

Inter-Life on the 9th and 10th of December 2014

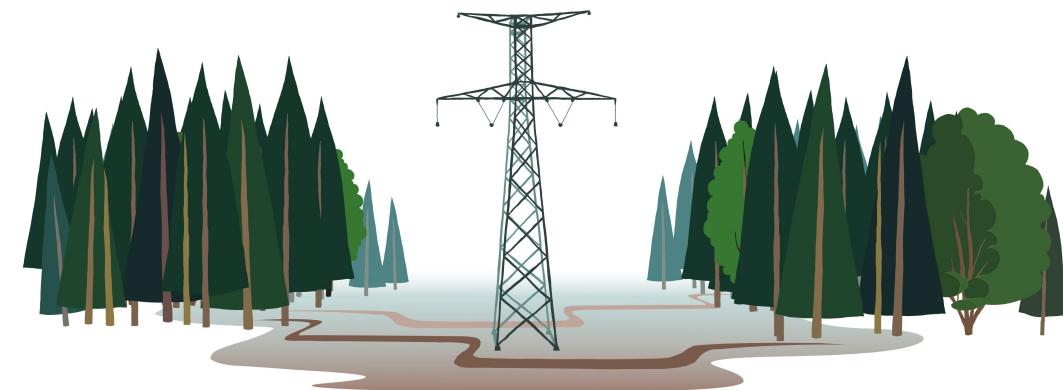
Hosingen, Luxembourg



LIFE ELIA

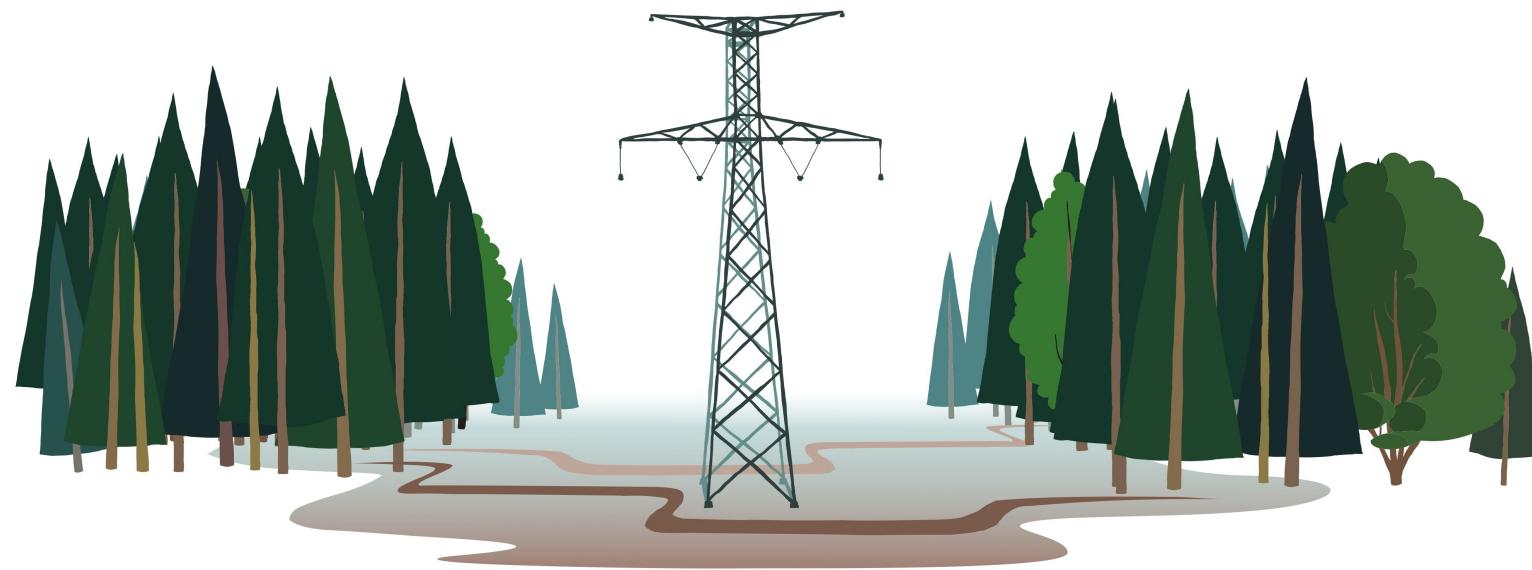
The use of free-of-rights softwares, tools and datasets for the management of a Life project.

