMEs. Furthermore, the MTI indicator can be readily calculated and applied at different scales from global to national. For countries such as Malaysia and Indonesia, with EEZs in different basins, the MTI can be calculated for sub-national areas.

All data, including country level MTIs are available from the Sea Around Us website. For advice about the interpretation of MTIs contact the Sea Around Us Project via the 'feedback' link on the project website (*www.seaaroundus.org*).

Use at the national level...

The Marine Trophic Index has been used as an indicator numerous studies at regional, national and sub-national levels, see case studies at *www.fishingdown.org*

Future developments...

The MTI has been further developed into the RMTI that will address issues of spatial expansion that are often masked by the original MTI. The new data will update older data used for every country in the world by including unreported catch data as well as major discards. RMTI to be implemented by late summer 2015 via the Sea Around Us Website (*www.seaaroundus.org*).

Further resources

Biodiversity Indicators Partnership website
http://www.bipindicators.net/mti

Sea Around Us project
www.seaaroundus.org

UBC Fisheries Centre
www.fisheries.ubc.ca

Sea Around Us Project,
University of British Columbia

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MARINE STEWARDSHIP COUNCIL CERTIFIED CATCH AND FISHERY IMPROVEMENTS

Aichi Biodiversity Targets	Indicator type	Availability	Sampling dates	Disaggregation Available	Access
6 4	R	*	1999-2015	Regional National	*

*Some catch data is available from individual fishery reports hosted on the MSC website, but to access more accurate and up to date tonnage data on a global or national basis, it is necessary to contact the MSC monitoring and evaluation team.

What is the MSC Certified Catch and Fishery Improvements indicator?

The Marine Stewardship Council's (MSC) Fisheries Standard comprises three core principles that every fishery in the program must meet: (1) Sustainable fish stocks; (2) Minimising environmental impacts; and (3) Effective management of the fishery.

Landings of MSC certified fish reveal trends in the number and size of fisheries which uphold these three pillars of ecological sustainability. Total MSC certified catch can be compared to the Food and Agriculture Organization of the United Nations (FAO) figures on the total wild catch of fish and marine invertebrates to gain an indication of the proportion of global fisheries that are managed to be ecologically sustainable. More broadly, this indicator points to the level of commitment to sustainability from fishers, seafood companies, government bodies, scientists, conservation groups and the public.

A critical aspect of the MSC program is that it allows fisheries that meet the standard's minimum requirements to be certified provided they commit to improvement action plans that result in best practice performance. Examples of improvements include reductions in catch to improve stock status, changes in fishing gear to minimise benthic habitat impact, or conducting a formal review of fishery management performance. Where necessary, improvements must be completed within the 5-year certification cycle, and may include a reduction in uncertainty, improvement in processes or outcomes and/or reduction in management risks. Through this process, the MSC program incentivises positive changes in global fisheries.

Producing this indicator nationally...

This indicator is produced using green weight catch data collected by accredited third party certification companies. Some catch data is available from individual fishery reports hosted on the MSC website, but to access more accurate and up to date tonnage data on a global or national basis, it is necessary to contact the MSC monitoring and evaluation team.

The total tonnage of MSC certified sustainable fish can be compared to FAO wild capture figures in order to calculate the share of global or national wild catch that is sustainably harvested.

These FAO figures can be generated on a national basis using the FAO data portal *http://www.fao.org/fishery/statistics/global-capture-production/en*. The MSC does not include catch of miscellaneous aquatic animal products or whales, seals and other aquatic mammals when calculating this indicator. FAO catch data is published two years in arrears, so the most recent MSC tonnage data is compared to global capture data that is two years out of date.

Use at the national level...

The MSC certified catch compared to the total wild catch of fish and marine invertebrates can be used as an indication of the proportion of national fisheries that are managed to be ecologically sustainable. More broadly, this indicator points to the level of commitment to sustainability from fishers, seafood companies, government bodies, scientists, conservation groups and the public. This indicator also allows countries to compare their national commitment to sustainable fishing to other countries using the proportion of sustainable catch figures.

Future developments...

There are no current plans to develop this indicator further on the global or national level. However the next update will be available in 2016.

Further resources

Biodiversity Indicators Partnership website
http://www.bipindicators.net/certifiedfisheries

Marine Stewardship Council
http://www.msc.org/

Marine Stewardship Council

AREA OF FOREST UNDER SUSTAINABLE MANAGEMENT CERTIFICATION

Aichi Biodiversity Target	Indicator type	Availability	Sampling dates	Disaggregation Available	Access
			1995-2015	Regional National	

What is the Area of Forest under Sustainable Management Certification indicator?

Certification provides for accurate data of forest area within a country that is independently audited as being sustainably managed. The Area of forest under sustainable management: certification indicator comprises data from two international forest certification systems: the Forest Stewardship Council (FSC) and the Program for the Endorsement of Forest Certification (PEFC). The indicator measures the area of responsibly managed forests, including natural or semi-natural forests that are used to produce timber and non-timber forest products, and forest plantations. An increase in the area of PEFC and FSC certified forest represents an increase in the area for which evidence of sustainable forest management is available in terms of forest managed responsibly with respect to biodiversity conservation, including the protection of critical ecosystems, in addition to promoting the social and economic, cultural and ethical dimensions of sustainable forest management.

Producing this indicator nationally...

FSC

The data for this indicator originate from the global FSC Certificate Database which can also be filtered by country or region. As a result this indicator can be produced at national and regional levels. The FSC Certificate Database contains up-to-date information as well as public summary reports for all issued certificates, allowing to identify relevant forest sites and audit results. It is available online at: *info.fsc.org*.

PEFC

The data for this indicator originate from the global PEFC Certificate Database available at *http://treee.es/find-certified*. This data has been filtered and provides information about national level available at *http://pefc.org/about-pefc/who-we-are/facts-a-figures*

For more information about producing regional and national forest certification indicators contact the FSC International Center at *m.karmann@fsc.org* and PEFC International at i*nfo@pefc.org*

Use at the national level...

FSC

FSC's public certification reports contain info about the area of High Conservation Values (such as e.g. wetlands (Aichi Target 11) and on protected areas (Aichi Target 10) which can be drawn from each of the reports, but not in a standardized format. So with some time investment information can be collected about such features on country level – with the limitation that it would only be about those wetlands which are in the scope of the certified forest management unit. In future FSC might deliver more info about Ecosystem Services (Aichi Target 14) from (FSC certified) forests through the ForCES Program.

Examples in which the indicator has been used include:

- ITC / SSI / Standard Comparison Tools databases and reports
  http://globalgovernanceprogramme.eui.eu/globalisation-database/
- FAO Forest Statistics (from time to time)
- UNEPs Vital Forest Graphics
  http://www.unep.org/vitalforest/Report/VFG-21-Certification-for-sustainable-forest-management.pdf

PEFC

PEFC provides meta-standards for Sustainable Forest Management (SFM) that are used for national level indicator development/production – see *http://pefc.org/resources/technical-documentation/pefc-international-standards-2010*

Assessment reports of national indicators developed based on the meta standard (as well as the national indicators themselves) are available at *http://pefc.org/resources/technical-documentation/national-standards*

Future developments...

FSC

FSC's public forest management certification reports provide more information than just the area of forests certified as managed responsibly. Data about protected areas and about high conservation values can be drawn from the reports of the individual certified entities and aggregated on nation, regional or global level. More information about Ecosystem Services of forests might be available soon.

PEFC

PEFC expect that within the next 2-3 years national forest certification systems (and therefore the indicator) will become available in more than a dozen countries (incl. Ghana, Guatemala, India, Japan, Mexico, Montenegro, New Zealand, Republic of Congo, South Africa, Thailand, Turkey, Vietnam)

Further resources

Biodiversity Indicators Partnership website
http://www.bipindicators.net/forestcertification

FSC

Forest Stewardship Council

PEFC
PEFC/01-00-01
Promoting Sustainable Forest Management
www.pefc.org

The Programme for the Endorsement of Forest Certification

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LOSS OF REACTIVE NITROGEN TO THE ENVIRONMENT

Aichi Biodiversity Target	Indicator type	Availability	Sampling dates	Disaggregation Available	Access
8	P		2001-2012	Regional National	

What is the Loss of Reactive Nitrogen to the Environment indicator?

Reactive nitrogen is chemically and biologically active, and is formed via the conversion of non-reactive atmospheric nitrogen (N_2) through artificial fertilizer production and/or fossil fuel burning. Inefficient use of fertilizer and/or fossil fuels results in loss of reactive nitrogen to the environment, which contributes to climate change, the formation of high ozone concentrations in the lower atmosphere, eutrophication of coastal ecosystems, nitrification of forests, soils and freshwater streams and lakes, and loss of biodiversity.

