Package: mrlandcore (via r-universe)

August 27, 2024

Type Package

Title One-line description of this awesome package

Version 1.1.4

Date 2024-06-28

Description One-paragraph description of this awesome package.

License LGPL-3

URL https://github.com/pik-piam/mrlandcore

Depends madrat (>= 2.20.9), magclass (>= 3.17), mrdrivers (>= 1.0.0), mrfaocore (>= 1.0.0), mstools (>= 0.6.0), R (>= 2.10.0)

Imports dplyr, lpjclass, lpjmlkit, luscale, magpiesets (>= 0.44.2), ncdf4, nleqslv, raster, SPEI, stringr, terra, withr

Suggests testthat

Encoding UTF-8

RoxygenNote 7.3.2

Repository https://pik-piam.r-universe.dev

RemoteUrl https://github.com/pik-piam/mrlandcore

RemoteRef HEAD

RemoteSha 888e7800d25a563d6a648067e3de10bfa19eb070

Contents

`calcCroparea` *calcCroparea*

Description

Returns harvested areas of individual crops from FAOSTAT. Total harvested areas can be lower or higher than arable land because of multicropping or fallow land. Rice areas are distributed to flooded LUH areas. Additional FAOSTAT rice areas are distributed based on country shares.

Usage

```
calcCroparea(
  sectoral = "kcr",
  physical = TRUE,
  cellular = FALSE,
  cells = "lpjcell",
  irrigation = FALSE
)
```

Arguments

sectoral	"area_harvested" returns croparea aggregated to FAO products, "Production-Item" unaggregated ProdSTAT items, "FoodBalanceItem" Food Balance Sheet categories, "kcr" MAgPIE items, and "lpj" LPJmL items
physical	if TRUE the sum over all crops agrees with the cropland area per country
cellular	if TRUE: calculates cellular MAgPIE crop area for all magpie croptypes. Crop area from LUH2 crop types (c3ann, c4ann, c3per, c4per, cnfx) are mapped to MAgpIE crop types using mappingLUH2cropsToMAgPIEcrops.csv. Harvested areas of FAO weight area within a specific LUH crop type to divide into MAgPIE crop types.
cells	Switch between "magpiecell" (59199) and "lpjcell" (67420)
irrigation	If true: cellular areas are returned separated into irrigated and rainfed (see setup in calcLUH2v2)

Value

areas of individual crops from FAOSTAT and weight

Author(s)

Ulrich Kreidenweis, Kristine Karstens, Felicitas Beier

---

calcCropareaLandInG *calcCropareaLandInG*

Description

This function uses total physical area and crop-specific harvested area data from LandInG to calculate crop-specific physical and harvested areas considering special rules for the allocation of perennial and annual crops.

Usage

```
calcCropareaLandInG(
  sectoral = "kcr",
  physical = TRUE,
  cellular = FALSE,
  cells = "magpiecell",
  irrigation = FALSE,
  selectyears = "all",
  lpjml = c(natveg = "LPJmL4_for_MAgPIE_44ac93de", crop =
    "ggcmi_phase3_nchecks_bft_e511ac58"),
  climatetype = "GSWP3-W5E5:historical"
)
```

Arguments

sectoral	"kcr" MAgPIE items, and "lpj" LPJmL items
physical	if TRUE the sum over all crops plus fallow land (of calcFallowLand) agrees with the physical cropland of readLandInG(subtype = physical)
cellular	if TRUE: calculates cellular crop area for all magpie croptypes. Option FALSE is not (yet) available.
cells	Switch between "magpiecell" (59199) and "lpjcell" (67420)
irrigation	If true: cellular areas are returned separated into irrigated and rainfed
selectyears	extract certain years from the data
lpjml	LPJmL version used to determine multiple cropping suitability
climatetype	Climate scenario or historical baseline "GSWP3-W5E5:historical" used to determine multiple cropping suitability

Value

MAgPIE object with cropareas

Author(s)

David Hoetten, Felicitas Beier

---

calcFallowLand *calcFallowLand*

Description

Calculates fallow land on grid cell level, based on physical cropland extend and harvested area output of LandInG data. The formula "fallow land are = max(physical cropland area - harvested cropland area, 0)" is used. Due to multiple cropping, harvested cropland area can be greater than non-fallow land area and even greater than physical cropland area. Thus, the results can only be considered a rough estimate of fallow land area.

