CAPSELLA

COLLECTIVE AWARENESS PLATFORMS FOR ENVIRONMENTALLY-SOUND LAND MANAGEMENT BASED ON DATA TECHNOLOGIES AND AGROBIODIVERSITY

Deliverable 3.2

Cartography of communities and networks

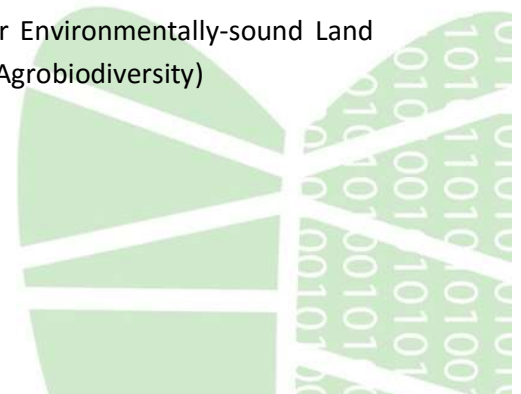|	
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Version History

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Executive Summary

The first release of the CAPSELLA map is online at http://www.capsella.eu/map/ since 22 July 2016. This map shows the European networks and organisations working on agrobiodiversity conservation and use, and the promotion, implementation and adoption of agro-ecological practices in European agriculture. In its first release, the map gathers a subset of 64 single organisations and/or networks, active at different levels across the food chain and addressing the common issues of agrobiodiversity-linked sustainability from different perspectives. The first release of the map will be used to attract other communities; the map will be further enriched thanks to the possibility networks and organisations will have to self-register and provide any relevant information. This map will be used to enhance awareness of the wider public on current efforts occurring in Europe towards a more sustainable agro-food sector.

Contents

List of Figures

List of Tables

1. Introduction

The project CAPSELLA aims at raising awareness about the conservation and management of agro-biodiversity, and the development and application of ecologically-based practices in agriculture. In order to achieve this aim, CAPSELLA needs to provide visibility to the collective knowledge already existing in our continent. In particular, the objective is to gather information about the networks and organisations, either formal (with a legally recognised status) or informal (constituted by the relationships among the members without a legal status), that actively study and/or use and/or promote agrobiodiversity and agroecological principles. In this respect, the European picture is rich but highly fragmented. Information about the number of active actors, their operation perspectives and the interactions among them is not consistent or readily available.

The cartography activity in CAPSELLA aims to visualise networks and organisations currently active in Europe in the domain of biodiversity-based agriculture.

With this document, we present the methodology for sharing information on the networks and organisations in an online map. We present the mapping and visualisation solutions selected and the plan for continuously enriching and updating the content of the map.

2. Communities' cartography: an online map of the entities engaged in agrobiodiversity in Europe

We chose an online map as a tool to demonstrate the output of the cartography activity planned in the project (Task 3.1). We decided to build the map using open libraries for map visualisation, such as Leaflet[1] and OpenStreetMap[2]. All entries are stored in CiviCRM[3] and the remote web forms are developed using Drupal[4].

We customised the map in order to visualise the number of networks/organisations by area and, when zooming in, to get a marker for the location for each of them. Information about the website of the network/organisation and the thematic area of interest is then visible at each marker (Figure 2-1).

Figure 2-1 Snapshot of the first release of the map (blue for organisations, orange for networks)

For each entry, we recorded a set of details that allowed us to place, describe and group the entries (Table 1).

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[1] http://leafletjs.com/

[2] https://www.openstreetmap.org/

[3] https://civicrm.org/

[4] https://www.drupal.org/

Table 1 Information collected for each entry on the online map

Field	Content
Name of network/organisation	Name of network/organisation
Address	Address of the headquarters
Logo	Logo
Type	Type of network/organisation. Options: Association Certification body Collaborative venture Company Educational provider European coordination Farmers association Farmers informal group Farmers union Foundation Governmental or Inter-Governmental organisation Informal association Library or information centre Non-Governmental Organisation Non-profit organisation Online Platform Online repository Pilot farm Producers consortium Professional association Seed/breed saver organisation Solidarity organisation Umbrella organisation University Research centre Research group Website Other

Thematic Area(s)	Thematic area(s) for the network/organisation. Options: Agricultural machineries Agricultural inputs provider/producer Agroecology Agroforestry Animal husbandry Crop breeding Dissemination Ecological intensification Environmental protection Farming Field crops Food certification Food marketing/ Food quality promotion Food processing Fruit trees Genetic diversity Greenhouse crops Herbs/spices Hotel/hospitality Local food traditions conservation Organic agriculture Restaurant Retail Seed saving Seeds certification Seeds distribution Seeds production Seeds storage Smallholder farming Specialized media Technical assistance/Extension service Vegetable crops Other
Macro-category	Movement Practice Science

Position in the food chain*	Seed
	Field
	Food
Online presence	Website
	Facebook
	Twitter
	Other online presence
Contact person	Name and e-mail of the person who is entitled to edit the content

*Correspondence between the network/organisation's main activity and one of the three scenarios foreseen in CAPSELLA.

