REGIONAL WORKSHOP ON THE INTEGRATION OF BIG DATA AND GEOSPATIAL INFORMATION FOR THE COMPILATION OF SDG INDICATORS IN ARAB COUNTRIES

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Who are we?

- We are a global authority on biodiversity data and information

- Based in Cambridge, UK, UNEP-WCMC is a collaboration between UN Environment and a UK non-profit organization WCMC.

- We were established 40 years ago with the aim to be a world leader in biodiversity knowledge. We work with a global network of partners to place biodiversity at the heart of decision making.

- Over 100 experts from more than 30 countries, covering biodiversity and ecosystem services of marine, freshwater and terrestrial environments, along with social scientists, ecological modellers, economists, lawyers, GIS experts, data managers and thematic experts.
International Union for Conservation of Nature

Who are we?

- A Membership Union uniquely composed of both government and civil society organisations, providing public, private and non-governmental organisations with the knowledge and tools that enable human progress, economic development and nature conservation to take place together

- Established in 1948, and based in Gland, Switzerland, with offices in ~50 countries

- Members encompass more than 200 states and government agencies, and more than 1,100 non-governmental and indigenous peoples’ organisations

- Convenes independent Commissions encompassing more than 15,000 specialists in: Education & Communication; Ecosystem Management; Environmental, Economic & Social Policy; Species Survival; Environmental Law; and Protected Areas
UNEP-WCMC and IUCN are official co-custodians of two indicators relating to SDG 15, in collaboration with BirdLife International

Target 15.1: By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements – indicator 15.1.2

Target 15.4: By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development – indicator 15.4.1
A synthesis of SDG indicator calculation

How does it happen?

- UNEP-WCMC prepare the WDPA
- BirdLife International run most of the geoprocessing
- IUCN, UNEP-WCMC and BirdLife International write indicator narratives, prepare data and submit to UNSD

When does it happen?

- **November**: UNSD sends out call to indicator custodians
- **December**: indicator custodians prepare data
- **January**: analysis and data summation
- **February**: write indicator narratives and submit indicators

What is submitted?

- Indicator data by country, region, globally
- Indicator narrative (~200 words & graph)
Metadata for the indicators are available online:
https://unstats.un.org/sdgs/metadata/?Text=&Goal=&Target=15.1

SDG Indicators have a standardised metadata template – editable once a year.
The metadata covers: Institutional information; Concepts and definitions; Methodology; Data sources; Data availability; Calendar; Data providers; Data compilers; References

Methodology for 15.1.2

Temporal trends in the mean percentage of each important site for terrestrial and freshwater biodiversity (i.e., those that contribute significantly to the global persistence of biodiversity) that is covered by designated protected areas.
A depiction of the indicator

- Reported at an annual resolution (from 2000).
- Reported at country, regional and global spatial scales.
- Also provided through [https://conservation.ibat-alliance.org/nbsap/display/intro](https://conservation.ibat-alliance.org/nbsap/display/intro)

![Graph showing gradual increase in area covered by protected areas](image-url)

Shows gradual increase in area covered by protected areas.
IPBES Global Assessment Summary for Policy-Makers

- Available at https://www.ipbes.net/event/ipbes-7-plenary
The World Database on Protected Areas
The World Database on Protected Areas

- Joint product between the UN Environment and the International Union of Nature Conservation, and is managed by UN Environment World Conservation Monitoring Centre

- To provide authoritative and up-to-date information about protected areas and to support protected area decision-making

- To support countries in their provision of coverage statistics towards reaching Convention on Biological Diversity Target 11 of securing by 2020, at least 17 per cent of terrestrial and inland water areas and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services
The World Database on Protected Areas

- Currently storing over 260,000 protected areas from more than 243 countries and territories
- Approximately 8% of sites as point records

Protected Areas of the world


Terrestrial protected areas | Marine and coastal protected areas | OECMs
UN Environment – World Conservation Monitoring Centre & International Union for Conservation of Nature (IUCN)

- Protected Planet

Centralized portal for accessing key information on protected areas

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Discover the world’s protected areas

Protected Planet is the most up to date and complete source of data on protected areas and other effective area-based conservation measures (OECMs), updated monthly with submissions from governments, non-governmental organizations, landowners and communities.