Usage

```
calcFallowLand(cellular = TRUE)
```

Arguments

cellular	TRUE for cellular outputs.

Value

MAgPIE object containing fallow land in Mha

Author(s)

David Hoetten, Felicitas Beier

See Also

readLandInG

Examples

```
## Not run:
calcOutput("FallowLand")

## End(Not run)
```

---

calcForestArea *calcForestArea*

Description

Calculates consistent forest area and its subcategories based on FAO_FRA2015 and LanduseInitialisation data.

Usage

```
calcForestArea(selectyears = "past")
```

Arguments

selectyears	defaults to past

Value

List of magpie object with results on country level, weight, unit and description.

Author(s)

Kristine Karstens, Jan Philipp Dietrich

Examples

```
## Not run:
calcOutput("ForestArea")

## End(Not run)
```

`calcGrassGPP` *calcGrassGPP*

Description

Calculates gross primary production (GPP) of grassland under irrigated and rainfed conditions based on LPJmL inputs.

Usage

```
calcGrassGPP(selectyears, lpjml, climatetype, season)
```

Arguments

`selectyears`	Years to be returned
`lpjml`	LPJmL version required for respective inputs: natveg or crop
`climatetype`	Switch between different climate scenarios or historical baseline "GSWP3-W5E5:historical"
`season`	"wholeYear": grass GPP in the entire year (main + off season) "mainSeason": grass GPPP in the crop-specific growing period of LPJmL (main season)

Value

magpie object in cellular resolution

Author(s)

Felicitas Beier

Examples

```
## Not run:
calcOutput("GrassGPP", aggregate = FALSE)

## End(Not run)
```

`calcGrowingPeriodMonths` *calcGrowingPeriodMonths*

Description

Calculates which gridcell-specific months in which growing conditions are favorable for crop growth based on monthly grass GPP

Usage

```
calcGrowingPeriodMonths(selectyears, lpjml, climatetype, minThreshold = 100)
```

Arguments

selectyears	Years to be returned
lpjml	LPJmL version required for respective inputs: natveg or crop
climatetype	Switch between different climate scenarios or historical baseline "GSWP3-W5E5:historical"
minThreshold	Threshold of monthly grass GPP to be classified as growing period month Unit of the threshold is gC/m^2. Default: 100gC/m^2 Note: the default value is chosen based on LPJmL version 5 to reflect multiple cropping suitability as shown in GAEZ-4. An update of LPJmL5 with regards to grass management may require an adjustment of the threshold.

Value

magpie object in cellular resolution

Author(s)

Felicitas Beier, Jens Heinke

Examples

```
## Not run:
calcOutput("GrowingPeriodMonths", aggregate = FALSE)

## End(Not run)
```

---

calcLanduseInitialisation

calcLanduseInitialisation

Description

Calculates the cellular MAgPIE landuse initialisation area. Data from FAO on forestry is used to split the secondary forest pool of the LU2v2 dataset into forestry and secd_forest.

Usage

```
calcLanduseInitialisation(
  cellular = FALSE,
  nclasses = "seven",
  cells = "lpjcell",
  selectyears = "past",
  input_magpie = FALSE
)
```

Arguments

cellular	cellular (TRUE) or country-level/regional (FALSE) data? For country-level vs regional data: remember to set "aggregate" to FALSE.
nclasses	options are either "six", "seven" or "nine". • "six" includes the original land use classes "crop", "past", "forestry", "forest", "urban" and "other" • "seven" separates primary and secondary forest and includes "crop", "past", "forestry", "primforest", "secdforest", "urban" and "other" • "nine" adds the separation of pasture and rangelands, as well as a differentiation of primary and secondary non-forest vegetation and therefore returns "crop", "past", "range", "forestry", "primforest", "secdforest", "urban", "primother" and "secdother"
cells	if cellular is TRUE: "magpiecell" for 59199 cells or "lpjcell" for 67420 cells
selectyears	default on "past"
input_magpie	applies area fix (set cells with zero area to minimal value to not disturb aggregating to clusters)

Value

List of magpie object with results on country or cellular level, weight on cellular level, unit and description.

