U.S. GROUP ON EARTH OBSERVATIONS ASSESSMENT

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UNITED STATES GROUP ON EARTH OBSERVATIONS

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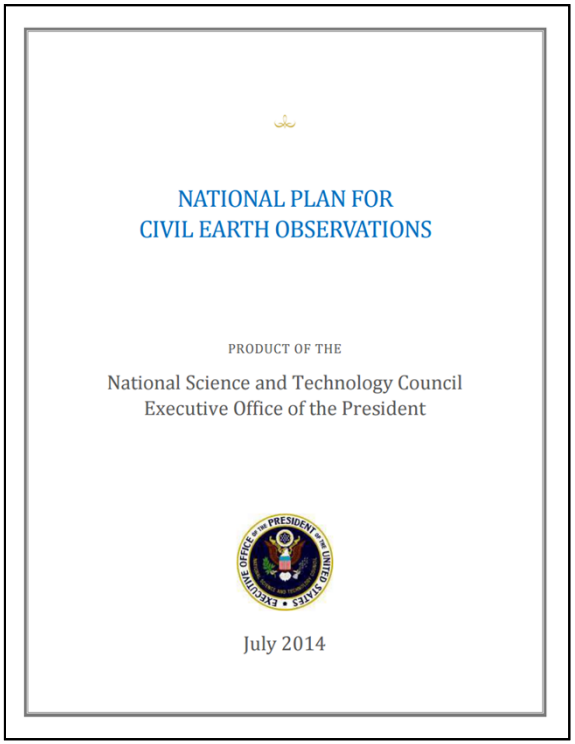
USGEO ASSESSMENT WORKING GROUP (AWG)

- In response to Congressional request (2010 NASA Authorization Act), OSTP has implemented an assessment-based planning framework
- The USGEO Assessment Working Group (AWG) oversees and executes an internal, deliberative, Executive Branch assessment of Earth observing systems every three years as described in the USGEO Charter and the National Strategy for Earth Observations
- The AWG synthesizes the recommendations of expert teams to make general recommendations, for internal deliberative Executive Branch use, concerning the continuity, fulfillment, and advancement of required measurements over a 10-year planning period
- This synthesis provides input to the development of a National Plan for Civil Earth Observations



THE FIRST NATIONAL EARTH OBSERVATION ASSESSMENT (EOA 2012)

- OSTP and CENRS subcommittees identified team leads for thirteen Societal Benefit Areas (SBAs) and recruited over 300 Federal Subject Matter Experts (SMEs) to participate in elicitation workshops to weigh the impact of observing systems to key objectives in each SBA
- The Assessment:
  - Identified a snapshot of the portfolio of observing systems relied upon by Federal agencies to meet key Earth Observing objectives
  - Provided a cross-cutting and integrated look at observing capabilities (satellite and non-satellite systems)
  - Quantified the impact of those observing systems in delivering societal benefit
- Resulted in the Assessment report, which Identified 362 observing systems and surveys, of which 145 were designated as "high impact"
  - Results provided in Annex to the 2014 National Plan

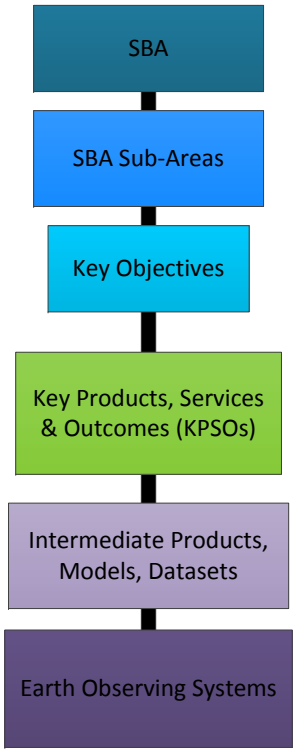
THE SECOND NATIONAL EARTH OBSERVATION ASSESSMENT (EOA 2016)

