

# Bioenergy and biodiversity analyses

## Load required libraries

```
suppressMessages(library(raster))
suppressMessages(library(tidyverse))
suppressMessages(library(sf))
suppressMessages(library(biscale))
suppressMessages(library(pals))
suppressMessages(library(cowplot))
suppressMessages(library(data.table))
suppressMessages(library(grid))
# use devtools to install marcoUtils
#devtools::install_github("drmarcogir/marcoUtils")
library(marcoUtils)
```

## Read required files for creating maps

```
# baseline maps
rob<-"+proj=robin +lon_0=0 +x_0=0 +y_0=0 +ellps=WGS84 +datum=WGS84 +units=m +no_defs"
st_read("/mnt/data1tb/bioenergy/shapefiles/world_rob_singleparts.shp")->worldr
st_read("/mnt/data1tb/bioenergy/shapefiles/countries.shp") %>%
  st_transform(rob) %>%
  dplyr::select(FORMAL_EN)->worldr
crs(worldr)->rob
```

## Map overlay

This part of the code creates bivariate maps, based on the overlay between the bioenergy and richness raster datasets.