Geo-harmonizer PROJECT REPORTS

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Dissemination Strategy

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www.opendatascience.eu/geoharmonizer-project

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Introduction

Scope of Geo-harmonizer

The overall objective of the Geo-harmonizer project - EU-wide automated mapping system for harmonization of Open Data based on FOSS4G and Machine Learning - is to develop an original, web-based, scalable and modular system for hosting and accessing various thematic geospatial data layers (vector and raster GIS layers) to support cross-border services over “the Geo-harmonizer region”, specifically the European Economic Area and the United Kingdom, Norway, Switzerland, Serbia, B&H, Montenegro, Kosovo, North Macedonia and Albania.

The consortium will create a data portal and a software suite extending a wide variety of free and open-source software solutions for geospatial data (FOSS4G) in combination with state-of-the-art Machine Learning algorithms, and will be made available within EU-supported High Performance Computing (HPC)/Cloud computing infrastructures. The functionality of the system will be demonstrated with a list of new, added-value, pan-EU data sets including seamless continental Europe cover time-series (2000-2020), environmental quality indicators, climate change indicators, potential natural vegetation maps and OpenStreetMap+ (improved continental Europe version of the OpenStreetMap). All datasets generated by Geo-harmonizer will be integrated into the European Data Portal.

The Geo-harmonizer project is financed by the European Commission through the Telecom programme of the Connecting Europe Facility agency.

Purpose of document

The dissemination strategy is a document that defines actions that are suitable and necessary in order to distribute in an efficient manner to relevant groups the activities and results of the Geo-harmonizer project. The stated scope is to engage interested groups of potential users for the Geo-harmonizer map products, as well as for the tools developed, and to collect as much feedback as possible.
Although the general guidelines to be followed will be drafted within this document, given the length of the project and the fast changing communication environment, new elements may be added.
The Dissemination Strategy document is not intended for prolonged interaction with high-potential users, but rather for the dissemination to a wider audience within the various communities that could benefit from the Geo-harmonizer activities and results.

Overview

The dissemination strategy of the Geo-harmonizer project details all activities and defines the framework for the interactions with the wider community, with the scope of extensively sharing the results of the project.
The document has 4 main chapters: introduction, overall strategy, dissemination activities and report on impact. After highlighting the purpose of the document in the introduction, the strategy defines the principles that guide all actions, such as respecting Intellectual Property Rights or coordinating activities as no results remain unshared and duplication is avoided. The target groups, as well as

channels of communications are defined together with the guidelines for preparing the dissemination messages, including the funding acknowledgement and visual identity. The dissemination activities described fall into several categories, that range from planned events, to peer-reviewed publications and website creation and maintenance.
Given the nature of Geo-harmonizer results, an important focus is on the steps to publish the added-value datasets created.
The last chapter address the quantification of the impact that the dissemination activities have over specific periods of time and proposes a series of reporting strategies.

Overall strategy

The overall objectives of the dissemination strategy are the following:

1. Building awareness regarding the project within the wider public;
2. Enhancing project's visibility within relevant European organizations, mainly through active participation to relevant conferences, workshops and direct contact;
3. Communicating the findings of the research team regarding tools and technologies used in the harmonization processes - both geometric and semantic - as well as other new developments achieved during the lifetime of the project;
4. Building a foundation for an effective use of the tools developed within the project, mainly through workshops and code days organized by the team, but also through Gitlab interactions;
5. Communicating the scientific findings of the research team with regard to the development of the Geo-harmonizer map products within the scientific community, as well as to the wider public.

All partners of the Geo-harmonizer consortium must be proactive in disseminating the results obtained within the project. The subsequent chapters of this document explain the steps necessary to do so.

Dissemination principles

As all partners within the Geo-harmonizer consortium will actively participate to the dissemination activities, it is important that they all agree on a set of principles to follow throughout the project communications:

1. To respect the Intellectual Property Rights (IPR) of all partners
2. To recognize and respect the work of all partners by ensuring the proper reference of all relevant parties whose work is directly or indirectly mentioned in the proposed message/publication
3. To coordinate actions in order to avoid overlapping or duplication of dissemination activities
4. To set clear criteria to distinguish between results suitable for dissemination and exploitable results
5. To target the appropriate target group for the dissemination message
6. When possible, the project's visual identity as well as the EU emblem must be included

7. It is recommended that each beneficiary ensures open access (free of charge, online access for any user) to all peer-reviewed scientific publications relating to its results as well as open access to research data
8. Any dissemination of results must indicate that it reflects only the author's view and that the EC is not responsible for any use that may be made of the information it contains.