Producing this indicator nationally...

This indicator provides the first steps in identifying the 'nitrogen status' in a country and the possible consequences that might have to biodiversity through the loss of nitrogen to air, water or soil. Guidance documents for producing this indicator at the national level will become available soon through the International Nitrogen Initiative (INI) website (*www.initrogen.org*).

Use at the national level...

The indicator has been used during the compilation of 'The State of Biodiversity in Africa' report – due for publication in 2015 by the United Nations Environment Programme (UNEP).

Future developments...

An update is foreseen with respect to additional years, so a trend in nitrogen loss can be produced on a regional and national level.

Further resources

Biodiversity Indicators Partnership website
http://www.bipindicators.net/nitrogenloss

International Nitrogen Initiative
http://www.initrogen.org/

Nitrogen Footprint
http://www.n-print.org/

International Nitrogen Initiative

Nitrogen Footprint

NITROGEN DEPOSITION

Aichi Biodiversity Target	Indicator type	Availability	Sampling dates	Disaggregation Available	Access
			1860 onwards	Regional National	

What is the Nitrogen Deposition indicator?

Energy and food production have resulted in large increases of ammonia and nitrogen oxide emissions to the atmosphere on a global and regional basis, with subsequent increase in Nitrogen (N) deposition. There are now large regions of the world where average N deposition rates exceed 10 kg N/ha/yr, greater than an order of magnitude increase compared with natural rates. These rates are well in excess of the critical loads that have detrimental impacts on receiving ecosystems. Given the growing importance of the atmosphere in Nr distribution, it is critical to get a better understanding of the link between nitrogen deposition and biodiversity loss, hence the development of the 'nitrogen deposition' indicator.

Producing this indicator nationally...

It is recommended that any modelling approach used should evaluate the separate nitrogen sources (provided the necessary emission data are available) e.g. agriculture, industry, traffic, etc. In this way, intervention points can be assessed on higher spatial scales than would be possible with global data, enabling an adequate evaluation of possible abatement measures. For more information on producing national indicators of nitrogen deposition contact James Galloway, Albert Bleeker or Frank Dentener, associated with the International Nitrogen Initiative (*jng@eservices.virginia.edu; a.bleeker@ecn.nl; frank.dentener@jrc.ec.europa.eu*).

Use at the national level...

The Nitrogen Deposition indicator can be used on a global, regional, and national basis for a general understanding of nitrogen deposition patterns. For national use, model outputs more specifically focused on individual countries should be used as a supplementary tool for more definitive information.

Future developments...

Future developments will occur on two fronts—improving our knowledge of nitrogen deposition to regions of the world, and improving our understanding of the links between nitrogen deposition and biodiversity loss.

Further resources

Biodiversity Indicators Partnership website
http://www.bipindicators.net/nitrogendeposition

International Nitrogen Initiative
http://www.initrogen.org/

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ADOPTION OF NATIONAL LEGISLATION RELEVANT TO THE PREVENTION OR CONTROL OF INVASIVE ALIEN SPECIES

Aichi Biodiversity Target	Indicator type	Availability	Sampling dates	Disaggregation Available	Access
9 5 10 11 12 17	R	EXCEL .CSV	2010	Regional National	

What is the Adoption of National Legislation Relevant to the Prevention of Control of Invasive Alien Species indicator?

This indicator measures the management response globally, by tracking invasive alien species legislation for control and prevention at national and international levels. The more countries with Invasive Alien Species (IAS) and Biosecurity related legislation, the greater the global commitment to controlling the threat to biodiversity from IAS. The larger the number of IAS-relevant international policies, and the greater the level of national commitment to these, the greater the global commitment to controlling IAS. The more international agreements a country is party to the more strongly committed the country is to controlling IAS.

Producing this indicator nationally...

All countries (191 in 2010) party to the Convention on Biological Diversity (CBD) were included in this calculation. Ten multinational environment related agreements were used to quantify trends in the adoption of IAS related policy. National legislation related to the prevention, management and control of IAS was recorded including year of enactment, type of legislation (prevention, management etc.) and the data analysed to calculate the indicator[1].

Use at the national level...

As reported in 2010, 55% of the countries signatories to the CBD have enacted invasive alien species relevant national legislation, and most CBD parties were signatory to at least one of ten other multilateral agreements that cover IAS in some form. Among these countries 8% are signatory to all 10 international agreements.[1] For example, the Council of Europe has been developing and adopting codes of conduct addressing some key pathways (e.g. horticulture, botanic gardens, zoos, hunting, or fishing) of IAS. Moreover, once the European regulation on IAS is fully adopted, it will have major implications for neighbouring countries, but also on a global scale, as the European institution is a major partner for global trade.

1 McGeoch, M.A., Butchart, S.H.M., Spear, D., Marais, E., Kleynhans, E.J., Symes, A., Chanson, J. and Hoffmann, M. (2010). Global indicators of biological invasion: species numbers, biodiversity impact and policy responses. *Diversity and Distributions* 16, 95-108

Future developments...

This indicator was first calculated in 2010 and there has been no update since. Plans are to update this baseline, enhance it and make it available for global, regional and national use.

Further resources

Biodiversity Indicators Partnership website
http://www.bipindicators.net/iaslegislationadoption

IUCN SSC Invasive Species Specialist Group

Monash University

Concordia University

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TRENDS IN INVASIVE ALIEN SPECIES VERTEBRATE ERADICATIONS

Aichi Biodiversity Targets	Indicator type	Availability	Sampling dates	Disaggregation Available	Access
9, 5, 10, 11, 12, 17	R		1900-2014	Regional National*	

*Island nations

What is the Trends in Invasive Alien Species Vertebrate Eradications indicator?

Islands are the epicenter of the current global extinction crisis and invasive vertebrates are the leading cause of extinction on islands. Removing invasive vertebrates from islands is a well-established tool to protect and restore island ecosystems and prevent extinctions.

The Database of Island Invasive Species Eradications compiles all of the historical and current invasive vertebrate eradications on islands. Data from each project includes information on the island, methods used in the eradication and contact information for people knowledgeable about the eradication.

Producing this indicator nationally...

Eradication and removal of invasive vertebrate pests from Island countries protects biodiversity and prevents extinctions of threatened native and endemic species. A national level indicator will measure the commitment of the country to protect both globally and nationally threatened native and endemic species that occur in that country and their vulnerable habitats. Data from the Database of Islands and Invasive Species Eradications *http://diise.islandconservation.org/*, developed by Island Conservation, Coastal Conservation Action Laboratory University of California at Santa Cruz, IUCN SSC Invasive Species Specialist Group, University of Auckland and Landcare Research New Zealand was used in the development of this indicator. As of June 2014, the DIISE had 1,847 eradication records.

Use at the national level...

A disaggregated dataset was used in the development of the State of Conservation in Oceania (22 Pacific Islands Countries and territories).

Future developments...

The dataset which informs this indicator will be updated every year and available for national and regional level use.

Further resources

Biodiversity Indicators Partnership website
http://www.bipindicators.net/iasvertebrateeradications

IUCN SSC Invasive Species Specialist Group

Island Conservation

TRENDS IN NUMBERS OF INVASIVE ALIEN SPECIES INTRODUCTION EVENTS

Aichi Biodiversity Target	Indicator type	Availability	Sampling dates	Disaggregation Available	Access
9	P	EXCEL .CSV	1900-2014	Regional National	

What is the Trends in Numbers of Invasive Alien Species Introduction Events indicator?

This indicator measures the trends of invasive alien species (IAS) introductions. The greater the number of documented IAS the greater the threat to biodiversity from IAS. The indicator is based on data from 21 countries, which were selected for having at least 30 records of species with known invasion date. Species were designated as invasive according to standard evidence-based criteria. The indicator was based on 3914 IAS and 4903 species-country records. While all taxonomic groups were considered, the majority of records are plants, invertebrates, fish, mammals and birds. The trends were calculated as the geometric mean of the cumulative number of IAS across all 21 countries, the year 1970 was set as index value 1.

Producing this indicator nationally...

At the national level this indicator is useful to measure the trends in the presence/occurrence of alien and potentially IAS and inform decisions to do with prevention of alien species introduction and the management and control of IAS causing impacts on biodiversity and ecosystems.

Use at the national level...

Dis-aggregated national datasets were used in the assessment of the State of Conservation in Oceania in 2014 (22 Pacific Island Countries and Territories).

Future developments...