- Leverages the methodology from the first Assessment
- Incorporates "lessons learned" from the first Assessment and subsequent use of this methodology at NOAA and USGS
- Subareas and key objectives are structured in a standardized manner
- Improved agency representation and engagement to ensure broad coverage
- More even representation of "research" throughout SBAs
  - How observations support the generation of fundamental knowledge
  - How observations support the development of new tools and techniques

EOA 2016 VALUE TREE FRAMEWORK

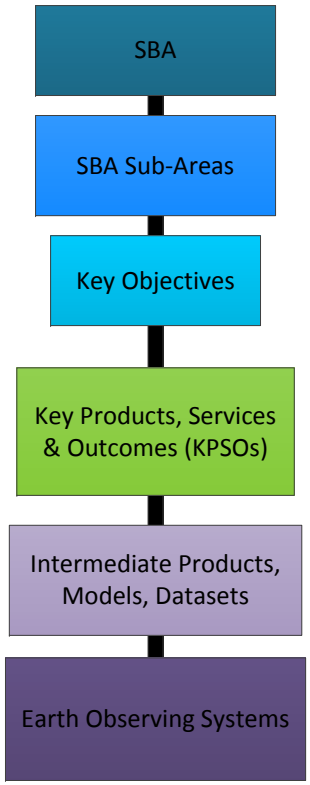
Societal Benefit Areas

- Agriculture & Forestry
- Biodiversity
- Climate
- Disasters
- Ecosystems (Terrestrial & Freshwater)
- Energy & Mineral Resources
- Human Health
- Ocean & Coastal Resources & Ecosystems
- Space Weather
- Transportation
- Water Resources
- Weather
- Reference Measurements



- The societal benefit area (SBA) value tree is a hierarchical framework that establishes the connection from top-level societal benefits to the set of observing systems that contribute to the SBA
  - Intermediate levels provide a logical traceability
- Goal is to make the connection between Earth observations and the value they provide (Societal Benefit delivered)
  - e.g. The National Weather Service is not funded to "measure precipitation and wind speed", they are funded to "provide advance warning of severe weather to save lives."

EOA 2016 VALUE TREE FRAMEWORK (CONT.)



Societal Benefit Area (SBA)

SBA Sub-Areas: The major components of activity within the SBA; natural thematic subdivisions of the parent SBA.

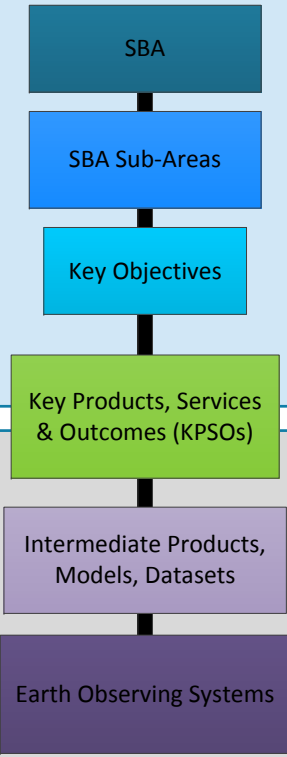
Key Objectives: Activities within a sub-area that are clearly supported by and can be linked to Earth observing systems, data, and information products.

Key Product, Service or Outcome (KPSO): A primary or important product, service, or outcome required to make progress toward or meet a Key Objective. KPSOs are produced by Agencies/organizations within the Federal Government as part of assigned responsibilities.

Intermediate Products, Models, Datasets: The data and information needed to produce KPSOs; generally model output, derived products, ancillary datasets, etc.

** Includes ALL systems relied upon regardless of owner:
U.S. gov't, foreign systems, state and local gov't, private sector, commercial, etc.

EOA 2016 VALUE TREE FRAMEWORK (CONT.)