Exploitation of data towards diagnostics, field work planification and preparation of management plans.

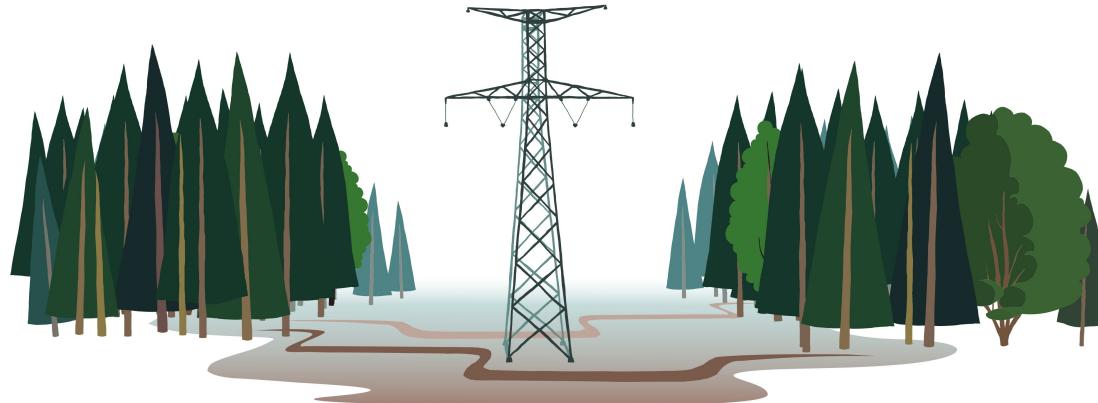


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1. The LIFE Elia project



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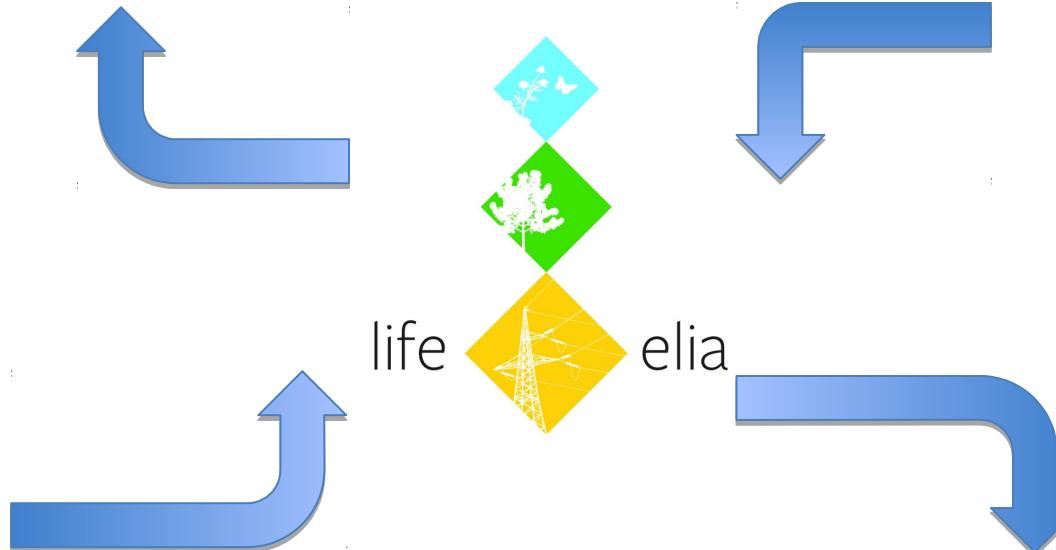
Combine **electrical safety** and **biodiversity**
using a **multi-partners** approach
and testing **innovative** vegetation management



1. The LIFE Elia project

LIFE + Biodiversity

- * in and out Natura 2000
- * innovative
- * European dimension
- * linear project



duration : 5 years (-> august 2016)

team : 7

funding : 3.000.000 €

- * European Commission (38 %)
- * Walloon Region (27 %)
- * Elia (22 %)
- * RTE (13 %)



