



D4.1

FoodMetres

Common Operational Data Protocol

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Contents

1. Introduction	3
2. Importance of the case study	3
3. Conceptual Framework	4
4. Methodology	5
5. Results and Discussion for the Data lists	7
6. Data and Documents Inventory	8
6.1 Case study data inventory.....	8
6.2 FOODMETRES Data Repository: Instructions For Use	8
7. Conclusions	10
References	11
ANNEX 1: Optimised data list for the FOODMETRES project	12

1. Introduction

Good and reliable information and data sets are one of the most important conditions for good research. How to manage this data and results from the project is crucial for the smooth project running. The aim of the Common Operational Data Protocol (CODP) has been defined in the Description of work as follows: »CODP intends to bring protocols of data retrieval and transfer into the Data Base. CODP will be elaborated by WP4 coordinator for the case study research based on a framework prepared in WP1. Consistent exchanging protocols for data retrieval and transfer will be prepared for the Case Study (CS) research teams. The CODP will need (1) to provide input to the development of a Conceptual Framework and Innovation Targets for LAS and MAS as input to WP1 and WP3,(2) to examine the socio-economic benefits of urban farming beyond the provision of local food and the specific positive and negative externalities that the urban farms are bringing to their metropolitan areas (input to WP2), (4) input on local and regional food chains with regard to supply and demand, technologies, logistics and other organisational issues (input to WP3), (5) data that allow impact assessment regarding the natural resources (land, soil, water) and other natural characteristics (e.g. climate), as input to WP5.«

The main aim of this report is to describe how the relevant data collected in the project has been defined, as well as the procedure for maintaining this data and the results of the project. The procedures for defining Common Operational Data Protocol (CODP) and Data and Results Inventory (DDI) are described in the following section. The CODP and the DDI are task 4.1 and task 4.2 as they are labeled in the Description of Work (DOW), respectively.

2. Importance of the case study

Six metropolitan regions are involved in the FOODMETRES project as case studies: Rotterdam (The Netherlands), London (United Kingdom), Berlin (Germany), Milano (Italy), Ljubljana (Slovenia), and Nairobi (Kenya). Criteria for case study selection are as follows: different pathways, different European countries from different EU regions and one developing country (Kenya): mutual learning goals, data availability, best practices.

The selected case studies play possibly the most complex role in the research procedure, which means that the case studies:

- enable us to understand complex issues and relations (Flyvbjerg, 2006) in rural or rural-urban areas where landscape is simultaneously in a role of a state and a driver according to the Driving forces-Pressures-State-Impacts-Responses (DPSIR) approach.
- are a platform that enables interplay between theory, method and empirical phenomena (Dubois and Gibbert, 2010) and they are a tool to transfer complexity of the problem towards its transparency. A case study with a certain degree of complexity influences the relation between theory, empirical domain and method.

- enable us to apply an integrated research approach, which combines different research methods (e.g. existing data with information from interviews), to involve multiple stakeholders with conflicting interests, to integrate participatory planning and multiple criteria decision analysis, etc. (Nordström et al., 2010) and even to combine survey data with topographic data and soil maps (GIS) (Pfeifer et al., 2009).
- offer the basis for multidisciplinary research where the context dependent knowledge, and its multiple abundance of details, can be revealed (Flyvbjerg, 2006).
- enable us to shift from traditional top-down perspectives into a bottom-up and integrated approach involving participation of local stakeholders, which is the focus in landscape policy since the end of the last century (Sevenant and Antrop, 2010). With this we can identify public views on the concept of landscape and aspects of landscape character and change (Conrad et al., 2010).

Flyvbjerg (2006) has rejected five misunderstandings about case study research and one of those is that the case study is most useful for generating hypotheses and less suitable for hypotheses testing and theory building. According to this, Barratt (2010) also stated that there is an increasing trend toward using more qualitative case studies especially in the area of theory building.

In the FOODMETRES project, we have increased the scientific value of case studies (i.e. “generalizability”) by their strategic selection (Flyvbjerg, 2006) aiming to achieve the greatest possible amount of information on a given problem or phenomenon.

As the recent study of Barratt et al. (2010) has pointed out, there is a need to improve on offering sufficient details in research design, data collection and data analyses when engaged in qualitative case studies. This has been taken into consideration in the FOODMETRES project and special attention has been paid to developing Common Data Collection Protocol and Data and Documents Inventory.

In the project partner countries the case studies have been chosen according to the rule of “maximum variation cases” (Flyvbjerg, 2006). These case studies, chosen for their validity, will enable researchers in the FOODMETRES project to produce insight based knowledge (Flyvbjerg, 2006) on complex relations connected in the food chain supply.

The strength or weakness of the case study will depend on what kind of data we can collect from each and whether this data are comparable.