Author(s)

Jan Philipp Dietrich, Benjamin Leon Bodirsky, Kristine Karstens, Felcitas Beier, Patrick v. Jeetze

Examples

```
## Not run:
calcOutput("LanduseInitialisation")

## End(Not run)
```

---

calcLanduseInitialisationBase *calcLanduseInitialisationBase*

Description

Calculates the cellular MAgPIE landuse initialisation area. Data from FAO on forestry is used to split the secondary forest pool of the LU2v2 dataset into forestry and secd_forest. This function returns the data set in a basic configuration. Use calcLanduseInitialisation for more settings.

Usage

```
calcLanduseInitialisationBase(cells = "lpjcell", selectyears = "past")
```

Arguments

cells	"magpiecell" for 59199 cells or "lpjcell" for 67420 cells
selectyears	Years to be computed (default on "past")

Value

Cellular landuse initialisation in its base configuration

Author(s)

Jan Philipp Dietrich, Benjamin Leon Bodirsky, Kristine Karstens, Felcitas Beier, Patrick v. Jeetze

Examples

```
## Not run:
calcOutput("LanduseInitialisationBase")

## End(Not run)
```

---

calcLPJmLClimateInput *calcLPJmLClimateInput*

Description

Handle LPJmL climate input data and its time behaviour (smoothing and harmonizing to baseline)

Usage

```
calcLPJmLClimateInput(
  climatetype = "MRI-ESM2-0:ssp370",
  variable = "temperature:annualMean",
  stage = "harmonized2020",
  lpjmlVersion = "LPJmL4_for_MAgPIE_44ac93de"
)
```

Arguments

climatetype	Switch between different climate scenario
variable	Switch between different climate inputs and temporal resolution
stage	Degree of processing: raw, smoothed - raw or smoothed data from 1930|1951 raw1901, smoothed1901 - raw or smoothed data from 1901 harmonized, harmonized2020 - based on toolLPJmLVersion
lpjmlVersion	LPJmL Version hand over

Value

magpie object in cellular resolution

Author(s)

Marcos Alves, Kristine Karstens, Felicitas Beier

Examples

```
## Not run:
calcOutput("LPJmLClimateInput",
           climatetype = "MRI-ESM2-0:ssp370",
           variable = "temperature:annualMean")

## End(Not run)
```

---

calcLPJmL_new *calcLPJmL_new*

Description

Handle LPJmL data and its time behaviour (smoothing and harmonizing to baseline)

Usage

```
calcLPJmL_new(
  version = "LPJmL4_for_MAgPIE_44ac93de",
  climatetype = "MRI-ESM2-0:ssp370",
  subtype = "soilc",
  subdata = NULL,
  stage = "harmonized2020"
)
```

Arguments

version	Switch between LPJmL versions (including addons for further version specification)
climatetype	Switch between different climate scenarios
subtype	Switch between different lpjml input as specified in readLPJmL
subdata	Switch between data dimension subitems
stage	Degree of processing: raw, smoothed - raw or smoothed data from 1930|1951 raw1901, smoothed1901 - raw or smoothed data from 1901 harmonized, harmonized2020 - based on toolLPJmLVersion

Value

List of magpie objects with results on cellular level, weight, unit and description.