Dissemination target groups

The notion of "target group" describes the different groups of professionals that can benefit from the Geo-harmonizer project results, be it map products, new tools, benchmarking results or methodologies outlined.

Two levels of dissemination will be considered based on the identified main types of communities:

- **Non-scientific** - this level mainly addresses national authorities, European monitoring organizations, non-governmental organizations and the winder public.
- **Scientific** - academic institutions and research organizations

The dissemination messages will be drafted for the target groups also based on their roles and functions:

- National authorities and European organizations. This category includes all organizations national or regional that have a mandate to monitor a specific set of environmental parameters or to act as an aggregator of geospatial and non-geospatial datasets for environmental parameters.
- Academia and research institutions. This category includes organizations (universities, research centers, research networks) that have as primary focus research in novel technologies in Earth Observation and ML advancements in the geospatial field
- Industry. This category includes private companies that are active in the one of the following sectors: geospatial technologies development with an emphasis on Earth Observation, environmental and urban planning.
- Non-governmental organizations .
- General public

Selection of communication channels and tools

There are 2 main ways through which one can convey a message:

1. oral communication channels: conferences, workshops, code days, formal and informal meetings;
2. written communication channels: project website, peer-reviewed articles, dissemination messages, email.

Communication channels

The following communication media channels have been selected for the dissemination of the promotion messages for the Geo-harmonizer project results:

- Twitter

- Linkedin
- ResearchGate

For each social media channel, a dedicated account for the Geo-harmonizer project has been created, except for the latter. In the case of ResearchGate, a project page has been created - adding all members of the consortium. All papers published, conference proceedings, slides within the project will be made accessible through authors researchgate accounts.

The credentials and responsable partner for each are written in the following table:

Social media channel	Account/page name	Password	Responsible partner	Responsible person
Twitter	@HarmonizerGeo	**********	Terrasigna	Codrina Ilie
Linkedin			OGH	Tom Hengl
ResearchGate	https://www.researchgate.net/project/Geo-harmonizer-EU-wide-automated-mapping-system-for-harmonization-of-Open-Data-based-on-FOSS4G-and-Machine-Learning	n/a	Terrasigna	Codrina Ilie
Contact email address	support@opendatascience.eu	n/a	OGH/CTU	Tom Hengl/ Martin Landa

For the Geo-harmonizer project, a dedicated mailing list has also been set up by the technical coordinator of the project on OVHCloud and indicated as a contact point on the https://docs.ovh.com/gb/en/emails/guide-dutilisation-mailing-list/project's website: support@opendatascience.eu . Any project member wanting to receive the communications via email must subscribe. Also, the responsibility of unsubscribe is also theirs. Answering emails received is the responsibility of the 2 co-leaders of the project. However, if they see fit, they can also ask for another project member to answer a specific inquiry.

Building a community around a project can prove to be a cumbersome task. To achieve a dissemination of the project's results as extensive as possible within target groups, it is crucial that all partners in the consortium re-circulate the messages posted using the Geo-harmonizer accounts, through their own professional social media accounts. When reporting on the dissemination activities, the reach achieved in this manner will also be considered.

Dissemination messages definition

The promotion messages have the primary scope of disseminating what has been achieved within a specific stage of the project, be it a new map product, publishing of a peer-reviewed paper, a new software package etc. Their structure and tone is given by the dissemination channel and the target group addressed. Irrespective of the channel of communication, it is important that all Geo-harmonizer messages are clear, concise and consistent throughout the duration of the project. "The message is the extreme synthesis [of what the project wants] to communicate, or rather the

essential core of the contents or line of reasoning that should, in any case, be learned and remembered by the receiver: everything, in the communication, must contribute to getting it through to the public" (Carrada 2006, page 41).

The dissemination messages to be sent to the target groups should be close to the principles on which the activities of the Geo-harmonizer are based upon, its objectives and milestones. A message sent out through Geo-harmonizer accounts should:

- Show the powerful capabilities of FOSS4G solutions for geospatial data processing and visualization;
- Substantiate the importance of harmonized map products over Europe for a valuable understanding of the environmental characteristics beyond administrative boundaries;
- Demonstrate the substantial gain of Earth Observation open data and technologies in understanding environmental parameters.