Rte
Réseau de transport d'électricité

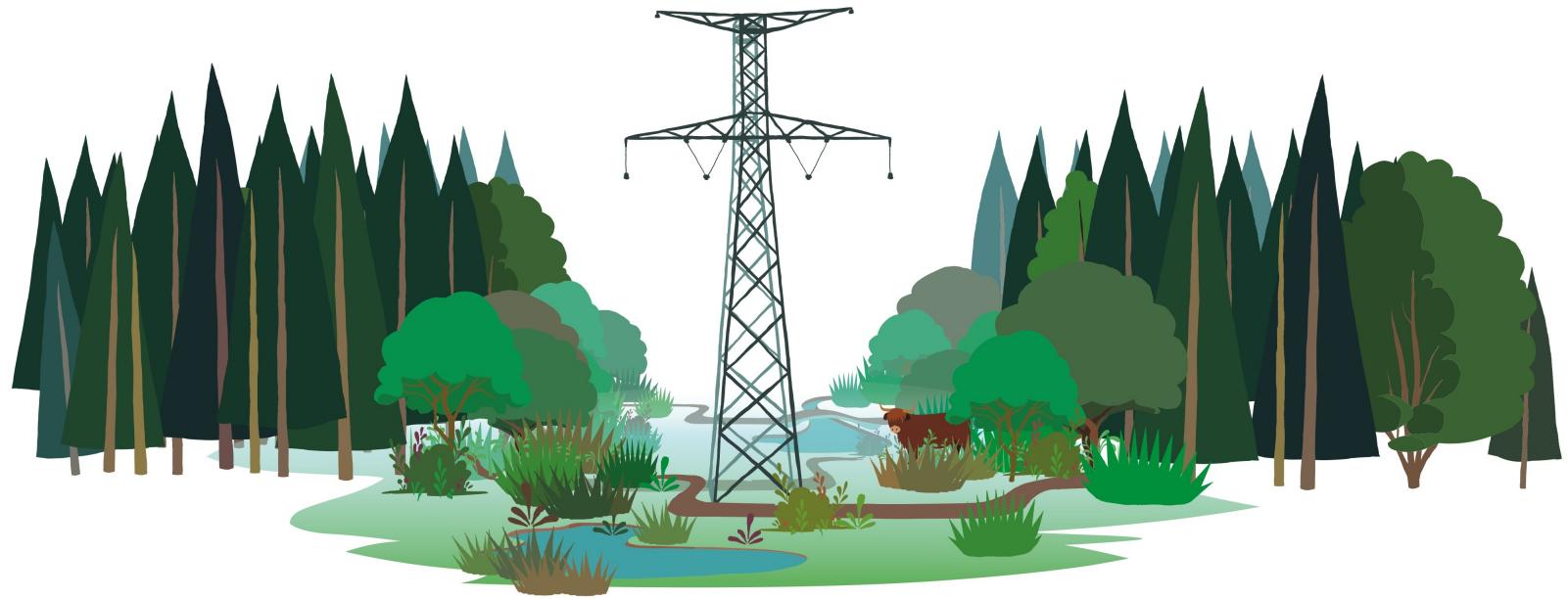
elia
Powering a world in progress

Avec
le soutien de la

Wallonie

28 sites in Belgium (160 km)
7 sites in France

2. A toolbox of 7 actions

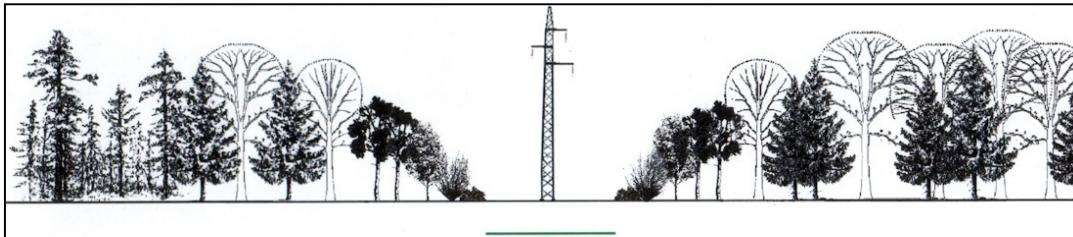


to combine **electrical safety** and **biodiversity**,
we are implementing **7 different actions**
depending on local (ecological) conditions and (human) opportunities

2. A toolbox of 7 actions

Actions implemented :

1. forest edges
2. conservatory orchards
3. natural habitats restoration
4. ponds
5. control of invasive plants
6. pasturage/mowing infrastructures
7. sowing flowering meadows