Author(s)

Kristine Karstens, Felicitas Beier

See Also

[readLPJmL()]

Examples

```
## Not run:
calcOutput("LPJmL_new", subtype = "soilc", aggregate = FALSE)

## End(Not run)
```

`calcLUH2MAgPIE` *calcLUH2MAgPIE*

Description

Calculates the real aggregation of LUH croptypes to MAgPIE croptypes out of LUH2FAO and FAO2MAgPIE mappings

Usage

```
calcLUH2MAgPIE(
  share = "total",
  bioenergy = "ignore",
  rice = "non_flooded",
  selectyears = "past",
  missing = "ignore"
)
```

Arguments

`share`	total (for total numbers), LUHofMAG (for share of LUH within kcr types), MAGofLUH (for share of kcr within LUH types)
`bioenergy`	"ignore": 0 for share and totals, "fix": fixes betr and begr shares in LUHofMAG to 1 for c3per and c4per
`rice`	rice category: "non_flooded" or "total"
`selectyears`	years to be returned (default: "past")
`missing`	"ignore" will leave data as is, "fill" will add proxy values for data gaps of FAO

Value

List of magpie objects with results on country level, weight on country level, unit and description

Author(s)

Kristine Karstens, Felicitas Beier

Examples

```
## Not run:
calcOutput("LUH2MAgPIE")

## End(Not run)
```

`calcLUH2v2` *calcLUH2v2*

Description

Integrates the LUH2v2 landuse-dataset

Usage

```
calcLUH2v2(
  landuse_types = "magpie",
  irrigation = FALSE,
  cellular = FALSE,
  cells = "lpjcell",
  selectyears = "past"
)
```

Arguments

`landuse_types`	magpie: magpie landuse classes, LUH2v2: original landuse classes flooded: flooded areas as reported by LUH
`irrigation`	if true: areas are returned separated by irrigated and rainfed, if false: total areas
`cellular`	if true: dataset is returned on 0.5 degree resolution
`cells`	Switch between "magpiecell" (59199) and "lpjcell" (67420) NOTE: This setting also affects the sums on country level!
`selectyears`	years to be returned (default: "past")

Value

List of magpie objects with results on country level, weight on country level, unit and description

Author(s)

Benjamin Leon Bodirsky, Florian Humpenoeder, Jens Heinke, Felicitas Beier

See Also

[calcLanduseInitialisation()]

Examples

```
## Not run:
calcOutput("LUH2v2")

## End(Not run)
```

`calcMulticropping` *calcMulticropping*

Description

calculates a multiple cropping factor based on area harvested, physical cropland area (and optionally fallow land).

Usage

```
calcMulticropping(extend_future = FALSE, factortype = "CI")
```

Arguments

`extend_future`	if TRUE
`factortype`	CI: cropping intensity factor calculated as ratio of harvested to physical area where values above one indicate multicropping, below one fallow land (default) MC: multiple cropping factor indicating areas that are harvested more than once in one year calculated taking fallow land into account explicitly: harvestedArea / (physicalArea - fallowLand)

Value

List of magpie objects with results on country level, weight on country level, unit and description.

Author(s)

Benjamin Leon Bodirsky, David Chen, Felicitas Beier

See Also

[calcFAOLand()], [calcCroparea()]

Examples

```
## Not run:
calcOutput("Multicropping")

## End(Not run)
```

calcMulticroppingSuitability

calcMulticroppingSuitability

Description

Calculates which grid cells are potentially suitable for multiple cropping activities under rainfed and irrigated conditions. Calculation is based on the length of the growing period determined by monthly grassland gross primary production (GPP).

Usage

```
calcMulticroppingSuitability(
  selectyears,
  lpjml,
  climatetype,
  suitability = "endogenous",
  sectoral = "kcr"
)
```

Arguments

selectyears	Years to be returned
lpjml	LPJmL version required for respective inputs: natveg or crop
climatetype	Switch between different climate scenarios or historical baseline "GSWP3-W5E5:historical"
suitability	"endogenous": suitability for multiple cropping determined by rules based on grass and crop productivity "exogenous": suitability for multiple cropping given by GAEZ data set
sectoral	"kcr" MAgPIE crops, and "lpj" LPJmL crops

Value

magpie object in cellular resolution

Author(s)