All dissemination messages must include the URL to the project website where the result in question has been published.

For consistency, all Geo-harmonizer dissemination messages should be written following the appropriate branding elements, so that it allows readers to quickly associate the message with the project, such as including the official hashtag #GeoHarmonizer_INEA. When it is possible to attach a picture, it is highly encouraged that the project's logo as well as the European Commission logo are also visible. According to the guidelines of the Commission, the project's hashtag should be used together with the official hashtag of the funding program: #CEFTelecom.

Additionally, INEA has an online presence on Twitter: @inea_EU and Linkedin. Thus, when posting dissemination messages on Geo-harmonizer it is highly recommended that INEA should be also tagged.

When preparing written documents, such as training materials, slides for conference presentation, technical reports etc. it is essential to use the templates provided.

Funding acknowledgment

It is stated in article II.7 Visibility of Union Funding of the CEF Grant Agreement that "any communication or publication related to the action, made by the beneficiaries jointly or individually, including at conferences, seminars or in any information or promotional materials (such as brochures, leaflets, posters, presentations, etc.), shall indicate that the action has received funding from the Union and shall display the European Union emblem."

According to the official website[1], the correct acknowledgment of the funding agency is by displaying the EU emblem followed by 'Co-financed by the Connecting Europe Facility of the European Union'. Additionally, every time the EU logo is used, this disclaimer should be also visible "The contents of this publication are the sole responsibility of (name of the implementing partner) and do not necessarily reflect the opinion of the European Union.".

[1] https://ec.europa.eu/inea/en/connecting-europe-facility/cef-energy/beneficiaries-info-point/publicity-guidelines-logos last accessed 3rd of June

Recommended acknowledgement: *"This work has received funding from the European Union's the Innovation and Networks Executive Agency (INEA) under Grant Agreement Connecting Europe Facility (CEF) Telecom project 2018-EU-IA-0095."*

Logo and project visual elements

The Geo-harmonizer logo is:

All variations are available on the planning Gitlab repository - issue #130.

https://gitlab.com/geoharmonizer_inea/planning/-/issues/130#note_369746856

The official EU emblems to be used as an acknowledgement of the EU funding are given below in figure 1.

Co-financed by the Connecting Europe Facility of the European Union

Co-financed by the Connecting Europe Facility of the European Union

Figure 1. EU official emblems, horizontal and square.

Preparation of the dissemination messages - roadmap

The Geo-harmonizer project is organized in 7 major activities that are broken down in specific tasks. Each task has a leader and one or more partners to see it through, with the responsibilities for each particular assignment divided among them. Given the structure of the project, not all tasks have results that can be of interest for a target group, just as it is possible that a particular assignment

from within a task to be of interest and therefore, a dissemination message can be written and sent out.

For coordinated dissemination messages preparation and posting, the Geo-harmonizer team will use https://planable.io/.

Any partner involved in a task and working to obtain a specific result can draft a related dissemination message, however the text must be approved by the task leader before sending it out. **It is very important that prior to any dissemination of any results, these are already published on the Geo-harmonizer website (or a blog entry has been written on the website, if the actual results are published somewhere else, such as code in gitlab or a paper in a scientific journal).**

Table 2 compiles Geo-harmonizer partners' social media accounts to be used in recirculating project's messages:

Partner name	**Social media network**	**Account**	**Person/company**
Terrasigna	Twitter	https://twitter.com/TERRASIGNA	Company
Terrasigna	Linkedin	https://www.linkedin.com/company/terrasigna/	Company
Terrasigna	Facebook	https://www.facebook.com/TERRASIGNA/	Company
Terrasigna	Twitter	https://twitter.com/Codrinal	Codrina Ilie
Terrasigna	ResearchGate	https://www.researchgate.net/profile/Codrina_Ilie	Codrina Ilie
Terrasigna	Linkedin	https://www.linkedin.com/in/iliecodrinamaria/	Codrina Ilie
Terrasigna	Twitter	https://twitter.com/vcraciunescu	Vasile Crăciunescu
Terrasigna	ResearchGate	https://www.researchgate.net/profile/Vasile_Craciunescu	Vasile Crăciunescu
Terrasigna	Linkedin	https://www.linkedin.com/in/vasilecraciunescu/	Vasile Crăciunescu
mundialis	Twitter	https://twitter.com/MundialisInfo	Company
mundialis	Linkedin	https://www.linkedin.com/company/10446572/	Company
mundialis	Twitter	https://twitter.com/MarkusNeteler/	Markus Neteler
mundialis	ResearchGate	https://www.researchgate.net/profile/Markus_Neteler	Markus Neteler
mundialis	Linkedin	https://www.linkedin.com/in/m	Markus Neteler

