Package: mapspam2globiom (via r-universe)

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Title An R package to create crop distribution maps as input for
GLOBIOM

Version 0.0.1

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Description The aim of the mapspam2globiom R package is to facilitate
the creation of country level crop distribution maps, which can
be used as input by the IIASA's Global Biosphere Management
Model (GLOBIOM) for a selected country. mapspam2globiom
includes several functions to aggregate crop distribution maps
that were created with the mapspamc package (Van Dijk et al.
2022) to the GLOBIOM input format. mapspamc was specifically
developed to create national crop distribution maps using the
Spatial Production Allocation Model (SPAM) (You and Wood 2006;
You, Wood, and Wood-Sichra 2009; You et al. 2014; Yu et al.
2020).

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Encoding UTF-8

LazyData true

Roxygen list(markdown = TRUE)

RoxygenNote 7.3.1

SystemRequirements GAMS

VignetteBuilder knitr

Imports exactextractr, dplyr, sf, terra

Suggests rmarkdown, spelling, gdxrrw

Language en-US

Depends R (>= 2.10)

URL https://github.com/iiasa/mapspam2globiom

BugReports https://github.com/iiasa/mapspam2globiom/issues

Config/pak/sysreqs libgdal-dev gdal-bin libgeos-dev libssl-dev
  libproj-dev libsqlite3-dev libudunits2-dev

Repository https://iiasa.r-universe.dev

RemoteUrl https://github.com/iiasa/mapspam2globiom

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Contents

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create_globiom_input	*Creates GLOBIOM crop distribution and land cover input using output from the* mapspamc *package*

Description

create_globiom_input creates two gdx files. One file updates the global land cover data in GLO-BIOM for the target country, while the other file replaces global land use data. Both files will be saved in the processed_data/results folder created by mapspamc. Note that the area will be expressed in 1000 ha, which is common in GLOBIOM. Before create_globiom_input() can be run, you need to prepare four input files.

First, you need to collect a new country-level land cover map. Any product can be used as long as it contains information on the six GLOBIOM land cover classes. The most obvious choice would be to take a national land cover map for the year 2000 or any other map that is close to the year for which the subnational statistics are available. If such map is not available it is also possible to use a global land cover product and use the country polygon to mask the relevant area.

Second, you need to prepare a mapping between the land cover map and GLOBIOM land use classes. An example mapping is included for the ESACCI land cover files and can be opened by calling esacci2globiom.

Third, you need to prepare a mapping between the mapspamc crop and GLOBIOM crop classes. The standard mapping is and can be opened by calling crop2globiom. In case the user wants to add an additional crop in GLOBIOM (See vignette), the mapping can be changed.

Finally, a polygon file is needed with the location of the GLOBIOM simulation units (simu), which can be clipped from the global GLOBIOM simu shapefile that is stored in mapspamc_db.

Usage

```
create_globiom_input(lc_map, crop_map, lc, simu, grid, param, area_type = "pa")
```

Arguments

`lc_map`	Data.frame with the mapping between country and GLOBIOM land cover codes. The country land cover codes must have column name 'lc_code' and the GLO-BIOM land cover codes must have column name 'globiom_lc_code'. Country land cover codes can correspond to multiple GLOBIOM land cover codes.
`crop_map`	Data.frame with the mapping between mapspamc and GLOBIOM crop codes. The country crop must have column name 'crop' and the GLOBIOM crop codes must have column name 'globiom_crop'. Country crop codes can correspond to multiple GLOBIOM crop codes.
`lc`	National land cover map that is consistent with the mapping data.frame.
`simu`	grid file created by 'mapspamc.
`param`	param Object of type `mapspamc_par` that bundles all `mapspamc` parameters, including core model folders, alpha-3 country code, year, spatial resolution, most detailed level at which subnational statistics are available, administrative unit level at which the model is solved and type of model.
`area_type`	Selection of crop distribution maps produced by `mapspamc`: "pa" (physical area - default) or "ha" (harvested area).

Index