Global coverage is aimed by the end of 2015. Disaggregation at the national level is possible in early 2016 and these data will be available to use.

Further resources

Biodiversity Indicators Partnership website
www.bipindicators.net/iasintroductionevents

ISSG Invasive Species Specialist Group
IUCN SSC Invasive Species Specialist Group

ENVIRONMENT AGENCY AUSTRIA umweltbundesamt
Environment Agency Austria

CUMULATIVE HUMAN IMPACT ON MARINE ECOSYSTEMS

Aichi Biodiversity Targets	Indicator type	Availability	Sampling dates	Disaggregation Available	Access
			2008-2013	Regional National	

What is the Cumulative Human Impacts on Marine Ecosystems indicator?

The Cumulative Human Impact on Marine Ecosystems indicator predicts the impact on marine biodiversity and ecosystems from multiple anthropogenic stressors. Cumulative impact scores are high for much of the world's ocean, but coastal areas, where human uses of the ocean are concentrated, are particularly heavily impacted.

Cumulative impact assessments model, or predict, the overall impact from a suite of stressors based on the unique and cumulative vulnerability of biodiversity to anthropogenic stressors such as pollution, climate change and fishing. An increase in the cumulative impact score indicates that a stressor or suite of stressors is having an increased impact on biodiversity. As cumulative impact scores approach zero, biodiversity is decreasingly threatened by human activities.

Producing this indicator nationally...

This indicator provides the only comprehensive, standardized, transparent, quantitative and repeatable means to assess and map cumulative human impacts, providing a unique measure of the likely 'pristineness' of a system. The methods are flexible to use for habitats, taxa, or individual species, and the results can be used to inform a very wide range of policy and management objectives.

Most data and results from the initial assessment (published 2008) are currently available online. Tools, code and full set of data (raw to processed) will be available upon publication of most recent update. Results can also be explored and extracted using the tool SeaSketch (*www.seasketch.org*).

Use at the national level...

A synthesis of the patterns of all types of human impacts across the The Papahā naumokuākea Marine National Monument (Monument), an area surrounding a string of atolls and banks known as the Northwestern Hawaiian Islands (NWHI), was identified as being a useful tool for managers applying local scale spatial management of the Monument with an ecosystem-based perspective.

A more precise and comprehensive view of the spatial distribution of cumulative impacts in the Monument was provided by application of the cumulative impact mapping framework here on a finer scale (1 ha resolution) with location-specific data. Guidance on where to apply different management regulations and which threats are most in need of attention was provided by this analysis.

Future developments...

It is hoped that work will continue for the mapping of cumulative impacts globally on an annual basis. The next update for this indicator is pending, but likely to be summer 2016.

Further resources

Biodiversity Indicators Partnership website
http://www.bipindicators.net/cumulativehumanimpactsonmarinecosystems

Global Map of Human Impact on Marine Ecosystems
Halpern et al, 2008 A Global Map of Human Impact on Marine Ecosystems Science 319: 948-952

NCEAS
National Centre for Ecological Analysis and Synthesis

Centre for Marine Assessment and Planning

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COVERAGE OF PROTECTED AREAS

Aichi Biodiversity Targets	Indicator type	Availability	Sampling dates	Disaggregation Available	Access
11 (5, 12, 14, 17)	S		1962-2015*	Regional National	**

* The WDPA was established in 1981, but the mandate for the database dates back from 1959 when the United Nations (UN) Economic and Social Council called for a list of national parks and equivalent reserves in Resolution 713 (XXVIII). The first UN List of Protected Areas, as it became known, was subsequently published in 1962.

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What is the Coverage of Protected Areas indicator?

This indicator directly measures the extent of protected areas across the globe, and hence tracks progress towards the 17% terrestrial and 10% marine coverage targets (Aichi Target 11) looking at geographical coverage only.

Producing this indicator nationally...

The World Database on Protected Areas (WDPA), from which the indicator is calculated, compiles data of all protected areas in a given country. The global indicator is calculated by collating data from government agencies and other authoritative sources over the world and therefore regional and national level indicators can be calculated provided there are sufficient data available. Coverage of protected areas was for example used by the European Environment Agency as an indicator to track progress towards the European 2010 biodiversity target in European countries. The WDPA stores 28 different attributes for a given protected area which could be used to develop new protected area indicators depending on the purpose of the indicator.

The BIP has published guidance for national and regional use of the protected area coverage indicator. This guidance is available on the BIP webpage for this indicator. For more information about national and regional use of the protected area coverage indicator, contact Brian MacSharry at UNEP-WCMC (*brian.macsharry@unep-wcmc.org*).

Use at the national level...

The WDPA, from which the indicator is calculated, was used to produce the Asia Protected Planet Report 2014 which tracks progress towards achieving Aichi Target 11 at a regional and national level. For more information see: *http://www.unep-wcmc.org/resources-and-data/asia-protected-planet-report-2014*

Future developments...

Since March 2015, the WDPA accepts data on other effective area-based conservation measures (OECMs). This expansion of the WDPA is the first step to move forward on the identification and compilation of these conservation areas which are an important element to implement Aichi Target 11.

Further resources

World Database on Protected Areas User Manual
http://wcmc.io/WDPA_Manual

Biodiversity Indicators Partnership website
http://www.bipindicators.net/pacoverage

Protected Planet
To access the WDPA and see country level statistics see: *www.protectedplanet.net*

UNEP WCMC
UNEP World Conservation Monitoring Centre

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MANAGEMENT EFFECTIVENESS OF PROTECTED AREAS

Aichi Biodiversity Target	Indicator type	Availability	Sampling dates	Disaggregation Available
11	R	Varies depending on restrictions placed by data providers – data are becoming more freely available and with fewer restrictions*	1990-2014	Regional National

* Situation varies depending on assessment systems and data providers in various countries – in some cases this is possible now, in other cases it is unlikely to be possible in the near future

What is the Management Effectiveness of Protected Areas indicator?

This indicator can provide information on status and trend in effectiveness of management of protected areas that can be disaggregated to examine environmental, social and managerial aspects of protected area management. The indicator records the number and area of protected areas assessed for management effectiveness at a country level. The indicator therefore measures how effectively and equitably managed protected areas are, which is of critical importance in meeting Aichi Target 11, as the declaration of a protected area does not always result in adequate protection.

Producing this indicator nationally...

Management effectiveness of protected areas is calculated from the sites level assessments undertaken in protected areas around the world. UNEP-WCMC host and manage the Global Database on Protected Area Management Effectiveneess (GD-PAME), in collaboration with governments, non-governmental organisations, academia and industry. The GD-PAME can be used to report at national, regional and global levels. Site level data is not publically available unless specific approval for this has been granted by the data provider.

Use at the national level...

Many reports have been produced by the World Wide Fund for Nature (WWF) and others on management effectiveness in countries and regions. For example:

The Global Study into management effectiveness evaluation: *http://www.eci.ox.ac.uk/publications/downloads/coad11-protected-areas.pdf*

Thailand: *https://www.mangrovesforthefuture.org/assets/Repository/Documents/Management-Effectiveness-MFF-IUCN-2012.pdf*

South Africa: *https://www.environment.gov.za/sites/default/files/docs/management_effectiveness_saprotected_areas.pdf*

Future developments...

Going forward the aim of UNEP-WCMC is to expand the remit of Protected Planet to encompass additional information on other elements of CBD Aichi Target 11, such as management effectiveness, thereby establishing Protected Planet as the central hub for the communication, exchange, acquisition and analysis of all knowledge and data on the status and trends of protected areas.

Further resources

Biodiversity Indicators Partnership website
http://www.bipindicators.net/pamanagement

UNEP WCMC
UNEP World Conservation Monitoring Centre

THE UNIVERSITY OF QUEENSLAND
AUSTRALIA
University of Queensland

Eric Isselee/ Shutterstock.com

PROTECTED AREA OVERLAYS WITH BIODIVERSITY

Aichi Biodiversity Targets	Indicator type	Availability	Sampling dates	Disaggregation Available	Access
11 5 12	R		1959-2014*	National	

* The WDPA dates from 1981 and the UN list which it is based upon from 1959

What is the Protected area overlays with biodiversity indicator?

The protected area overlays indicator is currently made up of a composite of three sub indicators that together help to measure progress towards relevant elements of Target 11: 1) the degree of protection of terrestrial and marine ecoregions of the world; 2) the degree of protection of Important Bird Areas (IBAs); and 3) the degree of protection of Alliance for Zero Extinction sites (AZEs). IBAs and AZEs are two types of key biodiversity areas, i.e. site-scale priorities for biodiversity conservation, for which global data is available.

