Galaxy-Bricks a Tool for Data Literacy and Scientific Approach Education in the Context of Citizen Science

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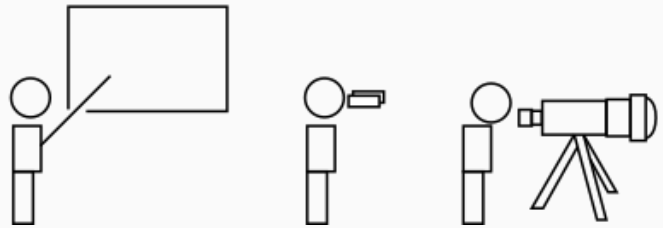
Diversity of the Citizen science community

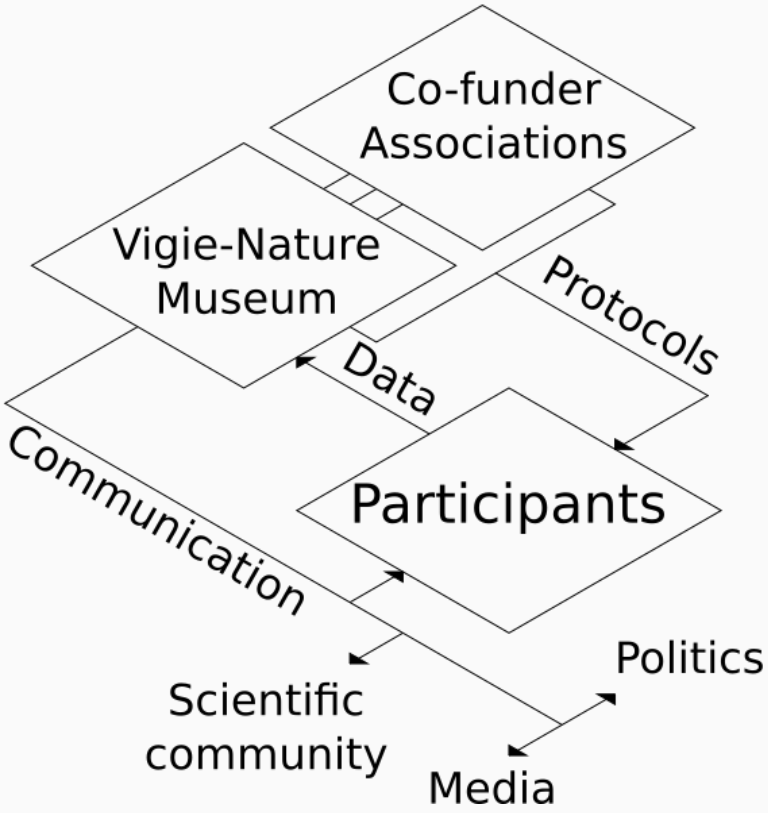
Organisms

Environments

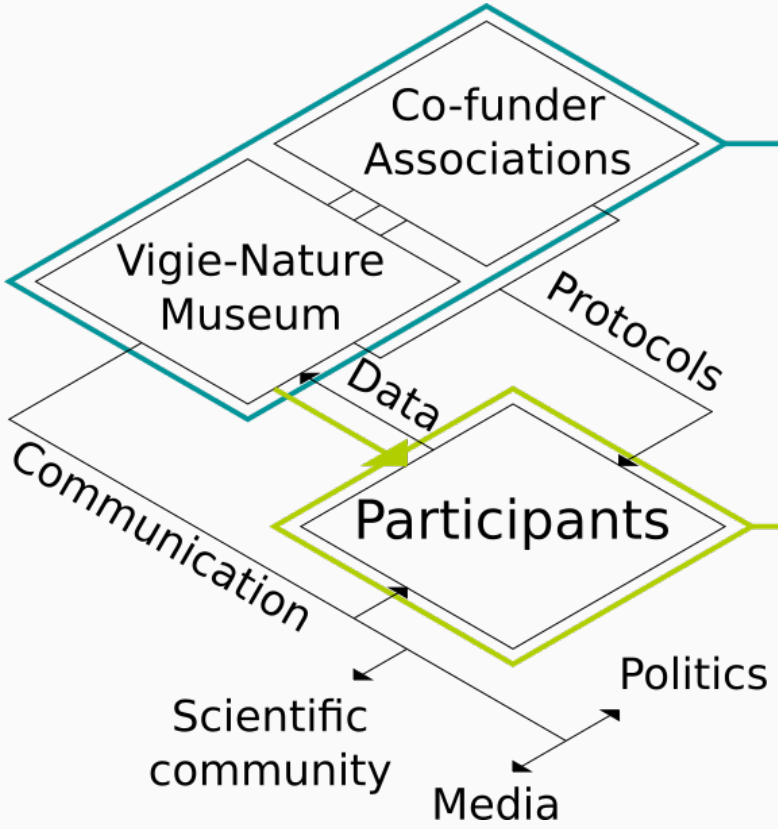
Users



Citizen science Network



Two platforms for the analysis



Galaxy-Ecology

Platform for researchers and partners stackhoders

Galaxy-Bricks

Collaborative plateform for the participants

Objectives - “Global”

- Propose new possibilities to participate for the citizens
- Give access to data and to data analysis tools
- Give to the participants a tool to answer the questions they have