		arkusneteler/	
OpenGeoHub	Twitter	https://twitter.com/opengeohub	Tomislav Hengl
OpenGeoHub	Youtube	https://www.youtube.com/c/OpenGeoHubFoundation	Tomislav Hengl

Dissemination activities

Geo-harmonizer website

The Geo-harmonizer web page - available at https://www.opendatascience.eu/ - represents the main source for any kind of information regarding the project, ranging from activities accomplished, progress meetings updates, workshops to public deliverables, map products and tools developed[2]. Thus, all communications, irrespective of the channel used, will lead back to the website. This strategy will allow the project team to perform a robust monitoring activity followed by an assessment of various aspects that will be detailed further on, such as the number of unique visitors, number of returning visitors, most popular map products, most read blogpost, most watched video etc.

According to the Consortium Collaboration Agreement, the website will be populated and maintained by the project leaders, CVUT and OpenGeoHub. The content will be provided by all members of the consortium, specifically but the task leaders. If, given some specific requirements, a result is published in another environment, e.g. the code developed or articles published in scientific journals, then they will also be signaled on the website in relevant sections.

The structure of the website has been outlined to allow a potential user an easy, fast, intuitive navigation through all the information and datasets available (figure 3).

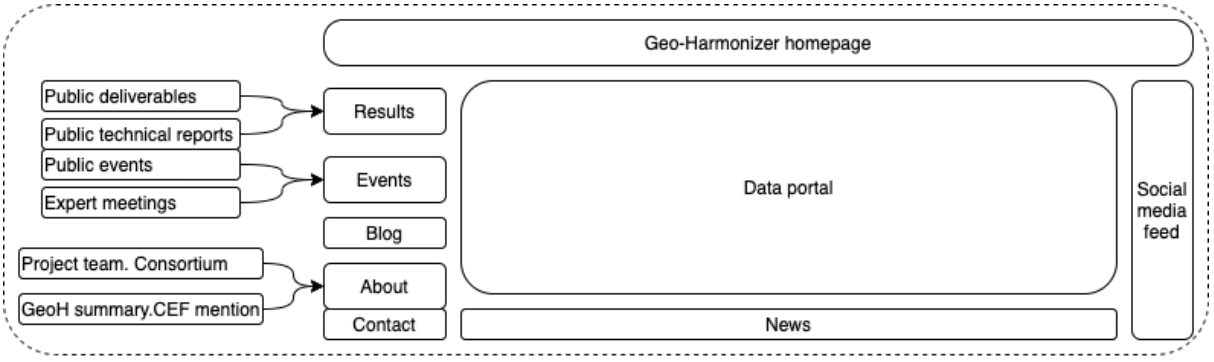

Figure 3. Geo-harmonizer website conceptual structure

According to the EU guidelines for the funding program visibility, it is mandatory that on the website and the social media accounts, the logo - depending which fits better from the 2 options presented in figure 1 - is:

- Same place on every page;

[2] The web page will contain the link to the Gitlab repository.

- Ideally as part of the website frame which appears on all sections;
- Landing or intro page (social media).

The disclaimer should also appear on the homepage: “The contents of this publication are the sole responsibility of (name of the implementing partner) and do not necessarily reflect the opinion of the European Union. ”

According to the Consortium Collaboration Agreement, OpenGeoHub will organize and finance hosting of all data products and services produced in this project, at least for the back-up copy, for up to 5 years from the end of the project (June 2027).

Geo-harmonizer publication of data

Recommended workflow for publishing data products is:

1. Publish code on https://gitlab.com/geoharmonizer_inea/
2. Provide a copy of layers with a disclaimer on zenodo.org (with DOI),
3. Provide an article on opendatascience.eu,
4. Collect feedback using gitlab, revise and update,
5. Publish the final version of data via the Geo-harmonizer data portal.