3. Conceptual Framework

Although the term data ‘collection protocol’ is often linked to the computer science (Sbai and Barakat, 2009) we try to implement it in case study data collection for the purpose of the project analyses. This means that the meaning of the expression is different to the way it is used in core computer science. For the FOODMETRES project the Common Data Collection Protocol means that the list of relevant data, which will be collected during the project will be defined quite at the beginning of the project

in a transparent procedure where researchers from all work packages and all case studies will be involved.

For all the analyses planned in the project it is very important that we know in advance whether the requested data are available in all the case studies. And on the other side the case study researchers have to know in advance, what data they intend to collect during the project.

4. Methodology

At the beginning of the project , the WP coordinators were asked for the planned research and methodologies (e.g. data collection, interviews) where involvement of the case studies has been expected.

As one of the first step, the CS leaders were asked to prepare a brief Case study Assessment where some basic characteristics of the case study were presented. Preparing the Case Study Assessment also served as a warm up process for the Case Study research teams.

The typical chapters in the mentioned Case Study Assessments are:

0. Background and city profile
1. Innovation perspectives (WP1)
2. Regional food planning (WP2)
3. Selection of commodities (WP3)
4. Urban gardening (WP4)
5. Scenarios and impact assessment (WP5)
6. Knowledge brokerage (WP6)
7. Case study team
8. Products for stakeholders

Then the Case Study leaders prepared general flyers about the FOODMETRES project in their national languages. For each Case study the flyer in their national language and in English has been prepared describing the characteristics of the case study in the frame of the FOODMETRES project. All the three flyers in each Case study serve for publicity of the FOODMETRES project. Electronic versions of the flyers were put in the data inventory of the project.

In order to determine the required data for the research the following steps have been performed:

- Leaders of WP3 and WP5 prepared lists of requested data from CS
- As both lists are quite long (for WP3 and WP5 approximately 60 and 100 pieces of data were requested, respectively) and some of requested data are the same in both lists, WP3 experts from FBR made a selection of key indicators for which Case Study leaders need to compile the relevant data in

their regions. The list of requested data from WP 2 was added to the list, as well.

- The final (reduced) list with 30 of requested data is presented in Annex 1.
- The list of requested data has been checked by each CS leader and potential data (non)availability in the case study has been defined. This has been performed by several iterative processes among the WP and the CS leaders (Figure 1) coordinated by WP4 leader. For the smooth iterative progress the process has gone through the Google table on line <https://docs.google.com/spreadsheet/ccc?key=0Av-PTKAO5xandDIPd01kczN2R25MRmtlcVhlazEydWc>
- Case study leaders will contribute data to Data and Results Inventory from where they will be available for further WPs use (Figure 2).

Collected data and information

the requested data for 5 – 8 food chains

planned research and methodologies
(data collection, interviews)

WPs coordinators

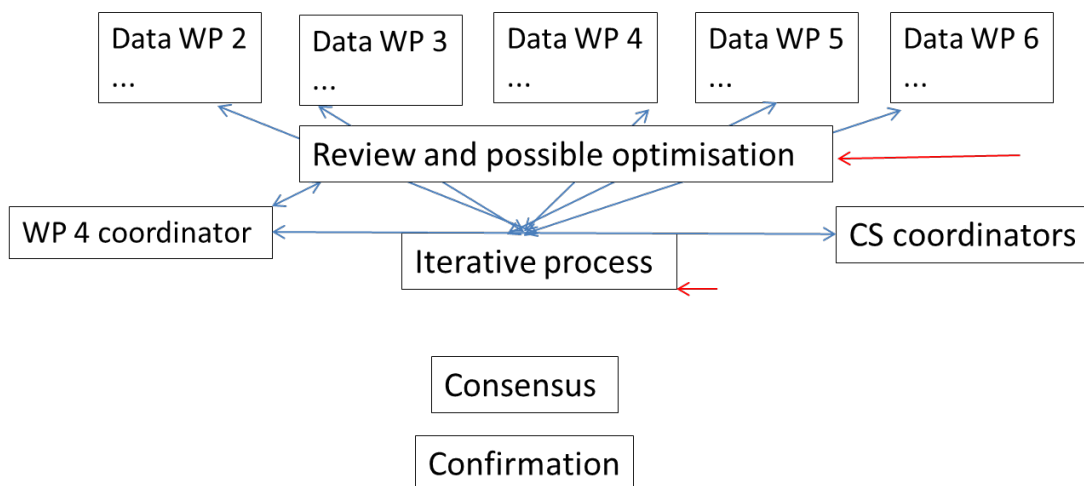


Figure 1. List of requested data from each CS were performed by several iterative processes among the WP and the SC leaders.

