

Package: magpiesets (via r-universe)

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Type Package

Title MAgPIE sets for R

Version 0.46.0

Date 2024-08-28

Description A library containing MAgPIE sets and other support functions.

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URL <https://github.com/pik-piam/magpiesets>,
<https://doi.org/10.5281/zenodo.1158588>

BugReports <https://github.com/pik-piam/magpiesets/issues>

Depends magclass (>= 6.0.3)

Suggests covr, knitr, rmarkdown

VignetteBuilder knitr

Encoding UTF-8

LazyData yes

LazyLoad yes

RoxygenNote 7.3.2

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

RemoteUrl <https://github.com/pik-piam/magpiesets>

RemoteRef HEAD

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magpiesets-package *Magpie Sets Processing Tools*

Description

Package contains helper functions for reporting and validation (special focus on commodities)

Arguments

version	Switch between different version of the magpiesets library
default_sep18	default MAGPIE 4.0 set with 49 products in 'kall'
biogas_dec18	biogas extension including biogas, biochar and manure in 'kall'
biochar_jan19	biochar extension including biochar and pyrolyzing

Author(s)

Benjamin Leon Bodirsky (Maintainer: <bodirsky@pik-potsdam.de>), Florian Humpenoeder, Abhijeet Mishra, Kristine Karstens

See Also

Useful links:

- <https://github.com/pik-piam/magpiesets>
- [doi:10.5281/zenodo.1158588](https://doi.org/10.5281/zenodo.1158588)
- Report bugs at <https://github.com/pik-piam/magpiesets/issues>

addLocation	<i>addLocation</i>
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Description

Function translates (if possible) cell numbers into coordinates or coordinates into cell numbers and adds them to the spatial dimension of the object.

Usage

```
addLocation(x, fillMissing = NULL, naCellNumber = 0, format = "both")
```

Arguments

x	magpie object to be enriched with spatial information. Currently only works for 0.5 degree data sets with 59199 or 67420 cells or a subset of it.
fillMissing	if NULL cells missing from the total 59199 are just being ignore. If set to a value missing cells will be added with this value (e.g. all set to 0 if fillMissing is 0)
naCellNumber	number or string given as cell number for cells which do not have an assigned cell number in the 59199 mapping
format	either "both" or "iso.grid". When set to "iso.grid", the function will remove the pre-existing spatial dimensions after adding the coordinates' sorted iso.grid location. This argument is ignored for input objects initially containing iso.grid and LPJ datasets.

Value

magpie object with added spatial subdimensions

Author(s)

Jan Philipp Dietrich, Felicitas Beier, Michael Crawford

Examples

```
map <- Cell2Country()
x <- y <- z <- population_magpie

getCoords(x) <- map[100:109, c("lon", "lat")]
getItems(x, "i") <- NULL
addLocation(x)

getCoords(y) <- map[100:109, c("lon", "lat")]
getItems(y, "i") <- NULL
addLocation(y, format = "iso.grid")

getCells(z) <- map$celliso[100:109]
```

```
addLocation(z)
```

```
Cell2Country
```

```
Cell2Country
```

Description

function returning the mapping between grid and country

Usage

```
Cell2Country()
```

Value

data frame returning the mapping between cells and countries

Author(s)

Edna J. Molina Bacca

Examples

```
## Not run:
  Cell2Country()

## End(Not run)
```

```
findset
```

```
findset
```

Description

function returning set item of MAgPIE sets

Usage

```
findset(set, alias = FALSE, noset = "warning", version = NULL)
```

Arguments

set	a MAgPIE set (e.g. "kcr"), or a vector of sets.
alias	if TRUE, set elements are extended by '_alias'. Can be used to avoid doubling of dimnames.
noset	if "original", a set that has no mapping is returned without changes; otherwise a vector of length 0 is returned, plus a warning that the set does not exist.
version	Switch between different version of the magpiesets library (use 'versionset' to load version types itself)

Value

MAGPIE set items

Author(s)

Benjamin Leon Bodirsky, Florian Humpenoeder, Kristine Karstens

Examples

```
## Not run:
  findset("kcr")

## End(Not run)
```

FRAnames

FRA names

Description

function returning the reporting names from FRA 2020 category

Usage

```
FRAnames(x, from = "franames", to = "magpienames", mapping = "fra_names.csv")
```

Arguments

x	a vector of common FRA 2020 names (e.g. c("nat_reg","agb"))
from	fra names for common magpie abbreviations, FRAnames for reverse translation
to	Common names for official reporting names, reportincolors for typical color-code of an item
mapping	csv file in inst/extdata folder.