Example of data publication:

- Data-set: https://doi.org/10.5281/zenodo.4058225
- Blog article: https://opendatascience.eu/benchmark-dataset-mapping-land-cover-europe
- Gitlab repository: https://gitlab.com/geoharmonizer_inea/eumap

Geo-harmonizer planned events

The Geo-harmonizer events are divided into 2 main types:

- Expert meetings - progress meetings
- Public (open) events - Geo-harmonizer trainings, workshops and coding sessions.

Both types of events have been foreseen in the project’s implementation plan and budgeted in time and financially accordingly. However, during the development of the Geo-harmonizer, the COVID-19 pandemic hit Europe, starting in January 2020, leading to extreme changes in all aspects of life. Most European countries went into lockdown for several months, with all activities reduced to a minimum, including cancelation of conferences and international travel mostly banned. At the time of drafting this document, European countries have started to relax restrictions regarding the COVID-19 pandemic, however there is no clear indication of when international travel will be a valid option for the consortium members to meet face to face. This situation has not yet had a major effect on the development of the Geo-harmonizer, as expert meetings have successfully moved into an online environment.

Expert meetings

Given the project’s length in time, the location of partners and the complexity of the activities, it is important for the consortium, all members or only the ones involved in a specific task/activity to meet

regularly. Therefore, each month an expert meeting takes place in a virtual environment (Google Hangouts) for discussing technical matters. These meetings are of no particular interest for any target group of the Geo-harmonizer, thus there will be no specific dissemination activity related to them. However, if there is interest from a partner to disseminate a message, it can do so with the approval of the task leader.
Partners meet face to face each 6-8 months for 2 days progress meeting, where technical as well as administrative matters are discussed and decided upon. For documentation purposes, during these types of meetings pictures are taken and dissemination messages can also be sent out with the main purpose of gaining traction on the Geo-harmonizer social accounts.

Public events

The public events categories includes 2 main types: the one organized under the umbrella of the Geo-harmonizer project, such as the coding-days workshops and the second one is represented by events where consortium partners are attending and presenting results obtained in the Geo-harmonizer. Each of the 2 types of events must have vast coverage within the social media presence. **The responsible partner of preparing the dissemination messages is the one leading the activities** - in case of workshops and training materials - or presenting the results at a conference, as they have immediate access to the materials, news, photos to be disseminated.

During the public events, Geo-harmonizer visual branding elements such as the project logo, EU emblem, disclaimer must be very well highlighted. With respect to the funding program acknowledgement, the EU guidelines indicate the placement of their logo as follows:

- for brochure, information leaflet, factsheet, newsletter, poster:
    - bottom right corner of publication
    - front or back cover
    - on white background (unless placed on a large photo or illustration as on a poster)
- for slides/graphical presentations
    - first or last slide of a presentation or in the footer of each slide
- for video and animation
    - Intro or closing screenshot

Within the Geo-harmonizer project implementation, there are 4 public events planned over the course of 2021 and 2022: 2 dedicated to developers - code days - and 2 dedicated to non-developers aimed to accustom potential users with the Geo-harmonizer results - map products, as well as software package developed - these will most probably be done through online videos. Both types of events represent strong dissemination efforts of the Geo-harmonizer consortium and will be treated as such, respecting all guidelines of branding from the EU funding program to intense use of social media accounts to spread the word on the activities unfolding. Additionally, these events will be well documented and made visible on the website, on the Events*/Public events* page.

Participation at international conferences is also included in the public events category. The slides/videos presented will have all the visibility guidelines of the funding program and of the project (logos, disclaimer) and will be published on the Events*/Public events* page. **When preparing/participating in an international event, the partner is highly encouraged to disseminate messages using the project's social media accounts.**

The following international conferences have been targeted by the Geo-harmonizer consortium, with respect to several factors such as: topics of interest, target audience, date, costs, number of participants etc. :