Felicitas Beier, Jens Heinke

Examples

```
## Not run:
calcOutput("MulticroppingSuitability", aggregate = FALSE)

## End(Not run)
```

calcMultipleCroppingZones *calcMultipleCroppingZones*

Description

This function returns multiple cropping zones at 0.5 degree resolution

Usage

```
calcMultipleCroppingZones(layers = 2)
```

Arguments

layers	8 for original GAEZ layers, 3 for aggregated multiple cropping zones with 1 = single cropping, 2 = double cropping, 3 = triple cropping 2 for aggregated boolean multicropping potential with 0 = no multicropping (single cropping), 1 = multiple cropping

Value

magpie object in cellular resolution

Author(s)

Felicitas Beier

Examples

```
## Not run:
calcOutput("MultipleCroppingZones", layers = 3, aggregate = FALSE)

## End(Not run)
```

calcRicearea *calcRicearea*

Description

calculates rice area based on LUH flooded areas and physical rice areas reported by FAOSTAT.

Usage

```
calcRicearea(cellular = FALSE, cells = "lpjcell", share = TRUE)
```

Arguments

cellular	If TRUE: calculates cellular rice area
cells	Switch between "magpiecell" (59199) and "lpjcell" (67420)
share	If TRUE: non-flooded share is returned. If FALSE: rice area (flooded, non-flooded, total) in Mha is returned

Value

rice areas or rice area shares of flooded and non-flooded category

Author(s)

Felicitas Beier, Kristine Karstens

---

convertLPJmL *convertLPJmL*

Description

Convert LPJmL content

Usage

```
convertLPJmL(x)
```

Arguments

x	magpie object provided by the read function

Value

List of magpie objects with results on cellular level, weight, unit and description.

Author(s)

Kristine Karstens

See Also

[readLPJmL()]

Examples

```
## Not run:
readSource("LPJmL", subtype = "soilc", convert = TRUE)

## End(Not run)
```

correctGAEZv4 *correctGAEZv4*

Description

Correct Global Agro-ecological Zones (GAEZ) data

Usage

```
correctGAEZv4(x)
```

Arguments

x	MAgPIE object provided by readGAEZv4 function

Value

MAgPIE object at 0.5 cellular level

Author(s)

Felicitas Beier

Examples

```
## Not run:
readSource("GAEZv4", convert = "onlycorrect")

## End(Not run)
```

correctLandInG *correctLandInG*

Description

correct LandInG data. Convert unit from ha to mio ha

Usage

```
correctLandInG(x)
```

Arguments

x	magpie object provided by the read function

Value

corrected magpie object

Author(s)

David Hoetten, Felicitas Beier

See Also

readLandInG

Examples

```
## Not run:
a <- readSource("LandInG", convert = "onlycorrect")

## End(Not run)
```

`correctLPJmL` *correctLPJmL*

Description

Correct LPJmL content

Usage

```
correctLPJmL(x)
```

Arguments

x	magpie object provided by the read function

Value

List of magpie objects with results on cellular level, weight, unit and description.

Author(s)

Kristine Karstens, Felicitas Beier

See Also

[correctLPJmL()]

Examples

```
## Not run:
readSource("LPJmL", subtype = "soilc", convert = "onlycorrect")

## End(Not run)
```

`correctLPJmLClimateInput` *correctLPJmLClimateInput*

Description

Correct LPJmL climate input variables

Usage

```
correctLPJmLClimateInput(x)
```

Arguments

x	magpie object provided by the read function

Value

Magpie objects with results on cellular level, weight, unit and description.

Author(s)

Marcos Alves, Felicitas Beier

See Also

readLPJmLClimateInput

Examples

```
## Not run:
readSource("LPJmLClimateInput", subtype, convert="onlycorrect")

## End(Not run)
```

correctLPJmLInputs *correctLPJmLInputs*

Description

correct LPJmLInputs content (dummy function)

Usage

```
correctLPJmLInputs(x)
```

Arguments

x	magpie object provided by the read function

Author(s)

Felicitas Beier

Examples

```
## Not run:
readSource("LPJmLInputs", convert = "onlycorrect")

## End(Not run)
```

correctLPJmL_new *correctLPJmL_new*

Description

Convert LPJmL content (dummy function)