The sub indicators are calculated based on overlays of ecoregions, IBAs and AZEs with all designated protected areas recorded in the World Database on Protected Areas (WDPA). The WDPA is the most comprehensive global spatial dataset on marine and terrestrial protected areas available. The methodology used to create a global protected areas layer from the WDPA follows the one used to calculate the protected area coverage indicator.

By monitoring the percentage of eco-regions meeting the area targets set out by Aichi Target 11 this indicator tracks the progress towards ensuring that protected areas are ecologically representative. Furthermore, tracking the percentage coverage of AZEs and IBAs gives an indication of coverage of areas of particular importance for biodiversity.

The indicator can be used to assess the status of protection and trends in protection over time. It can be widely applied at various scales to measure policy response to biodiversity loss. UNEP-WCMC is working closely with the Alliance for Zero Extinction, BirdLife International and Conservation International to further improve the datasets and methodology used to calculate the IBA and AZE Protection Indices.

Producing this indicator nationally...

The Ecoregion Protection Indicator can be aggregated into protected area coverage of terrestrial biomes, marine provinces and biogeographic realms, and disaggregated at the regional and national level. The IBA and AZE Protection Indices can also be disaggregated in different ways to reveal underlying patterns in the degree of protection. For more information on how to produce this indicator nationally contact Naomi Kingston (*Naomi.Kingston@unep-wcmc.org*) or Neil Burgess (*Neil.Burgess@unep-wcmc.org*) at UNEP-WCMC.

Use at the national level...

Protected area overlays are not only a global indicator but can also be calculated for regions and nations provided that there are sufficient data available. The 2012 Environmental Performance Index, calculated by the Yale Center for Environmental Law and Policy and the Center for International Earth Science Information Network (CIESIN) at Columbia University, includes two protected area overlay indicators: one measures the degree to which countries achieve the target of protecting at least 17% of each terrestrial biome within their borders, the other measures if countries protect all the Alliance for Zero Extinction sites on their territory.

The BIP has published some guidance for national and regional use of the protected areas overlay indicator. This guidance is available on the BIP webpage for this indicator (*http://www.bipindicators.net/paoverlays*).

Future developments...

The datasets and methodology used to calculate this indicator will continue to evolve. Improvements in data coverage and quality in the World Database on Protected Areas (WDPA) and the data on ecoregions, IBAs and AZEs result in improved indicator quality.

Further resources

Biodiversity Indicators Partnership website
http://www.bipindicators.net/paoverlays

UNEP WCMC
UNEP World Conservation Monitoring Centre

BirdLife INTERNATIONAL
Birdlife International

ALLIANCE FOR Zero Extinction
Alliance for Zero Extinction

CONSERVATION INTERNATIONAL
Conservation International

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WILD BIRD INDEX

Aichi Biodiversity Targets	Indicator type	Availability	Sampling dates	Disaggregation Available	Access
12, 5, 7	S		1961-2011	Already produced by listed countries*	

*Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Latvia, Netherlands, Norway, Portugal, Slovenia, Spain (Catalonia), Sweden, Switzerland, and United Kingdom

What is the Wild Bird Index?

Birds are recognised as good indicators of environmental change and as useful proxies of wider changes in nature. The Wild Bird Index (WBI) measures average population trends of a suite of representative wild birds, as an indicator of the general health of the wider environment. The WBI is an easy-to-understand indicator that can be calculated for different geographic areas and habitats. This means that different WBIs can be produced for areas such as farmland and woodland, or inside and outside protected areas if suitable data is available. It is useful for analysis, interpretation of environmental issues and communication.

WBIs deliver scientifically robust and representative indicators for birds to support formal measurement and interpretation of national, regional and global targets to reduce, or halt, the rate of biodiversity loss. WBIs measure extinction and colonisation processes at a local scale among widespread and familiar birds in the environment (the survey methods count all bird species detected). In doing so, they shed light on the sustainability of the human use of that environment and how human impact is changing. By grouping species tied to particular habitats, it is possible to create habitat-based indices, hence providing an insight into the health of those habitats and an indication of the sustainability of human use.

Producing this indicator nationally...

The WBI project aims to promote and encourage the development of WBIs from national population monitoring schemes. Where such schemes already exist, it will coordinate and facilitate the collation of bird species' data and the generation of indices and indicators. Where there are none, it will provide tools and support to implement similar data collation and synthesis in a representative set of countries across regions, with the funds available to the project.

The Global WBI, which will be built on national data, is still in development. However, nations and regions have produced their own WBIs already from national bird monitoring schemes (e.g. Europe and North America) and these data will feed in to the global indicator.

Use at the national level...

WBIs are being used at a national level in at least 18 European countries, including in Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Latvia, Netherlands, Norway, Portugal, Slovenia, Spain (Catalonia), Sweden, Switzerland, and United Kingdom, and are in development in several others.

New bird monitoring schemes are being initiated in a number of countries in Europe, with the Africa region piloting this approach, but others elsewhere. These will produce data to allow national indicators to be produced, and to contribute to a global WBI in due course.

For more information about producing regional and national Wild Bird Indices, contact Richard Gregory at the Royal Society for the Protection of Birds (RSPB) (*Richard.Gregory@rspb.org.uk*) and/or Ian Burfield at BirdLife International (*Ian.Burfield@birdlife.org*).

Future developments...

There is a huge amount of ongoing and historic bird monitoring information (bird surveys and atlases) available across the globe; the challenge is to collate such data and to assess the degree to which it might contribute meaningfully to a global WBI. Information on such bird monitoring programmes and initiatives is being gathered from across the globe by the WBI project. The Wild Bird Index for habitat specialists will continue to expand, hopefully into a truly global indicator, and will soon include data from several African countries, including Uganda and Botswana, and from China. The latest data used in this storyline is from 2012; the next data update is due in 2015. New bird-monitoring schemes are now ongoing in countries such as Botswana, Kenya, Uganda and China. Assistance and encouragement is being provided to other countries. RSPB and BirdLife International hope to take this work forwards with indicator partners and other experts. Future development is funding dependent.

Further resources

Biodiversity Indicators Partnership website
http://www.bipindicators.net/WBI

RSPB
Royal Society for the Protection of Birds

BirdLife INTERNATIONAL
BirdLife International

USGS science for a changing world
U.S. Geological Survey

LIVING PLANET INDEX

Aichi Biodiversity Targets	Indicator type	Availability	Sampling dates	Disaggregation Available	Access
12 6 7 8 9 10 11 14	S		1970-2014	Regional National	

What is the Living Planet Index?

The Living Planet Index (LPI) is calculated using time-series data on more than 10,000 populations of over 3,000 species of mammal, bird, reptile, amphibian and fish from all around the globe. The LPI is the aggregate of indices of vertebrate populations from terrestrial, freshwater and marine systems. The method has recently been adapted with a new weighting procedure to give a better representation of global vertebrate diversity and to correct for a bias towards well studied species from Europe and North America.

The LPI uses time-series data that is of high temporal resolution and spatially explicit through being tied to a particular location. This allows for the recording of extensive metadata on local pressures or threats and conservation action, which could be specific to the assessment of national level biodiversity trends. The LPI data are readily accessible online through the Living Planet Database (*www.livingplanetindex.org*).

Producing this indicator nationally...

The LPI is not only a global index but can also be calculated for regions and nations, provided that there are sufficient data available.

LPIs have been produced for Uganda, Canada, Mediterranean Wetlands and the Arctic. At present, data submitted by nations and regions must be sent directly to the responsible organisations for the LPI, the World Wide Fund for Nature (WWF) and the Zoological Society of London (ZSL). Work has now been completed to make the database available online in the form of the Living Planet Database (*www.livingplanetindex.org*) with a view to encourage nations and regions to submit their data to produce both their own indicators and strengthen the global indicator.

For more information about producing regional and national Living Planet Indices, please contact Louise McRae (*louise.mcrae@ioz.ac.uk*) or Robin Freeman (*robin.freeman@ioz.ac.uk*).

Use at the national level...

LPIs have been produced for a number of different regions and countries. In 2006, 2008 and 2010, the LPI was applied at the national level to assess vertebrate trends in Uganda for their State of Uganda's Biodiversity reports. In 2008, the indicator formed the basis for an assessment of the change in population abundance in wetlands across the Mediterranean region (*static.zsl.org/files/med-wetlands-report-1061.pdf*). The LPI project has also had a long-standing collaboration with the Conservation of Arctic Flora and Fauna (CAFF), the biodiversity working group of the Arctic Council. This has resulted in a number of reports, such as the Arctic Species Trend Index (ASTI) in 2010 and an update in 2011, which focussed particularly on marine populations (*www.caff.is/asti/asti-publications*). Most recently, the LPI has been used to assess trends in Canadian biodiversity in the form of the Canadian Species Index (CSI).