Value

vector with reporting names or volors

Author(s)

Abhijeet Nishra

Examples

```
## Not run:
  FRAnames("nat_reg")
  FRAnames("tece",to="reportingcolors")

## End(Not run)
```

 reportheelper

reportheelper

Description

Aggregates MAgPIE products to standard reporting categories and changes to reporting names. Automatically recognizes if only a reduced form of "kall" is provided.

Usage

```
reportheelper(
  x,
  dim = 3.1,
  level_zero_name = "All products",
  detail = TRUE,
  sort = FALSE,
  partly = FALSE,
  version = NULL
)
```

Arguments

x	Magpie object with data that shall be reported
dim	Dimension in which magpie products ("tece" etc) can be found
level_zero_name	the general reporting name of the Magpie object (e.g. "Agricultural Production")
detail	if detail=F, the subcategories of groups are not reported (e.g. "soybean" within "oilcrops")
sort	sort items in 3rd dimension alphabetically (TRUE or FALSE)
partly	boolean or set name, that should be reported in detail, even if it is just partly provided within the.gdx
version	Switch between different version of the magpiesets library

Value

MAGPIE object with aggregated and renamed items in 3rd dimension

Author(s)

Benjamin Leon Bodirsky, Florian Humpenoeder, Kristine Karstens

Examples

```
## Not run:
x <- calories(level = "regglo", products = "kcr", attributes = "protein")
x <- reporthelper(x)

## End(Not run)
```

reportingnames	<i>reportingnames</i>
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Description

function returning the reporting names of a vector

Usage

```
reportingnames(
  x,
  from = "magpienames",
  to = "reportingnames",
  mapping = "reportingnames.csv"
)
```

Arguments

x	a vector of common magpie names (e.g. c("tece", "trce"))
from	magpienames for common magpie abbreviations, reportingnames for reverse translation
to	reportingnames for official reporting names, reportincolors for typical colorcode of an item
mapping	csv file in inst/extdata folder.

Value

vector with reporting names or volors

Author(s)

Benjamin Leon Bodirsky, Florian Humpenoeder, Patrick v. Jeetze

Examples

```
## Not run:
  reportingnames("tece")
  reportingnames("tece",to="reportingcolors")

## End(Not run)
```

reportingReverse	<i>reportingReverse</i>
------------------	-------------------------

Description

reverses the reporting format with tree structure (e.g. "Demand", "Demand|Agriculture|Food (Mt DM)") into a conventional magpie format

Usage

```
reportingReverse(x)
```

Arguments

x a MAgPIE which has the format of a report file (e.g. "Demand|Agriculture|Food (Mt DM)")

Value

a MAgPIE object with higher dimensionality

Author(s)

Benjamin Leon Bodirsky

Examples

```
## Not run:
budget <- calcOutput("ValidDemand")
  reportingReverse(budget)

## End(Not run)
```

summationhelper	<i>summationhelper</i>
-----------------	------------------------

Description

Modifies name of variables in a magpie object to add summation symbols.

Usage

```
summationhelper(x, sep = "+", dim = 3.1, check = TRUE, excludeLevels = 0)
```

Arguments

x	MAGPIE object from validation calculations in "almost" ready format. for e.g. from <code>x <- calcOutput("ValidDemand","FAO")</code>
sep	summation symbol (+,++,,-)
dim	Dimension in which the modification, should take place
check	Switch to turn off checking routine, if FALSE. Default is TRUE.
excludeLevels	levels to be excluded from summation, e.g. 1 for Trade in TradeNet-Exports.

Details

summationhelper should help to organize the subcategories into groups for e.g. stackplots. Notice the following hints:

- Every name should just contain one summation symbol (mostly '+').
- The position of the symbol (counted in 'l' from left side) will determine the level.
- Every subitem containing the same summation symbol in the same level with the same supercategory name will be summed.
- Items without any summation symbol will be ignored.
- Items with different summation symbols will be summed up separately.
- In most of the cases a summation symbol will be just placed before the last level (counted in 'l' from left side).
- It is helpful to think about which group of items should be stacked in a stackplot.

An example how a summation symbol placement could look like:

```
Toplevel
Toplevel|+|Item 1
Toplevel|+|Item 2
Toplevel|Item 2|+|Subitem 1
Toplevel|Item 2|+|Subitem 1
Toplevel|++|Item A
Toplevel|++|Item B
Toplevel|Item ?
```

Value

MAGPIE object

Author(s)

Abhijeet Mishra, Kristine Karstens

Examples

```
## Not run:  
x <- calcOutput("LanduseInitialisation", aggregate = FALSE)  
getNames(x) <- paste0("Land Cover|", reportingnames(getNames(x)), " (million ha)")  
x <- summationhelper(x)  
  
## End(Not run)
```

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