Usage

```
correctLPJmL_new(x)
```

Arguments

x	magpie object provided by the read function

Author(s)

Kristine Karstens

See Also

[readLPJmL()]

Examples

```
## Not run:
readSource("LPJmL", convert = "onlycorrect")

## End(Not run)
```

`correctLUH2v2` *correctLUH2v2*

Description

Correct LUH2v2 content

Usage

```
correctLUH2v2(x, subtype)
```

Arguments

`x`	magpie object provided by the read function
`subtype`	switch between different inputs

Value

List of magpie object with results on cellular level

Author(s)

Florian Humpenoeder, Stephen Wirth, Kristine Karstens, Felicitas Beier, Jan Philipp Dietrich, Edna J. Molina Bacca

downloadLPJmLClimateInput *downloadLPJmLClimateInput*

Description

Download GCM climate input used for LPJmL runs

Usage

```
downloadLPJmLClimateInput(subtype = "ISIMIP3bv2:MRI-ESM2-0:ssp370:temperature")
```

Arguments

subtype	Switch between different inputs (e.g. "ISIMIP3b:IPSL-CM6A-LR:historical:1850-2014:temperature") Argument consists of GCM version, climate model, scenario and variable, separated by ":"

Value

metadata entry

Author(s)

Marcos Alves, Kristine Karstens

Examples

```
## Not run:
readSource("LPJmLClimateInput", convert = "onlycorrect")

## End(Not run)
```

downloadLPJmL_new *downloadLPJmL_new*

Description

Download LPJmL content by version, climate model and scenario

Usage

```
downloadLPJmL_new(
  subtype = "LPJmL4_for_MAgPIE_44ac93de:GSWP3-W5E5:historical:soilc"
)
```

Arguments

subtype	Switch between different input It consists of LPJmL version, climate model, scenario and variable. For pasture lpjml runs, the scenario variable is used to navigate the output folder structure (e.g. 'LPJmL4_for_MAgPIE_3dda0615:GSWP3-W5E5:historical:soilc' or "LPJmL5.2_Pasture:IPSL_CM6A_LR:ssp126_co2_limN_00:soilc_past_hist")

Value

metadata entry

Author(s)

Kristine Karstens, Marcos Alves, Felicitas Beier

Examples

```
## Not run:
readSource("LPJmL_new", convert = FALSE)

## End(Not run)
```

---

readGAEZv4 *readGAEZv4*

Description

Read in data from the Global Agro-ecological Zones (GAEZ) data set version 4

Usage

```
readGAEZv4(subtype = "MCzones")
```

Arguments

subtype	Subtype to be read

Value

MAgPIE object at 0.5 cellular level

Author(s)

Felicitas Beier

Examples

```
## Not run:
readSource("GAEZv4", convert = "onlycorrect")

## End(Not run)
```

`readLandInG` *readLandInG*

Description

Reads in LandInG data

Usage

```
readLandInG(subtype = "physicalArea")
```

Arguments

`subtype`	Type of LandInG data that should be read: • `physicalArea`: Cropland extend/ physical cropping area separated in irrigated and rainfed • `harvestedArea`: Harvested area separated in different crop types

Value

magpie object

Author(s)

Felicitas Beier

See Also

`readSource`

Examples

```
## Not run:
A <- readSource("LandInG", subtype = "harvestedArea", aggregate = FALSE)

## End(Not run)
```

readLPJmL *readLPJmL*

Description

Read LPJmL content

Usage

```
readLPJmL(subtype = "LPJmL5:CRU4p02.soilc")
```

Arguments

subtype	Switch between different input

Value

List of magpie objects with results on cellular level, weight, unit and description.