Future developments...

We are keen to collaborate to a greater extent with outside organisations over the coming year, with a specific view to developing our national datasets. In-country partners are now able to directly access and contribute to the LPI through the online portal (*www.livingplanetindex.org*), which should facilitate the improvement of population data coverage in these regions. In combination with the established LPI method and additional training we can provide, we hope that this will allow for more national and regional-level indicators to be produced.

Further resources

Biodiversity Indicators Partnership website
http://www.bipindicators.net/lpi

ZSL LIVING CONSERVATION
Zoological Society of London

WWF
World Wide Fund for Nature

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RED LIST INDEX

Aichi Biodiversity Targets	Indicator type	Availability	Sampling dates	Disaggregation Available	Access
12 4 5 6 8 9 10 11 14	S		1980-2012	Regional National	

What is the Red List Index?

The Red List Index (RLI) shows trends in the extinction risk of sets of species. It requires data from repeated assessments of species using the Red List categories and criteria, which are available for many more species than detailed reliable time-series of population abundance data. Because such data are generally available for entire suites of species (e.g. all species worldwide in a particular taxonomic group, or all regularly occurring species in a country for a particular taxonomic group) they produce potentially less-biased indicators than those based on a subset of better-studied species.

Producing this indicator nationally...

National RLIs can be calculated either by disaggregating the global indices, or by repeatedly assessing extinction risk at the national scale. Examples of both approaches have been published. Many countries have compiled national red lists which form the basis of the latter approach (see *www.nationalredlist.org*), and an increasing number have done this twice or more using consistent methods, allowing national RLIs to be produced.

More information about producing national RLIs can be found in the publication, IUCN Red List Index – Guidance for National and Regional Use available from: *http://intranet.iucn.org/webfiles/doc/SpeciesProg/RLI_Guidelines_Final_4march09.pdf*

Use at the national level...

There are at least 515 national Red Lists for various taxonomic groups, covering at least 122 countries, of which Red Lists for 43 countries are available online at *http://www.nationalredlist.org*

Not all these use the Guidelines for application of the IUCN Red List Categories and Criteria at regional and national scales, so results may not be comparable between countries.

Examples of national RLIs include:

BirdLife International (2012) *Developing and implementing National Biodiversity Strategies and Action Plans: How to set, meet and track the Aichi Biodiversity Targets.* Cambridge, UK; BirdLife International. p. 17 *http://www.birdlife.org/datazone/sowb/sowbpubs#NBSAP2012*

Gärdenfors, U. 2010. Rödlistade arter i Sverige 2010 - *the 2010 red list of Swedish species ArtDatabanken*, SLU, Uppsala.

Herrando & Anton (2013) Changes in the conservation status of breeding birds in Catalonia (NE Iberian Peninsula) in the period 2002–2012 *Revista Catalana d'Ornitologia* 29:20-34.

Juslen et al 2013 Application of the Red-List Index at a National Level for Multiple Species Groups. *Cons Biol* 27: 398–406.

Lopez 2011 State of Paraguay's Birds. *http://www.birdlife.org/datazone/userfiles/file/sowb/pubs/Paraguay_en.pdf*

Pihl and Flensted 2011 A Red List Index for breeding birds in Denmark in the period 1991-2009. *Dansk Orn. Foren. Tidsskr*. 105: 211-218.

Quayle et al 2007 Trend in the Status of Breeding Bird Fauna in British Columbia, Canada, Based on the IUCN Red List Index Method. *Conservation Biology* 21: 1241–1247.

Rondinini, C., Battistoni, A., Teofili, C. 2014. *Lo stato della Biodiversità in Italia: l'applicazione per il volume dell'approccio Sampled Red List e Red List Index. http://www.iucn.it/pdf/Lo_Stato_della_Biodiversita_in_Italia.pdf*

Saiz et al 2015 Application of the Red List Index for conservation assessment of Spanish vascular plants. *Cons Biol* In press

Szabo et al 2012 Adapting global biodiversity indicators to the national scale: A Red List Index for Australian birds. *Biol Cons* 148: 61-68.

Woinarski et al 2015 Ongoing unraveling of a continental fauna: Decline and extinction of Australian mammals since European settlement. *Proc Nat Acad Sci USA* 112: 4531–4540.

Xu et al 2009 China's Progress toward the Significant Reduction of the Rate of Biodiversity Loss. *BioScience* 59: 843–852.

And for the latest list of relevant references, see *http://www.iucnredlist.org/about/publication/red-list-index*

Future developments...

We plan to develop functionality on the IUCN Red List website to make data and graphs available to facilitate calculation of RLIs at the national scale based on disaggregation of the global data.

Further resources

Biodiversity Indicators Partnership website
http://www.bipindicators.net/globalindicators

IUCN Red List Index
http://www.iucnredlist.org/about/publication/red-list-index

Additional indicators can be calculated using the RLI, however as these represents a more restricted subset of the global RLI dataset, in some countries there may be insufficient data for a meaningful index to be disaggregated at the national scale. In such cases it is better to calculate the index based on repeated assessments of national extinction risk based on national Red Lists, if these are available.

RLI (impacts of utilisation)
This version of the RLI is based on data for birds, mammals and amphibians only, and includes only those Red List category changes driven by utilisation or its control i.e. species uplisted to higher categories of extinction risk owing to unsustainable utilisation or species downlisted to lower categories of extinction risk owing to effective control or management of utilisation. It is relevant for showing whether consumption is sustainable and "the impacts of use of natural resources [are] well within safe ecological limits".

RLI (impacts of fisheries on marine species)
This version of the RLI is based on data for seabirds only, and is relevant for showing whether "fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems". The key reference for this indicator is Croxall et al 2012*.

RLI (impacts of pollution) (Aichi Target 8)
This version of the RLI includes only those Red List category changes driven by pollution or its control i.e. species uplisted to higher categories of extinction risk owing to the negative impacts of pollution or species downlisted to lower categories of extinction risk owing to effective control or management of threats from pollution. It is relevant for demonstrating whether pollution "has been brought to levels that are not detrimental to ecosystem function and biodiversity".

RLI (impacts of invasive alien species) (Aichi Target 9)
This version of the RLI includes only those Red List category changes driven by invasive alien species (IAS) or their control i.e. species uplisted to higher categories of extinction risk owing to the negative impacts of IAS, or species downlisted to lower categories of extinction risk owing to effective control or management of IAS. It is relevant for showing whether invasive alien species have been adequately "controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment". The key reference for this indicator is McGeoch et al 2010**.

RLI (reef-building coral species) (Aichi Target 10)
This version of the RLI shows trends for reef-building corals, and is relevant for demonstrating whether "the multiple anthropogenic pressures on coral reefs…are minimized, so as to maintain their integrity and functioning".

*Croxall, J. P, Butchart, S. H. M., Lascelles, B., Stattersfield, A.J., Sullivan, B., Symes, A. and Taylor, P. (2012) Seabird conservation status, threats and priority actions: a global assessment. *Bird Conserv. Int.* 22: 1-34.

**McGeogh, M.A., Butchart, S.H.M., Spear, D., Marais, E., Kleyhans, E.J., Symes, A., Chanson, J. and Hoffmann, M. 2010. Global indicators of biological invasion: species numbers, biodiversity impact and policy responses. *Diversity and Distributions* 16: 95-108

RLI (pollinating species) (Aichi Target 14)

This version of the RLI is based only on data for birds and mammals that are known or inferred to be pollinators, and is relevant for showing whether "ecosystems that provide essential services" have been adequately "restored and safeguarded". The key reference for this indicator is Regan et al 2015***.

International Union for Conservation of Nature

Birdlife International

International Union for Conservation of Nature - Species Survival Commission

Royal Botanic Gardens Kew

Zoological Society of London

Natural History Museum, London

IUCN SSC Invasive Species Specialist Group

***Regan, E. C., Santini, L., Ingwall-King, L., Hoffmann, M., Rondinini, C., Symes, A., Taylor, J. and Butchart, S. H. M. (2015) Global trends in the status of bird and mammal pollinators. *Cons. Lett*. DOI: 10.1111/conl.12162.

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WILDLIFE PICTURE INDEX

Aichi Biodiversity Targets	Indicator type	Availability	Sampling dates	Disaggregation Available	Access
12	S		2007-2015	Regional National	

What is the Wildlife Picture Index indicator?

