Package ‘SQI’

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Type Package

Title Soil Quality Index

Version 0.1.0

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Description The overall performance of soil ecosystem services and productivity greatly relies on soil health, making it a crucial indicator. The evaluation of soil physical, chemical, and biological parameters is necessary to determine the overall soil quality index. In our package, three commonly used methods, including linear scoring, regression-based, and principal component-based soil quality indexing, are employed to calculate the soil quality index. This package has been developed using concept of Bastida et al. (2008) and Do-ran and Parkin (1994) <doi:10.1016/j.geoderma.2008.08.007> <doi:10.2136/sssaspecpub35.c1>.

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Encoding UTF-8

RoxygenNote 7.2.1

Imports readxl, dplyr, stats, matrixStats, olsrr, FactoMineR

LazyData true

Depends R (>= 3.5.0)

NeedsCompilation no

Repository CRAN

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R topics documented:

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Data

This is data to be included in my package

Description

This is data to be included in my package

Usage

data(Data)

Format

A data frame with 60 rows and 12 column

PCAIndex

Soil Quality Index Based on Regression

Description

Soil Quality Index Based on Regression

Usage

PCAIndex(DataFrame, OptimumValue)

Arguments

DataFrame: Data set with first column as factors
OptimumValue: Optimum value of each variable; Minimum and maximum coded as "1111" and "9999" respectively.

Value

• PCAIndex: Final index
RegIndex

References


Examples

```r
library("SQI")
OP<-c(7,1111,9999,9999,9999,9999,9999,9999,9999,9999,1111)
PIndex<-PCAIndex(DataFrame = Data,OptimumValue = OP)
```

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**RegIndex**

**Soil Quality Index Based on Regression**

**Description**

Soil Quality Index Based on Regression

**Usage**

```r
RegIndex(DataFrame, Dep_col, OptimumValue)
```

**Arguments**

- **DataFrame**: Data set with first column as factors
- **Dep_col**: Dependent variable column number
- **OptimumValue**: Optimum value of each variable; Minimum and maximum coded as "1111" and "9999" respectively.

**Value**

- **RegIndex**: Final index

**References**

ScoingIndex

Description

Soil Quality Index Based on Linear Scoring

Usage

ScoingIndex(DataFrame, OptimumValue)

Arguments

DataFrame Data set with first column as factors
OptimumValue Optimum value of each variable; Minimum and maximum coded as "1111" and "9999" respectively.

Value

• Raw_mean: Raw score
• Index: Final index

References


Examples

library("SQI")
OP<-c(7,1111,9999,9999,9999,9999,9999,9999,9999,9999,1111)
RIndex<-RegIndex(DataFrame = Data,Dep_col=7,OptimumValue = OP)

ScoingIndex

Soil Quality Index Based on Linear Scoring
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