Author(s)

Kristine Karstens, Abhijeet Mishra, Felicitas Beier

See Also

[readLPJ()]

Examples

```
## Not run:
readSource("LPJmL", subtype = "LPJmL5:CRU4p02.soilc", convert = "onlycorrect")

## End(Not run)
```

readLPJmLClimateInput *readLPJmLClimateInput*

Description

Read Climate data used as LPJmL inputs into MAgPIE objects

Usage

```
readLPJmLClimateInput(
  subtype = "ISIMIP3bv2:MRI-ESM2-0:ssp370:temperature",
  subset = "annualMean"
)
```

Arguments

subtype	Switch between different inputs, e.g. "ISIMIP3bv2:MRI-ESM2-0:ssp370:1850-2014:tas" Available variables are: * tas - * wet - * per -
subset	Switch between different subsets of the same subtype Available options are: "annualMean", "annualSum", "monthlyMean", "monthlySum", "wetDaysMonth" Note that not all subtype-subset combinations make sense

Value

MAgPIE objects with results on cellular level.

Author(s)

Marcos Alves, Kristine Karstens, Felicitas Beier

See Also

readLPJmLClimateInput

Examples

```
## Not run:
readSource("LPJmLClimateInput", subtype, convert = "onlycorrect")

## End(Not run)
```

---

readLPJmLInputs *readLPJmLInputs*

Description

This function reads in LPJmL inputs (inputs to LPJmL)

Usage

```
readLPJmLInputs(subtype = "lakeshare")
```

Arguments

subtype	Switch between different inputs

Value

List of magpie objects with results on cellular level, weight, unit and description.

Author(s)

Felicitas Beier

Examples

```
## Not run:
readSource("LPJmLInputs", subtype = "lakeshare", convert = FALSE)

## End(Not run)
```

---

readLPJmL_new *readLPJmL_new*

Description

Read in LPJmL outputs

Usage

```
readLPJmL_new(
  subtype = "LPJmL4_for_MAgPIE_44ac93de:GSWP3-W5E5:historical:soilc"
)
```

Arguments

subtype	Switch between different inputs (eg. "LPJmL5.2_Pasture:IPSL_CM6A_LR:ssp126_co2_limN_00:soilc_

Value

List of magpie objects with results on cellular level, weight, unit and description.

Author(s)

Kristine Karstens, Abhijeet Mishra, Felicitas Beier, Marcos Alves

See Also

[readLPJ()]

Examples

```
## Not run:
readSource("LPJmL_new", convert = FALSE)

## End(Not run)
```

readLUH2v2 *readLUH2v2*

Description

read LUH inputs

Usage

```
readLUH2v2(subtype)
```

Arguments

subtype	switch between different inputs

Value

List of magpie objects with results on cellular level, weight, unit and description

Author(s)

Florian Humpenoeder, Stephen Wirth, Kristine Karstens, Felicitas Beier, Jan Philipp Dietrich, Patrick v. Jeetze

toolClimateInputVersion *toolClimateInputVersion*

Description

Specify default settings for LPJmL climate input version and baseline settings

Usage

```
toolClimateInputVersion(lpjmlVersion, climatetype)
```

Arguments

lpjmlVersion	Add-ons (+*) for further version specification for LPJmL version
climatetype	Switch between different climate scenarios

Value

configuration as list

Author(s)

Kristine Karstens

toolForestRelocate *toolForestRelocate*

Description

Reallocates cellular forest information from LUH2 to better match FAO forest information

Usage

```
toolForestRelocate(lu, luCountry, natTarget, vegC)
```

Arguments

lu	uncorrected landuse initialisation data set (cell level)
luCountry	uncorrected landuse initialisation on country level
natTarget	target natural land allocation on country level
vegC	vegetation carbon data used as reallocation weight

Value

List of magpie object with results on cellular level

Author(s)

Kristine Karstens, Jan Philipp Dietrich, Felicitas Beier, Patrick v. Jeetze

toolLPJmLVersion *toolLPJmLVersion*

Description

Specify default settings for LPJmL version and baseline settings

Usage

```
toolLPJmLVersion(version, climatetype)
```

Arguments

version	Switch between LPJmL versions (including add-ons (+*) for further version specification)
climatetype	Switch between different climate scenarios

Value

configuration as list

Author(s)

Kristine Karstens

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