The index was developed collaboratively by the Wildlife Conservation Society and the Zoological Society of London as an indicator derived from primary camera trap data (O'Brien et al 2010)[1]. The *Wildlife Picture Index* (WPI) was designed to meet the requirements of biodiversity monitoring indexes as described by Buckland et al. (2005)[2], and it monitors ground-dwelling tropical medium and large mammals and birds, species that are important economically, aesthetically and ecologically.

The WPI is defined as the geometric mean of the occupancies of the species in the community relative to the first year of sampling (baseline). The WPI can be aggregated upward from the site to the global level, and it can be disaggregated to capture trends at regional levels, functional groups of interest, or national level (if adequate national data are available).

Producing this indicator nationally...

The indicator has data available on tropical forest that has been collected for the past 7 years, which may be used by countries for qualitative assessments. However, data available from this indicator needs to be supplemented with data collected at the national level so that the indicator can be adapted at the country level.

Use at the national level...

There are a few publications on tropical forest that provide sub-global examples. We examine several aspects of terrestrial mammal species and community diversity (species richness, species diversity, evenness, dominance, functional diversity and community structure) at seven sites around the globe. The sites are located in Uganda, Tanzania, Indonesia, Lao PDR, Suriname, Brazil and Costa Rica. Please see *http://tinyurl.com/qbf30wf*

More detail on the methodology and the tools available to calculate the WPI are available here *http://tinyurl.com/07zg6z5*. Please see *http://tinyurl.com/olaofww* for further information on our approach to calculate the WPI and how it can be disaggregated for different groups of species.

1 O'Brien, T.G., Baillie, J.E.M., Krueger, L. & Cuke, M. (2010). The Wildlife Picture Index: monitoring top trophic levels. *Animal Conservation*, 13, 4, 335-343

2 Buckland, S.T., Magurran, A.E., Green, R.E. & Fewster, R.M. (2005). Monitoring change in biodiversity through composite indices. *Philos Trans R Soc Lond B Bio Sci*, 360 (1454), 243-254

Future developments...

We are currently working with countries (Brazil, South Korea, the Philippines and China) to adapt this indicator at the national level to monitor protected areas effectiveness. There is also interest from Colombia and Peru to pilot this approach.

Further resources

Biodiversity Indicators Partnership website
http://www.bipindicators.net/wildlifepictureindex

Wildlife Picture Index website
http://wpi.teamnetwork.org/wpi/welcome

TEAM Network

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GENETIC DIVERSITY OF TERRESTRIAL DOMESTICATED ANIMALS

Aichi Biodiversity Target	Indicator type	Availability	Sampling dates	Disaggregation Available	Access
13	S		2000-2014	Regional National	

What is the Genetic Diversity of Terrestrial Domesticated Animals indicator?

Genetic diversity in livestock species is important to agriculture and food production because it enables livestock to be raised in a wide range of production environments and to provide a wide range of products and services (food, fibres, manure, draught power, etc.). It also provides the basis for adapting livestock populations to future changes in environmental conditions or in demand for products and services. Livestock genetic diversity is threatened by various factors including the trend towards greater homogeneity in the world's livestock production systems and a lack of appropriate management strategies and policies. Planning measures to promote the sustainable use, development and conservation of animal genetic resources requires information on the diversity of these resources nationally and internationally.

The indicator is intended to show whether or not the objective of maintaining the genetic diversity of farmed and domesticated animals has been met using e.g. the proportion of breeds being at risk of extinction. The risk status of a breed is based on its population size.

Producing this indicator nationally...

It is possible to calculate the indicator at global, regional and national levels. For more information on producing a national indicator for the genetic diversity of terrestrial domesticated animals contact Roswitha Baumung *Roswitha.Baumung@fao.org*

Use at the national level...

Yes, regional reports and a national warning tool are available from the European Regional Focal Point for Animal Genetic Resources at *http://efabis.tzv.fal.de/* under the link "breeds".

Future developments...

The indicator is ready for use on national level, however improvements are to be made to the reporting tools in the Domestic Animal Diversity Information System DAD-IS *http://www.fao.org/dad-is* with regard to improved user-friendliness and flexibility.

Further resources

Biodiversity Indicators Partnership website
http://www.bipindicators.net/domesticatedanimals

Food and Agriculture Organization of the United Nations

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RED LIST INDEX (SPECIES USED FOR FOOD AND MEDICINE)

Aichi Biodiversity Targets	Indicator type	Availability	Sampling dates	Disaggregation Available	Access
14	S		1978-2010	Regional National*	

* Regional and national cuts could be made but the data on species are at the global level

What is the Red List Index (species used for food and medicine)?

Biodiversity harvested for food and medicine contribute to health, livelihoods and well-being. Unsustainable use and other threats to species used for food and medicine must be prevented and ecosystems maintained to ensure these vital ecosystem services continue to contribute to human health, livelihoods and well-being, particularly for the poor and vulnerable who may have no alternatives for their primary health care.

The indicator comprises two elements: the *Red List Index (RLI) for amphibians, birds and mammals used for food and medicine*; and an *Accessibility Index* to track the changes in affordability of wild sourced products compared with generic/staple products.

Producing this indicator nationally...

The RLI element of this indicator focuses on the global status of species used for food and medicines. National RLIs for utilized species can be calculated either by disaggregating the global indices, or by repeatedly assessing extinction risk at the national scale. Many countries have complied national red lists (generally for all vertebrate species) which form the basis of the latter approach (see *www.nationalredlist.org*). As they increasingly do so many more national RLIs will become available which can be disaggregated for utilized and non-utilized species.

The accessibility element of this indicator is primarily focused at the national scale as data has been collected in eight countries. Price data are required on selected wild products as well as "domestic" alternatives. Global data sets can be used on income. Regional trends may also be identified if the countries selected are assumed to represent Africa, Asia and Latin America. It would be relatively simple to conduct regularly and inexpensively at the national level.

Use at the national level...

This version of the RLI is based on data for birds, mammals and amphibians that are coded on the IUCN Red List as being used by humans for food and medicine. As this represents a more restricted subset of the global RLI dataset, in some countries there may be insufficient data for a meaningful index to be disaggregated at the national scale. In such cases it is better to calculate the index based on repeated assessments of national extinction risk based on national Red Lists, if these are available.

Information on producing national RLIs can be found in the 2010 BIP publication, IUCN Red List Index – Guidance for National and Regional Use, available from the 2010 BIP website (*www.twentyten.net/guidancedocumentsfornationaluse*).

If you are interested in producing the Red List Index (species used for food and medicine) indicator at the national level, please contact Thomasina Oldfield at TRAFFIC (*Thomasina.oldfield@traffic.org*).

Future developments...

Currently no future plans.

Further resources

Biodiversity Indicators Partnership website
http://www.bipindicators.net/foodandmedicine

TRAFFIC

IUCN SSC Medicinal Plant Specialist Group

International Union for Conservation of Nature

Birdlife International

NUTRITION INDICATORS FOR BIODIVERSITY

Aichi Biodiversity Target	Indicator type	Availability	Sampling dates	Disaggregation Available	Access
14	S		2007-2014	Regional National	

What is the Nutrition Indicators for Biodiversity indicator?

The Nutrition Indicators for Biodiversity, which formed part of the original BIP indicator suite, are currently inactive. However, the underlying database which supported their production includes a wealth of data which could support national level monitoring and implementation.

Data of sufficient quality and quantity on food composition and food consumption for biodiverse foods are a prerequisite to incorporate food biodiversity aspects into different aspects of nutrition (e.g. a more precise estimation of nutrient intakes), health (e.g. favour food-based approaches including biodiversity to combat malnutrition), agriculture (increase the mass production of foods with higher nutrient contents to combat malnutrition) or environment (in view of climate change know which foods are suitable and nutritious for a given ecosystem). Nutrition and biodiversity feature directly in the UN Millennium Development Goals to "Halve the proportion of people who suffer from hunger" (Goal 1) and to "Ensure environmental sustainability" (Goal 7).

Agricultural biodiversity has played a pivotal role in sustaining and strengthening food, nutrition, and health and livelihood security all over the world. Although progress has been made in enhancing productivity through the sustainable use of genetic resources for food and agriculture, over 800 million people suffer from hunger and malnutrition. There is a need to integrate biodiversity into food security and anti-hunger policies. In order to do so our knowledge on food composition and consumption of biodiverse foods must improve, which then can be used to improve related programmes and policies.

