7.7 DATA SERVICES AND DOWNLOAD SERVICES

Background and key outcomes

Deliverable D7.7 describes the final version of the MIND STEP data and download services (https://mindstep.geo-wiki.org/). In order to deliver and visualize the various geo-spatial results produced by the various MIND STEP modeling teams, MIND STEP has installed a GeoServer instance, connected to a PostgreSQL database in combination with a Content Management System (CMS) for designing the web map content and a User Interface (UI) to provide data services and download services. The entire infrasturucture is open source. This effort will eventually form part of the basis for interacting with stakeholders, the research community and the public via the spatial MIND STEP data. For this version, published GLOBIOM results have been added to the GeoServer for demonstration purposes, along with agricultural in-situ data being collected in real time from the CropObserve mobile app. As additional model datasets are ready they will be ingested. We are also in the process of automating the upload of data to the system. A unique landing page was created with additional information as well as a web map with common features.

User requirements / data exchange

Initial user requirements are taken from the MIND STEP proposal, from the survey and findings reported in D7.5 and the GLOBIOM modelling team at IIASA. At this stage it is assumed that the large scale models (i.e. GLOBIOM) will not necessarily provide spatially explicit results, but could potentially report on a national, regional or NUTS level or similar. Where model results link to spatial polygons, attribute tables with the necessary ID's for linkage will be required, along with the necessary vector files in standard formats. Preferred data exchange would involve .csv for attribute data and shapefiles or similar vector formats. Model specific vector files in standard geospatial formats are acceptable as long as the files are provided. The service also works with raster data in standard formats. Furthermore, the provision of data in the various Open Geospatial Consortium (OGC) standard formats is also easily ingestible (i.e. web feature services). We are currently working on an automated procedure for data upload.

Workflow

Standard means of data exchange will be used to transfer model data for entry into the GeoServer. The appropriate datasets will be added to the GeoServer and if needed (owing to large file size), related attribute data will be added to the related PostgreSQL database. Data styling will occur directly in the GeoServer, adding legends, colour coding etc. The Strapi CMS will then be used to add the necessary layers to the UI. These will then appear in the UI, with standard web mapping options including download capabilities.

Next steps

Based upon the workflow described above, we have established the following url to visualize the spatial MIND STEP model output https://mindstep.geo-wiki.org/. We will be determining the actual load on the GeoServer to determine if the current setup is adequate or if a dedicated server is required. The present UI contains no user authentication; however, this will be reviewed going forward and added if needed. We will also be exploring the linkages between the data and download services described here and the MIND STEP toolbox.