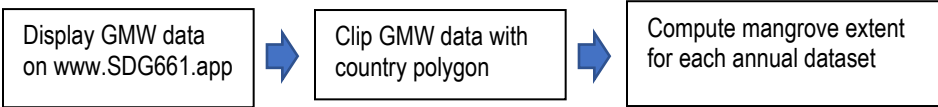


Country Use Case of EO Use for SDG Indicator	
SDG Indicator/Sub-indicator	6.6.1 Change in the extent of water-related ecosystems over time
Country or region	Global, regional, national and local
Status (please check)	<input checked="" type="checkbox"/> Being used in official SDG Indicator reporting <input type="checkbox"/> Being verified or tested by country <input type="checkbox"/> Studying feasibility
Earth Observation Data Used and its links	<p>Global Mangrove Watch www: www.globalmangrovetwatch.org www.eorc.jaxa.jp/ALOS/en/kyoto/mangrovetwatch.htm</p> <p>Data access - Vector format (.shp) UNEP-WCMC: https://data.unep-wcmc.org/datasets/45</p> <p>Data access – Raster format (GeoTIF): Japan Aerospace Exploration Agency (JAXA), Earth Observation Research Center (EORC): URL TBC</p> <p>Online viewing: World Forest Watch www: https://www.globalforestwatch.org/ (select “Mangrove forest” layer under “Land Cover” tab)</p>
Additional/ Other Data Used and its links	N/A
Description of data access, processing, and analysis, including methodology that was developed, associated tools or applications, and how these are applied to compute SDG Indicator	<p>The GMW data set shows the global extent of mangroves for 7 annual epochs in the period 1996 – 2016. Annual updates are planned, with maps for 2017, 2018 & 2019 to be completed in 2020/2021.</p> <p>The GMW mangrove maps were derived in two steps:</p> <ol style="list-style-type: none"> (1) Generation of a Baseline Map of global mangrove extent for the year 2010, using a combination of Synthetic Aperture Radar (ALOS PALSAR), and optical (Landsat 5 and 7) satellite data. Random Forest Classification was confined using a mangrove habitat mask, which defined regions where mangrove ecosystems can be expected to exist, generated from historical mangrove maps (Giri et al., 2010; Spalding et al., 2010), water occurrence maps (Pekel et al, 2017), and Digital Elevation Model data (SRTM-30). (2) Detection of changes (both gains and losses) between the 2010 Baseline and each of the other six annual epochs, respectively, using SAR (JERS-1 SAR, ALOS PALSAR, ALOS-2 PALSAR-2). The change pixels for each epoch in question were then added or removed from the 2010 Baseline to produce the new yearly extent maps. <p>The GMW dataset was selected in 2019 by UNEP (as SDG6.6.1 co-custodian) to be used as official mangrove dataset for country reporting on Indicator 6.6.1.</p>

	<p>With public release foreseen in March 2020, UNEP is hosting the GMW datasets on a dedicated server established for SDG661 reporting: www.SDG661.app</p> <p>The site provides free and open access tools for calculation SDG6.6.1 components at national or sub-national basis.</p> <p>The components of SDG indicator 6.6.1 that will be covered by the site (which for mangroves include spatial extent and changes) will be shared with countries before being submitted to the UN SDGs database, maintained by the UN Statistics Division. This will need to be augmented by countries' <i>in situ</i> monitoring and nationally reported data.</p>
Work flow	<p><i>Foreseen work flow using the www.SDG661.app</i></p>  <pre> graph LR A[Display GMW data on www.SDG661.app] --> B[Clip GMW data with country polygon] B --> C[Compute mangrove extent for each annual dataset] </pre>
Lessons learned, any gaps, key issues and recommendations	<p>It should be noted that the Global Mangrove Watch data is a global-scale dataset, generated with a single methodology applied over all regions, and as such, the accuracy of the map may vary between locations.</p> <p>This example nonetheless demonstrates how also a global dataset can play an important role for SDG reporting, in particular for countries with limited geospatial information about the location and status of their mangroves.</p> <p>All GMW maps, satellite- and ancillary data are available in the public domain to allow countries to reproduce or improve mangrove classification.</p>
Supporting material about this use case. Include links, publications, etc.	<p>Bunting P., Rosenqvist A., Lucas R., Rebelo L-M., Hilarides L., Thomas N., Hardy A., Itoh T., Shimada M. and Finlayson C.M. (2018). <i>The Global Mangrove Watch – a New 2010 Global Baseline of Mangrove Extent</i>. Remote Sensing 10(10): 1669. doi: 10.3390/rs1010669</p>
Name(s) and email address of individual(s) involved in this effort. Please note the principal point(s) of contact (POCs).	<p>The Global Mangrove Watch (GMW) is an international initiative led by the Japan Aerospace Exploration Agency (JAXA), Aberystwyth University (U.K.) and solo Earth Observation (soloEO) in collaboration with Wetlands International, DOB Ecology and the International Water Management Institute (IWMI). It was established in 2011 within the framework of JAXA's Kyoto & Carbon Initiative science programme.</p> <p>The GMW also contributes to the the GEO-Wetlands Initiative.</p> <p>Contacts: Ake Rosenqvist, JAXA/soloEO (project coord.) – ake.rosenqvist@soloEO.com Pete Bunting, Aberystwyth Uni (technical lead) – pfb@aber.ac.uk Richard Lucas, Aberystwyth Uni (science lead) – rml2@aber.ac.uk</p>