The FAO/INFOODS Food Composition Database for Biodiversity was developed with the following objectives:

1. To publish a compendium of scrutinized analytical data (without any additional estimations, imputation or calculation of missing values) for foods counting for biodiversity: at least one compositional value must be reported at variety/cultivar/breed level for common foods or at species level (or with local name) for wild and underutilized foods;

2. To allow food composition database compilers to include nutritional values for wild and underutilized foods as well as for foods below species level based on the data available in this database;

3. To allow researchers in nutrition to estimate the contribution of biodiversity to nutrition;

4. To estimate nutrient intake estimations more correctly taking variation due to biodiversity into account (if corresponding food consumption data would be available);

5. To promote biodiversity and foods with a superior nutritional profile in nutrition education programmes and other policies; and

6. To allow researchers in agriculture to select those crops/breeds with a high-quality nutritional profile for agricultural research and large-scale production.

Producing this indicator nationally...

The database is constructed in a way that it can be used easily. However, those using it would need to have a basic understanding of food composition, which can be acquired through the FAO/INFOODS e-Learning Course on Food Composition Data (*http://www.fao.org/infoods/infoods/training/en/*) and through studying the FAO/INFOODS guidelines on food composition at *http://www.fao.org/infoods/infoods/standards-guidelines/en/*. The database represents a collection of food composition data from analysis without any estimations or calculation, thus there are many missing values, especially vitamins and often minerals are missing.

Use at the national level...

Our database (*http://www.fao.org/infoods/infoods/tables-and-databases/faoinfoods-databases/en/*) was used to construct the Bangladesh food composition table of 2013 and the West African Food Composition table of 2012. The database was also used in making members of the Commission on genetic resources for food and agriculture (CGRFA) aware of the importance of biodiversity for nutrition through agriculture, leading to the endorsement of the 'Voluntary Guidelines for Mainstreaming Biodiversity into Policies, Programmes and National and Regional Plans of Action on Nutrition' in 2015.

Future developments...

Update the database regularly with more data and on more foods, depending on availability of funds.

Further resources

Biodiversity Indicators Partnership website
http://www.bipindicators.net/nutritionindicators

International Network of Food Data Systems (INFOODS)
http://www.fao.org/infoods/infoods/food-biodiversity/en/

Food and Agriculture Organization of the United Nations

Bioversity International

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OCEAN HEALTH INDEX

Aichi Biodiversity Targets	Indicator type	Availability	Sampling dates	Disaggregation Available	Access
14 1 4 5 6 7 10 12 15	S		2012-2013	Regional National	

What is the Ocean Health Index?

The Ocean Health Index (OHI) indicator measures the current status and likely future state of ten public goals for marine ecosystems. For each goal the index assesses the current state relative to a reference point, recent trends in the current status, cumulative negative pressures on the goal, and existing ecological and social attributes and institutions that provide resilience.

The Index enables scientists, managers, policy makers, and the public to better and more holistically understand, track, and communicate the status of local marine ecosystems, and to design strategic management actions to improve overall ocean health. By balancing information across the ten goals, the OHI integrates the social and environmental linkages that can be useful to inform decision-making. It can also serve as a baseline reference against which to measure progress.

The OHI framework can be used by anyone to conduct independent assessments at any spatial scale. To facilitate this, we provide freely-available instruction and a 'Toolbox' to organize data and calculate scores. In the spirit of collaborative, transparent, and reproducible science, the OHI Toolbox was developed with open-source tools: for example, all files are organized and shared with GitHub and calculations are done in R.

Producing this indicator nationally...

The OHI is the first integrated assessment framework that scientifically combines key ecological, economic, and social elements of the ocean's health. These scores are calculated using the best available data and indicators at the appropriate scale. By combining ten widely held goals, scores reflect how well coastal regions optimize their potential ocean benefits and services in a sustainable way relative to a reference point (target), on a scale of 0 to 100. Independent assessments can be done at any spatial scale and allow for exploration of variables influencing ocean health at the scale at which policy and management decisions are made. Regional assessments also enable goal models and targets to be adapted to higher resolution data, indicators, and priorities to produce scores that better reflect local realities. To facilitate the independent assessment process, we developed a series of guides (*http://www.oceanhealthindex.org/ohi-plus/*) and the *Ocean Health Index Toolbox and Manual*, (*http://ohi-science.org/manual/*) which help users develop models adapted to management needs and synthesize data and indicators from multiple disciplines into a single framework.

Use at the national level...

As part of the Toolbox we have developed interactive displays to visualize data and scores. There is a website for nearly every coastal nation populated with data from the global assessment, making it possible to explore data used in the global assessment. However, the primary utility of these website is for nations conducting their own OHI assessments; this is a place where groups can visualize how their own local data fit into the OHI framework and what calculated scores look like on an interactive map. For example, see the website for Spain: *http://ohi-science.org/esp*

Further information, guides, and media resources for conducting an OHI assessment can be found at:
http://www.oceanhealthindex.org/ohi-plus/
http://ohi-science.org/
https://vimeo.com/oceanhealthindex

Other examples include:

Brazil: The National Center for Ecological Assessment and Synthesis (NCEAS) and Conservation International developed and published and assessment case study for Brazil's 17 coastal states (*http://www.oceanhealthindex.org/ohi-plus/brazil_assessment_english; http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0092589*)

U.S. West Coast: The National Center for Ecological Assessment and Synthesis (NCEAS) and Conservation International developed and published an assessment for California (divided into three regions), Oregon, and Washington *(http://www.oceanhealthindex.org/ohi-plus/us_westcoast_assessment; http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0098995*)

Fiji: The National Center for Ecological Assessment and Synthesis (NCEAS) and Conservation International developed and published an assessment for the whole country (*http://www.oceanhealthindex.org/ohi-plus/fiji_assessment; http://jenniferoleary.weebly.com/uploads/6/7/0/2/6702754/seligetal2015_ecosystemservices.pdf*)

Future developments...

We continue to calculate global scores annually, launching results each September. We hope to continue doing this indefinitely. We also are leading or supporting regional applications of the Ocean Health Index in countries and regions around the world, and offer this support to other regions upon request. The 'Toolbox' and supporting materials continue to be refined and improved.

Further resources

Biodiversity Indicators Partnership website
http://www.bipindicators.net/oceanhealthindex

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INDEX OF LINGUISTIC DIVERSITY

Aichi Biodiversity Target	Indicator type	Availability	Sampling dates	Disaggregation Available	Access
18	S		1970-2010	Regional National	

What is the Index of Linguistic Diversity?

Traditional environmental knowledge is expressed and transmitted largely through language. If a language is in decline that generally means that the knowledge it conveys is also in decline. The downward trend in the level of linguistic diversity and in particular indigenous languages, therefore suggests that the traditional knowledge, innovations and practices of indigenous and local communities are also declining, with detrimental consequences for the conservation and sustainable use of biodiversity.

Current data in the Index of Linguistic Diversity (ILD) database could be used to provide a first-cut picture of national linguistic diversity. If finer-grained data from the national level (e.g., dialect censuses) is available, it could be fed into the ILD methodology to provide a much more detailed picture of national linguistic diversity.

Producing this indicator nationally...

The ILD depends on estimates of speaker numbers, which are known to vary widely in quality. The ILD uses data-filtering techniques to try to eliminate those data points that are most likely to be anomalous. The reliability of speaker numbers is something that has to be accounted for at all levels, from global on down.

The ILD can be applied nationally and regionally. No change in methodology is needed, just the relevant data.

Use at the national level...

The report *Loh, J. and Harmon, D. 2014. Biocultural Diversity: Threatened species, endangered languages. WWF Netherlands* has the latest updates for global and regional indices, as well as Australia and New Guinea indices. The report may be downloaded from *http://biocultural.org.uk/ or http://wwf.panda.org/wwf_news/press_releases/?222890/Biocultural-Diversity-Threatened-Species-Endangered-Languages*

Future developments...

Pending funding, we plan an update to the published global ILD.

Further resources

Biodiversity Indicators Partnership website
http://www.bipindicators.net/ild

Terralingua

World Wide Fund for Nature

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STATUS AND TRENDS OF LINGUISTIC DIVERSITY AND NUMBERS OF SPEAKERS OF INDIGENOUS LANGUAGES

Aichi Biodiversity Target	Indicator type	Availability	Sampling dates	Disaggregation Available	Access
18	S		2008-2011	Regional National	

What is the Status and trends of linguistic diversity and numbers of speakers of indigenous languages indicator?

Language loss is often correlated with the loss of the traditional knowledge, innovations and practices that have maintained biodiversity. Moreover, environmental knowledge is embedded in indigenous names, oral traditions and taxonomies that can be lost when a community shifts to another language. The Status and trends of linguistic diversity and numbers of speakers of indigenous languages indicator therefore provides insight into the status of traditional environmental knowledge transmission.