2.1. Type and Thematic area(s) options

Each network/organisation was registered selecting one or more of the options in the fields "Type" and "Thematic area(s)" (Table 1). The options for the field "Type" were chosen according to the descriptions found online for each network/organisation. For the online registration form, other common possibilities in the agro-food domain were added. The "Thematic area(s)" field was built for having information about the principal activities of the network/organisation. In the list of options we provide the possibility to share information about the main operating sector (e.g. farming, environmental protection, dissemination, etc.), as well as the sectors dealing with farming and food production which represent the main focus of CAPSELLA. When registering a new network/organisation on the map, users are able to select more than one options in both fields. For both fields, it is also allowed to choose the option "other".

The list of options for the fields "Type" and "Thematic area(s)" in the online map registration form are congruent with the same fields required for the online survey conducted in the project Task 3.2[5].

2.2. Entries position in the food chain

The challenge of directing the agro-food system towards sustainability includes activities at different levels across the food chain. In order to show this diversity on the map, we decided to group the networks/organisations according to their principal field of activity. The defined grouping tags are consistent with the three scenarios of CAPSELLA. Indeed, each entry is categorised with one or more of the tags:

(i) "**seed**" the networks/organisations with main activity concerning on-farm genetic diversity conservation and management;

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[5] http://www.capsella.eu/survey/

(ii) "**field**" the networks/organisations working on ecological intensification and functional agrobiodiversity in cropping systems;

(iii) "**food**" the networks/organisations operating at level of transformation, distribution and consumption of food products.

2.3. Entries knowledge asset representation

The efforts to study, apply and promote the use of ecological principles in agriculture in order to increase the sustainability of agroecosystems come simultaneously from academics, farmers and activists. In order to identify the different contributors we grouped the networks/organisations according to their knowledge assets on:

(i) "**science**" for networks/organisations belonging to formal research structures;

(ii) "**practice**" for networks/organisations that embed local knowledge and practical experience of farmers;

(iii) "**movement**" for the networks/organisations active in political advocacy and raising social awareness.

2.4. Relationships among the entries

Active communities in Europe can be interconnected with one another in several ways, irrespectively of their role in the food chain or their main focus. The relationships among these communities are dynamic and often very complex. Being unable to represent all the complexity of these relationships on the map we decided to group the entries in:

(i) "**organisations**" representing aggregations of single individuals;

(ii) "**networks**" representing aggregations of organisations.

This grouping allows for identification of the first level of relationship among the communities. We can track which single organisations belong in a broader network, define clusters, and identify those which are isolated.

2.5. Content of the first release

We released the first version of the map on the CAPSELLA website on 22 July 2016 with 64 entries, of which 24 networks and 42 organisations. The dataset for the first release is composed of networks/organisations known to the project partners or detectable with *Google* search engine using the keywords "agroecology network" OR "organisation" OR "association" and "agrobiodiversity network" OR "organisation" OR "association" for each European country. The search was done in English.

Looking at the knowledge asset of the entries presented in the first release we have 28 entries grouped under "movement", 22 under "practice" and 16 under "science".

According to the position of the main activity in the food chain, we have 37 entries in the group "field", 18 in "seed" and 16 in "food".

The networks/organisations selected for the first release have access rights, via the contact e-mail, to edit/delete functions in order to be able to edit their details on the map. The current version includes only publicly available information and, thus, raises no privacy related issues. For any other additional information (such as contact person, email and phone number) the network representative will be contacted, so that he/she is informed and provides his/her consent. Networks and organisations that use the self-registration facility will be informed at the beginning of the procedure and prompt to click the agreement statement.

The collected information about the thematic area(s) can be used to visualise the occurrence of each theme and the links derived by the themes being covered together. A preliminary network analysis (Figure 2-2) was conducted using R environment for statistical computing (R/igraph). Dots identify the themes, the width of each dot's label indicates how often a theme is present in the dataset and the width of the arrows how often two themes occur together. The picture in Figure 2-2 is obviously biased by the higher presence of networks/organisations in the group "field" in our provisory dataset. Some of the themes are never addressed in combination with others in our data set, indicating that it is likely those themes are treated by specialised communities. Here we show this type of analysis to demonstrate how the complete dataset could be processed, and not for deriving conclusions about the communities in the target domain. Indeed, it will be interesting to repeat the same analysis at the end of the project, once the map will be enriched through self-registrations and compilation by more entities.
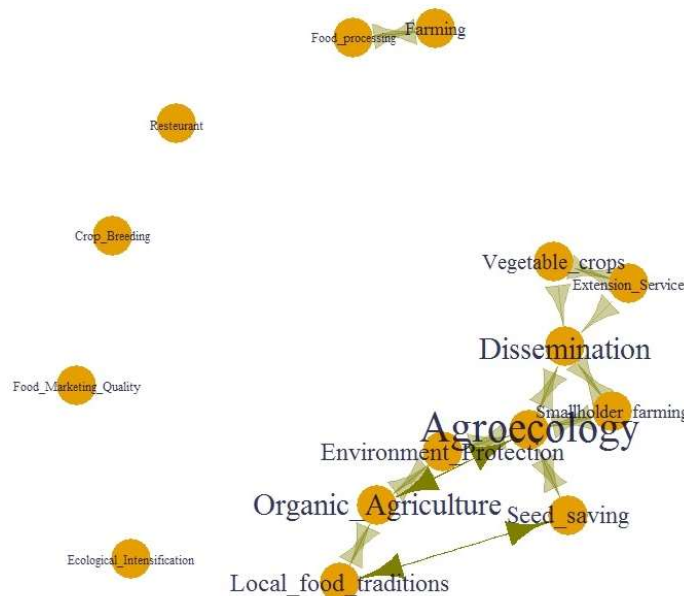