LIFE ELIA

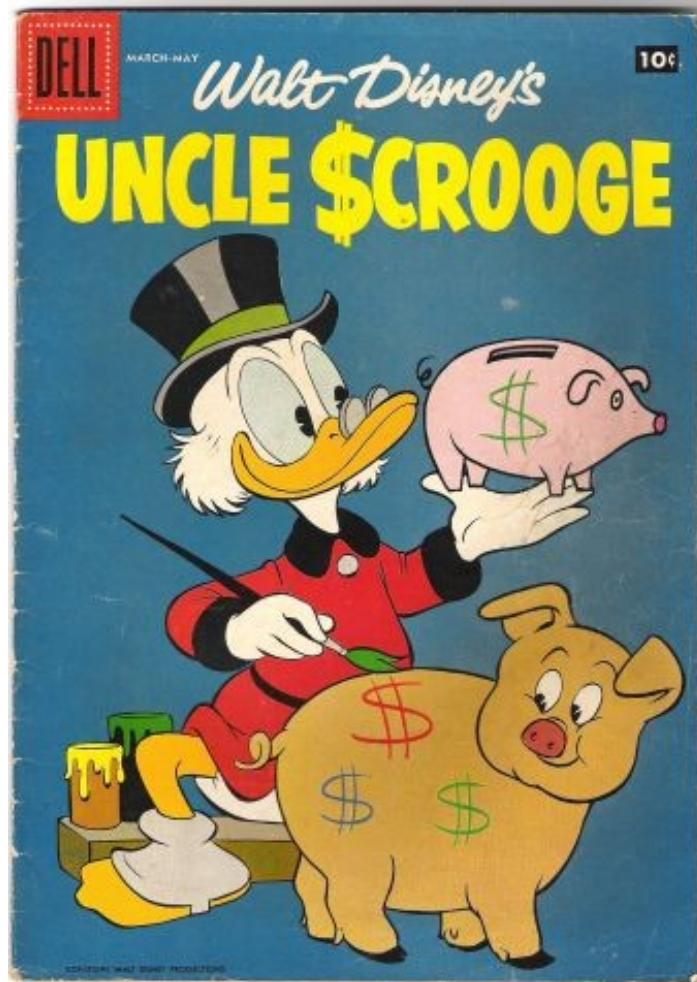
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Let's make it operational !!

Open source softs... are not necessarily for free, we can pay if want some services!!



cf. article « **6 Reasons to Pay for Open Source Software** »

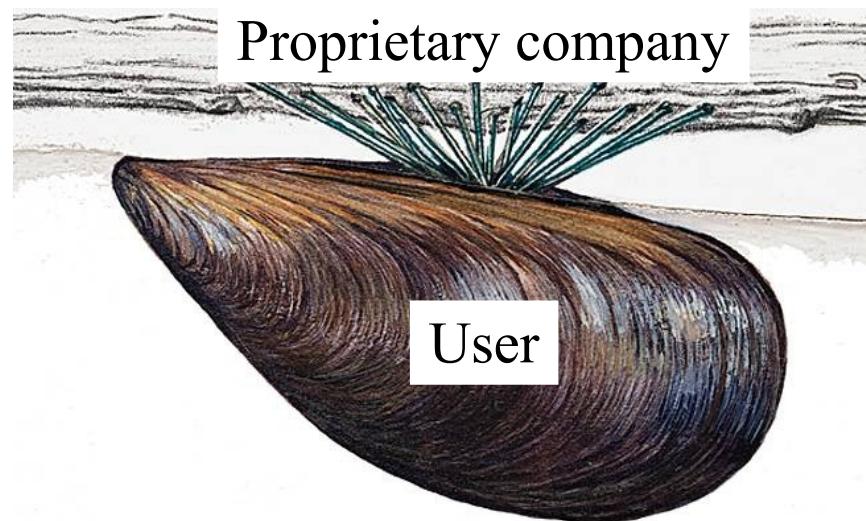
(<https://faunaliagis.wordpress.com/2013/09/15/6-reasons-to-pay-for-open-source-software/>)

1. Enterprise-Grade **Support**
2. Input Into **New Features**
3. Tested, **Stable Products**, Rapid Bugs Fixes and Predictable Lifecycles
4. **Extra Functionality**
5. **Integrated** Hardware and Software **Solution**
6. Low-Cost Platforms for Proprietary Products