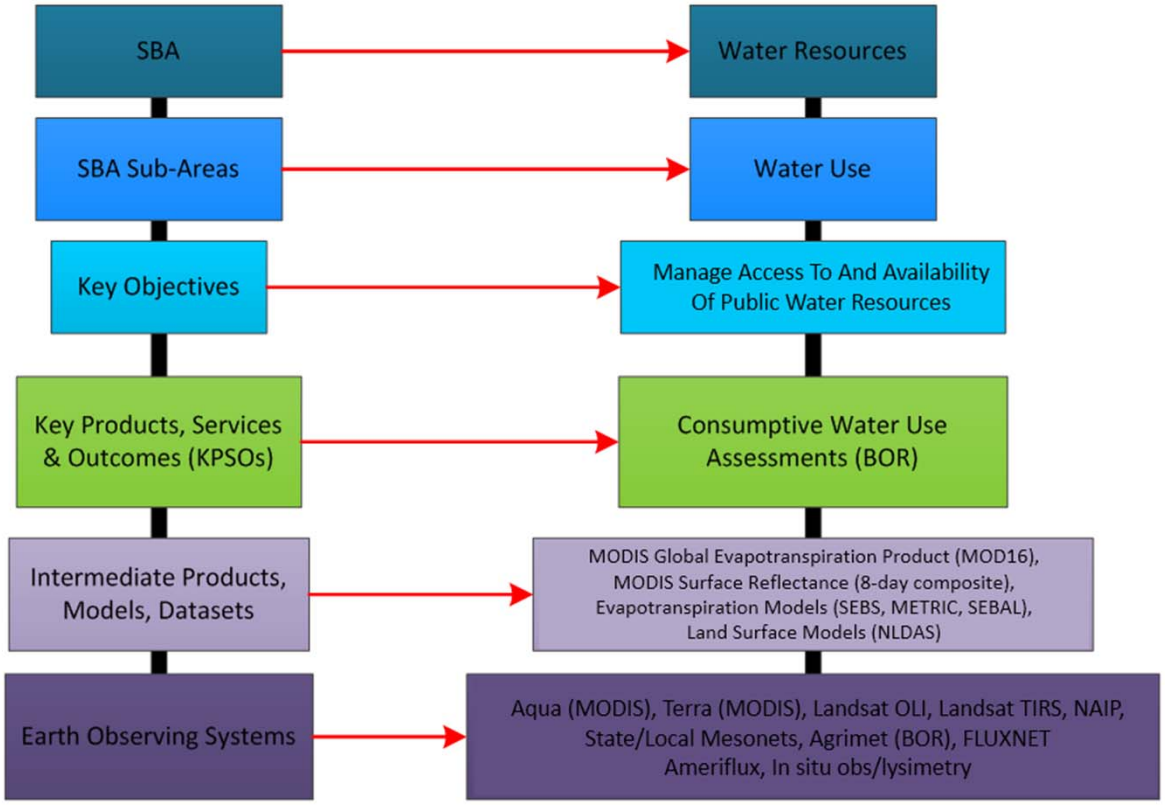
The Top of the Value Tree: Defined by the SBA Teams

- SBA Teams are responsible for defining all the major elements of the value tree through KPSOs
- The SBA Teams will identify the KPSOs relevant to each of their Key Objectives as well as the producing Agency and help to guide Assessment Team engagement and the collection of supporting data

The Bottom of the Value Tree: Data collected from Agencies

- The Assessment Team will engage subject matter experts identified by the SBA Teams to complete the bottom of the value tree
- The teams will identify and evaluate the Earth observation data used to produce the KPSOs

EOA 2016 VALUE TREE EXAMPLE



EOA 2016 DATA COLLECTION & ORGANIZATION

- For each KPSO Subject Matter Experts (SMEs) are be asked to:
  - Identify the list of input data sources that contribute to the delivery of the KPSO, including:
    - Direct observations from observing systems
    - Datasets
    - Intermediate products
    - Model output
  - Evaluate the data sources – two elements:
    - Relative criticality
    - Performance
- SME expert judgments about relative criticality and performance are quantified using a standardized scale
- The SME data are then used to build a structure for each KPSO that map into the SBA value tree as specified by individual SBA Teams

EOA 2016 PROGRESS

- 13 Individual Teams (288 Federal team members)
- Unique Sub-Areas: 46
- Unique Key Objectives: 229
- Unique KPSOs: 1823
- Total unique KPSOs elicited: 933 (51%)
- Total unique KPSO elicitations remaining: 890 (49%)

Image credit: Ian Joughin, University of Washington

THANK YOU!