Figure 2-2 Plot of the network analysis for the thematic areas of the entries registered in the first release of the online map.

Likewise, it is interesting to plot the relationship among macro-category and position in the food chain in the whole dataset as shown in Figure 2-3 for currently registered entries in the first release

of the map. The proportion of entries corresponding to the "seed", "field" and "food" scenarios are reported on the y axis. The x axis represents the grouping of the contributors and the related knowledge assets.
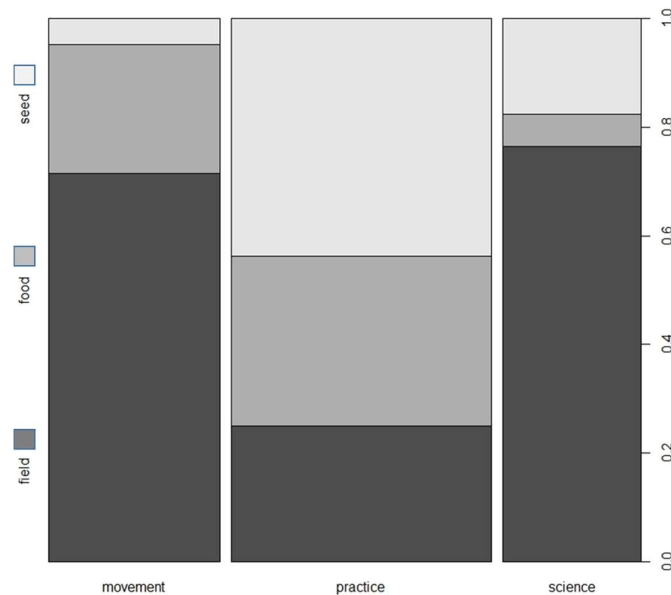

Figure 2-3 Spine plot representing the relationship between macro-category (x axis) and position in the food chain (y axis).

Once the dataset will be more comprehensive, it will also be possible to investigate the relationship between the thematic areas, the position in the food chain, and the knowledge asset group of the entries. This first release is obviously not complete and hence we do not intend to describe the communities in the targeted domain just based on these data. This first version of the map may be considered as a starting point for enriching and improving it further in a collaborative way.

2.6. Enrichment and improvement of the map

The cartography activity in CAPSELLA is intended as an ongoing activity throughout the duration of the project, and possibly beyond it. We published a registration service on the website along with the map. This will offer opportunities for new networks and organisations to sign-up and fill in their information. We will promote this sign-up process through various dissemination activities and tools and ask the contact persons of each network/organisation presented on the map, to share this information with their contacts.

Additionally, contacts have been established with the coordinator of the project "Preparatory action – EU plant and animal genetic resources" in order to integrate data in the CAPSELLA map from entries presented on the genetic resources map[6]. This integration of content across "Initiatives" will occur in November 2016, and it is intended to strengthen the visibility of both maps through cross-citation.

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[6] Available at http://www.geneticresources.eu/map/

Furthermore, collaboration will be sought with the newly established association Agroecology Europe[7] , in order to enrich the cartography data. It was agreed that the website of CAPSELLA will echo the goals and activities of Agroecology Europe and vice-versa. Agroecology Europe's website will provide a link to access the community/network map generated in CAPSELLA.

Registration and visualisation European communities on our map, will allow them to get in touch with the planned activities of CAPSELLA. This mapping activity, coupled by the survey for collecting community requirements and needs, are the two main online tools produced for engaging actors external to the project consortium in CAPSELLA.

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[7] www.agroecology-europe.org: website presently under construction

3. Perspectives

The online map of CAPSELLA will give visibility to European communities active on the use and conservation of agrobiodiversity and on the implementation of ecologically-based practices in agriculture. The CAPSELLA consortium will use this map for raising awareness about the current efforts on these themes in the broader public and as an instrument to connect the public with this community action. The map will also be a tool for individual organisations to interact with broader networks. The networks/organisations included in the map will be informed about participative activities (eg. workshops) organised by CAPSELLA and will be able to deepen their involvement in the project. Finally, the map will be used as a tool for fostering interaction between CAPSELLA, ongoing projects and Europe-wide associations.