Proprietary format :

- pay to use
- pay for support
- pay to share

=> good softwares for those who can afford it ...
and no guarantee about the future of data/output

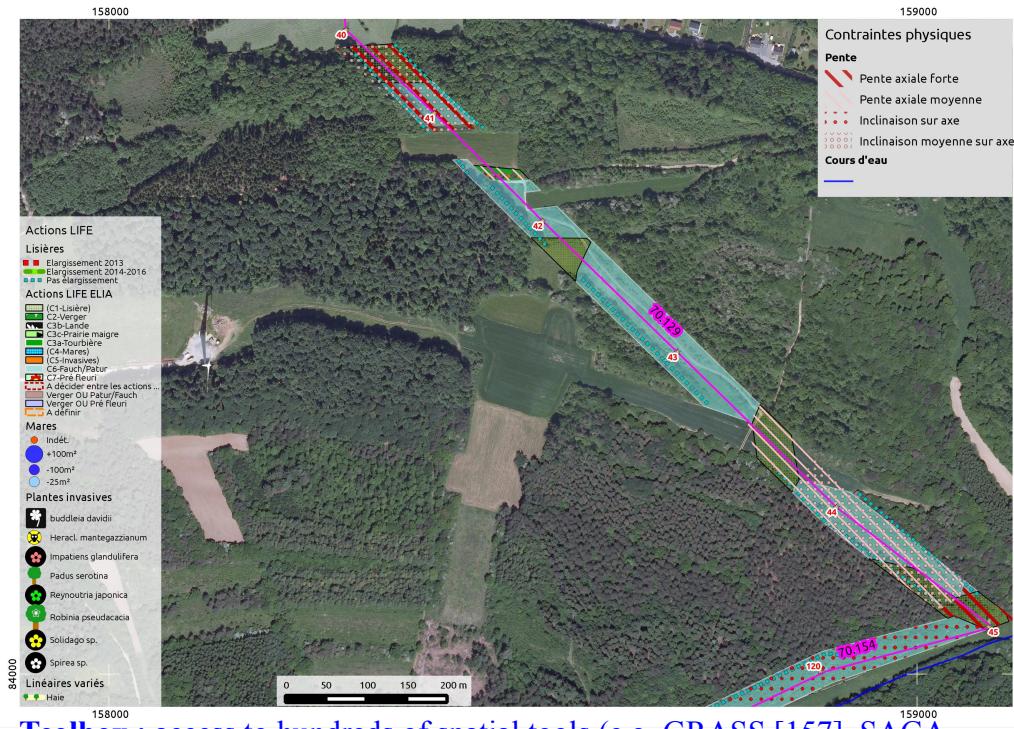


LIFE ELIA is mainly managed with:

QGIS: « a free and open source Geographic information system »

<http://www.qgis.org/en/site/>

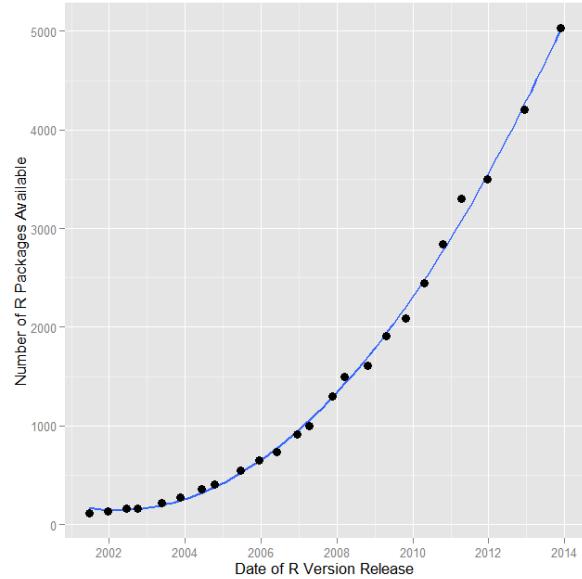
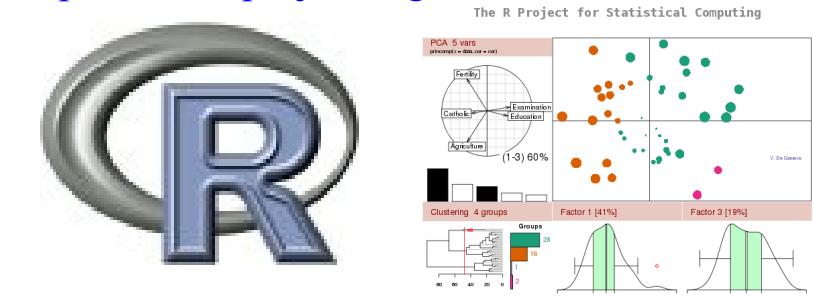
Windows/Apple/Linux
Community
Strong evolution since 5 years