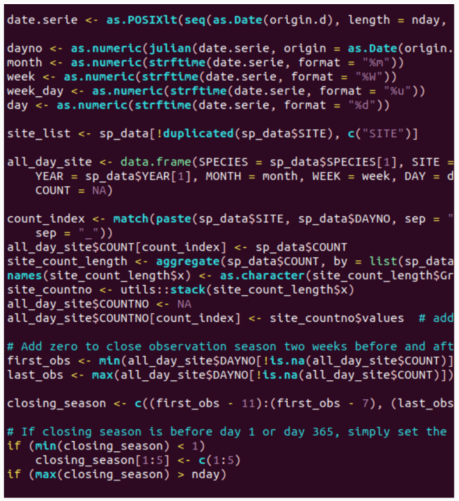
Objectives - High school students

- Provide a new tool for scientific approach education
- Data literacy education
- Increase interdisciplinary possibilities

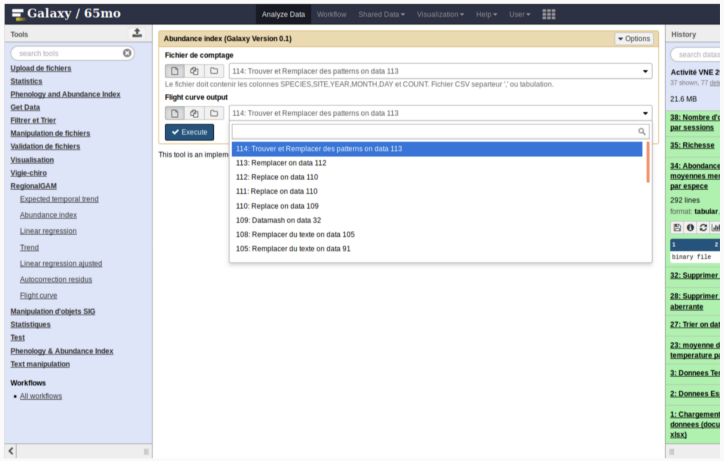
Why Galaxy

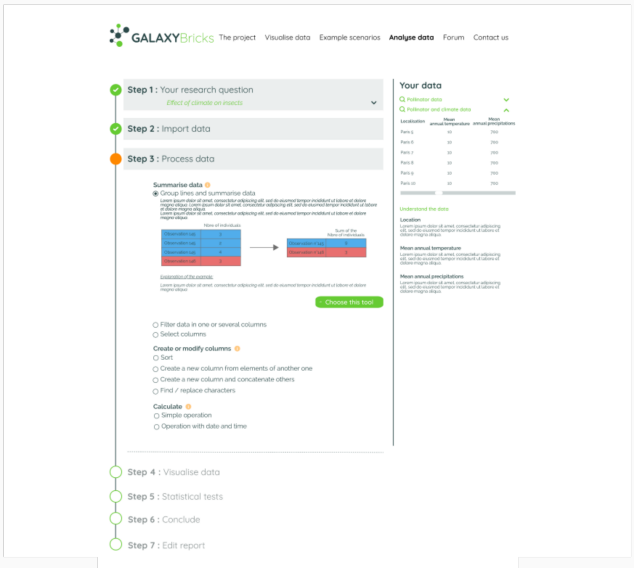
- Community
- Development and maintenance of tools
- FAIR
- Open source
- Access to high performance computing

Simplification of the user interface



```
date.serie <- as.POSIXlt(seq(as.Date(origin.d), length = nday,

dayno <- as.numeric(julian(date.serie, origin = as.Date(origin.
month <- as.numeric(strftime(date.serie, format = "%m"))
week <- as.numeric(strftime(date.serie, format = "%W"))
week_day <- as.numeric(strftime(date.serie, format = "%u"))
day <- as.numeric(strftime(date.serie, format = "%d"))

site_list <- sp_data[!duplicated(sp_data$SITE), c("SITE")]

all_day_site <- data.frame(SPECIES = sp_data$SPECIES[1], SITE =
    YEAR = sp_data$YEAR[1], MONTH = month, WEEK = week, DAY = d
    COUNT = NA)

count_index <- match(paste(sp_data$SITE, sp_data$DAYNO, sep = "
    sep = "_"))
all_day_site$COUNT[count_index] <- sp_data$COUNT
site_count_length <- aggregate(sp_data$COUNT, by = list(sp_data
names(site_count_length$x) <- as.character(site_count_length$Gr
site_countno <- utils::stack(site_count_length$x)
all_day_site$COUNTNO <- NA
all_day_site$COUNTNO[count_index] <- site_countno$values  # add

# Add zero to close observation season two weeks before and aft
first_obs <- min(all_day_site$DAYNO[!is.na(all_day_site$COUNT)]
last_obs <- max(all_day_site$DAYNO[!is.na(all_day_site$COUNT)]

closing_season <- c((first_obs - 11):(first_obs - 7), (last_obs

# If closing season is before day 1 or day 365, simply set the
if (min(closing_season) < 1)
    closing_season[1:5] <- c(1:5)
if (max(closing_season) > nday)
```





Scratch

Perspectives

- Collaborative analysis

Wireframe

Galaxy-Bricks demo

Thank you