9.6%
Global coverage of protected areas and OECMs

Explore Protected Areas
The World Database on Protected Areas

- Over 500 different data providers, for national, regional, and international data

- Used to report to different international supporting mechanisms
  - UN List of Protected Areas
  - Sustainable Development Goals
  - CBD Global Biodiversity Outlook
  - UNEP Global Environment Outlook
  - Global Reporting Initiative

- And online systems
  - Google Earth Engine
  - Global Fishing Watch
  - EEA’ DOPA
The World Database of Key Biodiversity Areas
The World Database of Key Biodiversity Areas

Key Biodiversity Areas (KBA) are 'sites contributing significantly to the global persistence of biodiversity’, in terrestrial, freshwater and marine ecosystems.

Led by the KBA Partnership, a unique collaboration of 13 organisations KBAs partnership has three main goals:
1. identify, map and document thousands of Key Biodiversity Areas worldwide;
2. promote targeted conservation action in Key Biodiversity Areas; and
3. inform and influence public policy and private sector decision-making.
On average, less than half of the area of each KBA is covered by protected areas.
The World Database of Key Biodiversity Areas: data flows
The World Database of Key Biodiversity Areas

- Used to report to different international supporting mechanisms
  - Sustainable Development Goals
  - CBD Global Biodiversity Outlook
  - IPBES Assessments
  - Global Reporting Initiative
  - IFC Performance Standards

- And online systems
  - CEPF Ecosystem Profiles
  - Global Forest Watch
  - EEA’ DOPA
Challenges

There are three main challenges associated with maintenance, analysis and inference of these indicators.
1. Increasing size (and complexity) of the data

- Net increase in number over the period 2013 – 2018 with 40,000 new sites added
Accommodating more information

- Started very simple, with compiling only a few information for each site
- OECMS may increase the complexity further
Many “missing” sites for both PAs/OECMs and KBAs

- Many PAs not yet documented, especially for private PAs, indigenous and community conserved areas, and mixed governance types
- Documentation of OECMs not yet begun
- KBA identification is comprehensive for birds, but only broadly covers other species groups for ~100 countries so far
- Some KBA criteria not yet also comprehensively applied
- Importance of establishment of National Coordination Groups to advance consolidation of KBA data
2. They do not measure effectiveness of protection

- The Global Database on Protected Area Management Effectiveness

### Protected Area Management Effectiveness

- ‘The assessment of how well protected areas are being managed – primarily the extent to which management is protecting values and achieving goals and objectives’ (Hockings et al. 2006)

- Despite growth in PA coverage, biodiversity continues to decline, even in some PAs. Effectiveness and level on management has been linked to underperformance of PA.

- PA well-managed best conserve biodiversity
2. They do not measure effectiveness of protection

- The Global Database on Protected Area Management Effectiveness

- Joint product between the UN Environment and the International Union of Nature Conservation, and is managed by UN Environment World Conservation Monitoring Centre

- To provide authoritative and up-to-date information about protected area management effectiveness and to support protected area decision-making

- To start assessing the ‘effectively managed’ of Aichi Target 11:

  By 2020, at least 17 per cent of terrestrial and inland water areas and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes
3. Computing capacity to process the global data

- Some file formats are no longer usable (e.g. .shp)
- Increasingly only some software can handle the processes (e.g. ArcGIS pro)
- Only some computers with good specs (>30gb RAM)
- Processing at country level is still OK!
Solutions: Importance of data standards and quality checking processes

- **Four requirements to meet the WDPA data standards**
  1. All sites must meet the IUCN definition of a PA
  2. Spatial data from GIS and an associated list of attributes must be provided
  3. Source of information must be provided
  4. The WDPA DCA must be signed

- **Clear WDPA schema and data standards**
  - Interoperability
  - Consistency
  - Common format usable by all
  - Importance of the WDPA ID as unique identifier
For more information

- IUCN-ROWA Programme 2020-2025 Results and Action plan for Biodiversity, Protected Areas & World Heritage Programme. 35 pp. https://www.iucn.org/sites/dev/files/content/documents/situation_analysis_0.pdf


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