Toolbox : access to hundreds of spatial tools (e.g. GRASS [157], SAGA [243], LIDAR [10], TauDEM [26],.....)
+ home-made R scripts with convenient interface and outputs (cf. video)
+ python (... better than R?!)

The R project for statistical computing

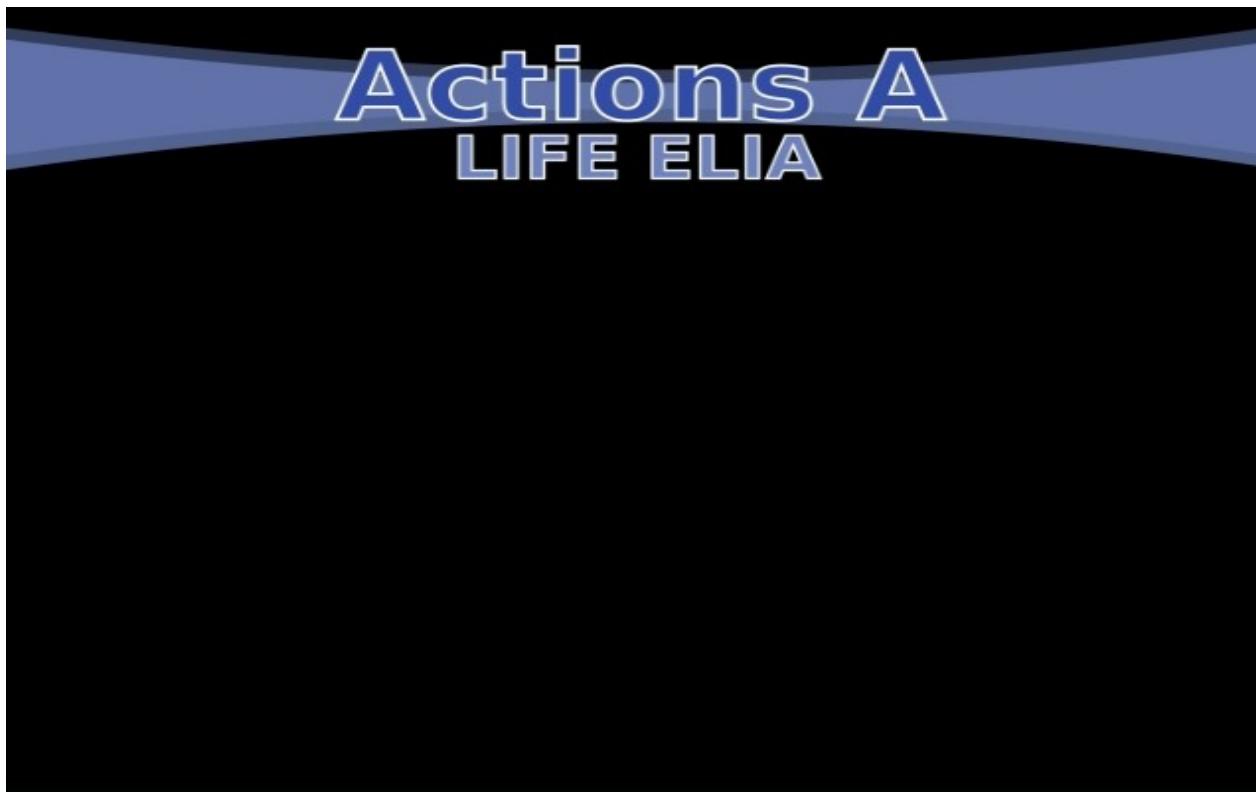
<http://www.r-project.org/>



How does it work?