- Phi Week 2021 - is one of the main events of the year dedicated to Earth Observation technology and data in Europe. It is organized by the European Space Agency and it takes place on ESRIN premises, Frascati, Italy during one week. There are several parallel tracks, with topics that cover everything from EO scientific achievements to operational success stories in a variety of domains, from urban sprawl to coastal management, to disaster response etc. The event is organized in such a manner that it allows a multitude of formats - talks, workshops, roundtables, startup pitch, hackathons - making it perfect for dissemination of Geo-harmonizer results and engaging with potential users.
- FOSS4G Europe 2021 - Free and Open Source Software for Geospatial conference - FOSS4G is the most well-known international event dedicated to open source geospatial software, with a tradition of over a decade. Although in the beginning it was dedicated almost exclusively to developers, in the last years the topics have widened to also include use cases and applications, education and research and transition to open source geospatial software. General themes vary from software status to standards, from remote sensing to IoT trends. FOSS4G conferences are organized under the auspices of OSGeo - the Open Source Geospatial Foundation - by local organizing committees. FOSS4G Europe represents the regional European event and in 2021 it will be organized by the Latvian geospatial community in Valmiera. Considering the topic of the Geo-harmonizer - including using the name FOSS4G in the title - it is mandatory that the results of the project be presented at at least one FOSS4G conference. Given that the geographical converge in the Geo-harmonizer is Europe, the European dedicated event is the sensible choice. However, given the innovative developments within the project, if resources allow it, partners can also consider disseminating the results at the global FOSS4G 2021.
- EGU 2022 - the General Assembly of the European Geoscience Union is the largest European event dedicated to Geosciences, attracting more than 15k participants every year in Vienna, Austria. Thus, sharing the results of Geo-harmonizer at EGU is an important aspect of the dissemination activities.

The above list is not exhaustive, yet it represents the main targeted events for partners in the Geo-harmonizer to participate in. As these activities are highly important for the dissemination strategy, all partners involved must share via the social media accounts of the project (and then re-circulated as detailed in Communication channels) their activities. It is also highly recommended that after participation, a short blogpost (posible on Medium) is written and published on the dedicated section on the webpage.

Reporting on the impact of the dissemination activities

The guidelines for disseminating the Geo-harmonizer results envisioned in this document are not set in stone. The scope is for the consortium to have a harmonized understanding regarding the external communication, as well as to support from the beginning a consistent manner in sharing the results achieved.

Given the length of the project, improvements of this strategy are possible. Yet, in order to understand what amendments should be considered for better dissemination results, a careful analysis on the impact must be conducted throughout the project.

Several different methods will be used differentiated by type of communication, to assess the success of the dissemination activities. For the website - the main channel of dissemination- Google Analytics will be used on a regular basis to extract various metrics, such as total number of users per

reporting period, new vs returning visitors, popular web pages, average time on page, sources of visits (Twitter, Linkedin, ResearchGate, organic search).

With respect to social media accounts, the following information will be provided, but it is not limited to:

- Twitter - number of Tweets posted, total engagements - extraction of the first 3 most popular tweets, engagement rate (the number of engagements divided by the number of impressions= times people were served a Tweet in their timeline or search results), number of new followers;
- Linkedin - number of texts posted, number of new page likes in the reporting period;
- ResearchGate - number of followers, number of recommendations, number of reads

All the information mentioned above will be aggregated for every 3 months and included into a report, thus presenting the consortium a clear view on the results of the dissemination activities and, consequently, on the dissemination strategy. In order for the consortium to decide if and where the strategy needs to be improved, the reports will be compared to a set of reference KPI (key performance indicator), as follows:

Website	- Minimum 150 visits per month - 40% of visitors spending more than 1 minute on the website - 25% returning visitors - Visits from all countries included in the Geo-harmonizer project region.
Social media accounts	- Minimum 100 follower on Twitter, Linkedin, ResearchGate - Minimum 12 posts each reporting period
Conference participation	- Minimum 3 talks at 3 international events, during the project
Workshops, on	- 2 online video tutorials dedicated to non-developers aimed to accustom potential users with the Geo-harmonizer results - at least 50 views each - 2 coding - days event (dedicated to developers) of one week each - at least 20 participants
Peer-reviewed papers	- Minimum 2 papers published (or accepted) in peer-reviewed journals

References

Carrada, Giovanni. 2006. *Communicating Science: Infrastructure, Human Resources, International Cooperation, Research and Development, Environment and Health, Societal Issues, Industrial Innovation; a Scientist's Survival Kit*. Office for Official Publications of the European Communities.