Producing this indicator nationally...

For more information about the potential use of this indicator at the national level contact Anahit Minasyan and Serena Heckler at UNESCO (a.minasyan@unesco.org; s.heckler@unesco.org).

Use at the national level...

Indigenous languages are vehicles of traditional knowledge about biodiversity and environment, and sustainable management of natural resources. An increase in the number of extinct languages would represent an irrecoverable loss of biodiversity-related knowledge which in turn may have negative implications for its maintenance and protection. Increases in the number of threatened languages (vulnerable, endangered and critically endangered) would indicate greater pressures upon languages which may lead to their extinction. A decline in the number of threatened languages would indicate strengthened language preservation which will contribute to the safeguarding of biodiversity knowledge.

Future developments...

Further development of consistent and homogenous language data collection methodologies at the global scale will permit the international comparison of language data, which will facilitate the task of constructing an indicator on numbers of speakers of indigenous languages at the global scale.

UNESCO will continue data collection and analyses in the coming years with a view to elaborating, testing and promoting at the international and national level a Linguistic Vitality Index. It is essential to advocate for a harmonization of language data collection methodologies across the world in order to constitute a usable global dataset and time-series on indigenous languages.

Further resources

Biodiversity Indicators Partnership website
http://www.bipindicators.net/linguisticdiversity

UNESCO

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NUMBER OF GLOBAL BIODIVERSITY INFORMATION FACILITY (GBIF) RECORDS OVER TIME

Aichi Biodiversity Targets	Indicator type	Availability	Sampling dates	Disaggregation Available	Access
			2003-2015	Regional National	

What is the Number of Global Biodiversity Information Facility (GBIF) records over time indicator?

Each country needs access to information to identify threats to biodiversity and determine priorities for conservation and sustainable use. While nearly all Parties report that they are taking actions related to monitoring and research, most also indicate that the absence or difficulty in accessing scientific information is an obstacle to the implementation of the goals of the Convention. Action taken to reach this target will also benefit the other targets of the Strategic Plan by encouraging new research, the development of new technologies and improved monitoring. Such actions will strengthen the policy-science interface and will contribute to the fulfilment of the other elements of the Strategic Plan.

The data published through the Global Biodiversity Information Facility (GBIF) includes species occurrence data from digitized natural history specimen collections, observations from citizen science networks, surveys and research projects, historic literature and a range of other sources. GBIF also deals with names and taxonomic checklists, as well as structured metadata describing biodiversity datasets.

Producing this indicator nationally...

Free and open access to all available data on biodiversity is an essential component of a country's ability to develop evidence-based biodiversity strategies, and to address the goals of the Strategic Plan on Biodiversity 2011-2020. National level metrics on mobilization of data through GBIF indicate the extent to which data from different sources within a country are being mobilized and shared using standard digital formats, and are discoverable through global or national web platforms for use in research and policy. Use of this indicator, supplemented by the additional metrics provided through *www.gbif.org/analytics*, can help countries to monitor national progress towards Target 19, and by identifying gaps and biases can help to inform national strategies on further data mobilization.

Use at the national level...

Mobilization of data records through GBIF at national level is used by many national GBIF nodes to indicate progress on availability of biodiversity information for national research and policy.

Future developments...

One significant development is that by October 2015, GBIF will provide summary pdf reports for all countries providing a range of metrics relating to data mobilization and use, to be updated twice a year and generated automatically via the country pages on *GBIF.org* (or upon request).

Further resources

Biodiversity Indicators Partnership website
http://www.bipindicators.net/numberofgbifrecordsovertime

Convention on Biological Diversity website
http://www.cbd.int/sp/targets/rationale/target-19/

GBIF
Global Biodiversity Information Facility

OFFICIAL DEVELOPMENT ASSISTANCE PROVIDED IN SUPPORT OF THE CONVENTION

Aichi Biodiversity Target	Indicator type	Availability	Sampling dates	Disaggregation Available	Access
20	R	PDF	2007-2013*	Regional National**	

* Data is also available for the period 2002-2006; however, reporting only became mandatory in 2007, therefore data collected before this date may not be complete.

** The OECD Development Assistance Committee collects data at activity level through its Creditor Reporting System and the "biodiversity" Rio marker is also applicable at the level of each activity. This allows the production of aggregates of "ODA in support of biodiversity" per provider country, partner country, region, as well as by sector, by type of finance instruments, etc.

What is the Official Development Assistance provided in support of the Convention indicator?

Adequate access to resources is essential for effective implementation of the Convention on Biological Diversity (CBD). Developed countries that have ratified the CBD have committed themselves through Target 11.2 of the CBD to transfer new and additional financial resources to developing country Parties, to allow for effective implementation of their commitments under the Convention. The Official Development Assistance (ODA) indicator monitors bilateral biodiversity development finance commitments targeting objectives of the CBD through the use of "Rio markers".

OECD DAC data is collected through an institutionalised structure that maintains and develops underlying standards (e.g. definitions and classifications), creates a common understanding of their application, and undergoes rigorous quality control, making it a high quality, standardised data source for the development of indicators. Activity-level data is collected and can be aggregated by provider country (the 29 DAC members) and by partner country, making it appropriate for producing national level indicators. There are over 50 fields of descriptive information, including on sectors and sub-sectors, making it possible to create more detailed indicators of interest.

It should be borne in mind that this data does not capture multilateral development finance flows to biodiversity, therefore it only provides a partial picture of biodiversity-related development finance. Furthermore, it is recommended to consider general trends using multi-year averages, as year-on-year fluctuations can arise from large multi-year projects programmed and committed in a given year.

These data are taken from the OECD DAC Creditor Reporting System using the "Rio markers". The Rio markers are descriptive rather than strictly quantitative. They allow for an approximate quantification of financial flows targeting the objectives of the Rio Conventions (biodiversity, climate change, and desertification). Biodiversity finance as reported by Parties to the CBD is often based on, but may not be directly comparable to, Rio marker data.

Producing this indicator nationally...

The ODA indicator provides a global picture of bilateral biodiversity-related development finance commitments. National use of the indicator is limited to the 29 DAC members which report development finance data through the OECD DAC Creditor Reporting System (CRS). ODA recipient countries could also use the data to track biodiversity-related development finance committed to their country each year.

- Summary statistics are periodically produced by the OECD – for the latest see OECD DAC Statistics, Biodiversity-related development finance (2015).

- Headline statistics can be viewed online through the data visualisation portal
- Activity-level data can be accessed through the OECD DAC CRS

Use at the national level...

CRS data on biodiversity-related development finance is used to produce regional analyses, see for example this analysis by CBD: *http://www.cbd.int/doc/meetings/cop/cop-09/information/cop-09-inf-05-en.pdf*. The OECD Secretariat has done regional analysis of climate-related ODA flows (see links below); the same could be done for biodiversity.

- Climate-related Aid to Africa *http://www.oecd.org/dac/environment-development/Climate-related%20aid%20to%20Africa%20Flyer_FINAL_CLEARED%20(2).pdf*
- Climate-related Aid to Latin America and the Caribbean *http://www.oecd.org/dac/environment-development/Latin%20America_FINAL.pdf*

A range of resources are available for users of the data:

- Rio markers handbook *http://www.oecd.org/dac/stats/48785310.pdf*
- User guide *http://www.oecd.org/dac/stats/User%20guide%20for%20extracting%20environmental%20data_v3.pdf*
- Frequently asked questions *http://www.oecd.org/dac/stats/46818511.pdf*
- Materials from the training workshop *http://www.oecd.org/dac/environment-development/training-workshop.htm*

A data visualisation portal is now available to view biodiversity-related ODA. The data gives a global overview of biodiversity-related ODA flows and can also be filtered by individual donor country and individual recipient country. The OECD DAC Secretariat also produces routine flyers on trends in biodiversity-related ODA. See the following website for these resources: *http://www.oecd.org/dac/stats/biodiversity.htm*

Future developments...

The OECD DAC with its members and the international community is working to "fine tune" the biodiversity Rio marker definition and improve the coverage of biodiversity-related development finance data captured within DAC statistics, in particular for other official flows and multilateral flows. At present, most multilateral institutions do not yet report on biodiversity-related finance flows in the CRS, but the DAC is working with the multilateral development banks to integrate their data on biodiversity into the CRS, when they have developed and implemented their methodology for tracking biodiversity finance.

Further resources

Biodiversity Indicators Partnership website
http://www.bipindicators.net/oda

OECD websites
http://oe.cd/RioMarkers
http://www.oecd.org/dac/stats/biodiversity.htm

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Co-operation and Development

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