Actions A1 → A3

From data collection to implementations of actions C



Screencast « 01LIFE-ActionsA_Interlife.mp4 » (4'43")

Action A3

Management of data and files and analyse

**A3-Database
Organisation & exploitation**

Screencast « 02LIFE-CE_A3_InterLife.mp4 » (3'17")

Links about QGIS and tools

- 3D viz with QGIS & three.js | Free and Open Source GIS Ramblings [WWW Document], n.d. URL <http://anitagraser.com/2014/03/15/3d-viz-with-qgis-three-js/> (accessed 12.1.14).
- Bernasocchi, M., n.d. Quantum GIS on Android. <http://android.qgis.org/download/qgis-for-android.pdf>
- Data & GIS tips: [Sextante Plugin] An R script for Neighborhood Detection [WWW Document], n.d. URL <http://datagistips.blogspot.be/2012/08/sextante-plugin-r-script-for.html> (accessed 11.27.14).
- From GIS to Remote Sensing: Estimation of Land Surface Temperature with Landsat Thermal Infrared Band: a Tutorial Using the Semi-Automatic Classification Plugin for QGIS [WWW Document], n.d. URL <http://fromgistros.blogspot.com/2014/01/estimation-of-land-surface-temperature.html> (accessed 11.28.14).
- From GIS to Remote Sensing: Land Cover Classification Using the Semi-Automatic Classification Plugin v. 3.0 “Rome” for QGIS [WWW Document], 2014. URL <http://fromgistros.blogspot.com/2014/06/land-cover-classification-using-SCP-3.html> (accessed 12.1.14).
- Livre QGIS : Un plugin par mois ! | PortailsIG [WWW Document], 2009. URL <http://www.portalsig.org/content/livre-qgis-un-plugin-par-mois> (accessed 12.1.14).
- Orfeo toolbox [WWW Document], n.d. URL <http://orfeo-toolbox.org/otb/download.html> (accessed 12.1.14).
- Port your R scripts to QGIS using SEXTANTE | Conservation Ecology [WWW Document], n.d. URL <https://conservationecology.wordpress.com/2013/08/14/port-your-r-scripts-to-qgis-using-sextante/> (accessed 11.27.14).
- QGIS on Android has a proper GUI | ANDROID · GIS · WEB [WWW Document], n.d. URL <http://www.opengis.ch/2011/08/18/qgis-on-android-has-a-proper-gui/> (accessed 11.28.14).
- QGIS Relations | Spatiotechnical thoughts [WWW Document], n.d. URL <http://blog.vitu.ch/10112013-1201/qgis-relations> (accessed 11.28.14).
- Ricardo, n.d. Create custom markers with R for your webmap. Digital Geography. <http://www.digital-geography.com/create-custom-markers-r-webmap/>
- Ricardo, n.d. Export your qgis project to a webmap with qgis2leaf [WWW Document]. Digital Geography. URL <http://www.digital-geography.com/export-qgis-project-webmap-qgis2leaf/#.VHucp6GP9F7> (accessed 11.30.14b).

& Google is your friend!!

Links about R as GIS

What? Where? How?
<http://cran.r-project.org/>

Rstudio, the perfect (?) graphic user interface
<http://blog.rstudio.org/>

Goldmine blog
<http://www.r-bloggers.com/>

Forum ONLY about SIG with R
<https://stat.ethz.ch/mailman/listinfo/R-SIG-Geo>

Forum on GIS (not only R, not only opensource!!)
<http://gis.stackexchange.com/>

Spatial data in R: Using R as a GIS

A tutorial to perform basic operations with spatial data in R, such as importing and exporting data (both vectorial and raster), plotting, analysing and making maps.

<http://pakillo.github.io/R-GIS-tutorial/>

THE book for GIS with R
Bivand, R., Pebesma, E., Gómez-Rubio, V., 2013. Applied Spatial Data Analysis with R - Springer, Use R! Springer New York.

& Google is your **BIG** friend!!

Retrieving base maps from Google with gmap function in package dismo

Some examples:
Getting maps for countries:

```
library(dismo)
gmap <- gmap("France") # choose whatever country
plot(gmap)
```



Choose map type:

```
gmap <- gmap("France", type = "satellite")
```



Use R!

Roger S. Bivand • Edzer J. Pebesma
Virgilio Gómez-Rubio

Applied Spatial
Data Analysis
with R

Springer

Thank you for your attention