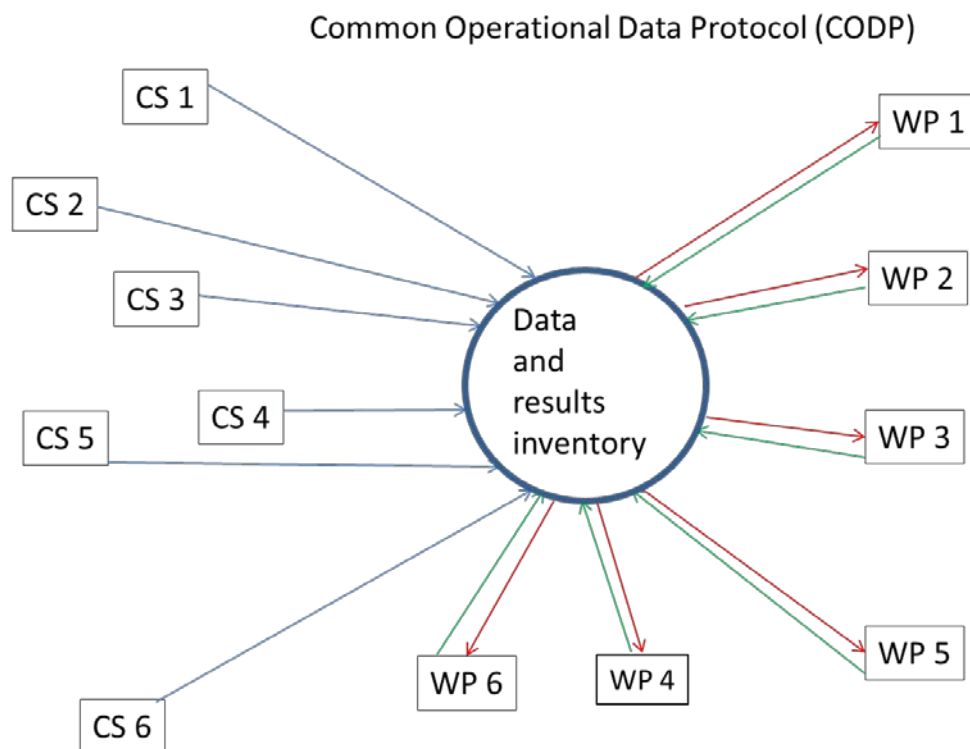


Figure 2. WPs prepared lists of requested data from CS. CSs contribute data to Data and Results inventory from where they are available for further WPs use

5. Results and Discussion for the Data lists

The list of 30 indicators is a result of compilation of the list of requested data for WP3 and WP5 (ANNEX 1). From these, 2 data are not requested by any of the WPs. This fact came out in the iterative process, when WP leaders were asked directly, which data from the list is really necessary for their research. These “non required” data in the ANNEX 3 are marked yellow.

Researchers from the Case Studies marked 10 data as not available in some of or any of the case studies. They are coloured magenta in the ANNEX 1. Two of the data on the list (i. e. exploitation level of employees and imitators/followers/adopters) are neither available in the Cases studies nor required by any of the WPs.

In the iterative process of the Common Operational Data Protocol we significantly reduced the list of requested data from the case studies for the FOODMETRES research process. We can assume that the first lists, which were made in advance, were too wide ranging and would pose too much work for the case study researchers. The iterative process with repeated questions about the necessity of certain data helped to reduce the requested work in the case studies.

6. Data and Documents Inventory

A data inventory was established in which all relevant information is stored and made accessible including data regarding the natural resources (land, soil, water) and other natural and socio-economic characteristics. Two options were considered when proposing the inventory system, briefly described in chapter 6.1.

6.1 Case study data inventory

Two options were proposed for the establishment of the CS data inventory:

1. The use of the online file sharing service, such as Dropbox. For example, if the Dropbox for Teams is chosen, we get 1000 GB of storage for 5 users and additional 200 GB for additional users. This option also includes unlimited version history and phone support. After users share files, any member is able to view, access and download uploaded items via internet or application. Estimated costs, according to pricing, are: 795 \$ per year for the first five users and 125 \$ per year for each additional user. If we are satisfied with less storage space and only one user, other, cheaper options are available.
2. A simple data exchange interface can be developed as a part of the project web site. Users will be able to upload files on the server. Established web interface will provide listings of uploaded files and the ability to download them. There is, however, an important issue with web hosting service, since they limit the size of the files that are to be transferred to the server (due to security reasons). Usually that size is between 10 and 20 MB. There is no such problem with Virtual Private Server (VPS) hosting solution, although the maximum recommended size is 100 MB (problems with connection drops, timeout). This option can be also good if there are just few files which are bigger, but below 500 MB. Estimated costs for the development of the data exchange interface range from 500 to 1.000 €. For simplest VPS hosting solution estimated costs are from 50€/month for leasing the server, 50€/month for administration and 500 € for installation and configuration of the server.

Due to the specificity of project partners needs, the first option was chosen for the implementation. It represents optimal compromise between the cost of implementation and maintenance and the needs of users. Established system should enable uploading and downloading of the data for the project purposes. Established FOODMETRES data repository is described in chapter 6.2.

6.2 FOODMETRES Data Repository: Instructions For Use

MediaFire (<http://www.mediafire.com>) was chosen as a storage service for the FOODMETRES project. MediaFire is a cloud storage service that helps people store, organize, and share data via the Internet. It offers simple graphical user interface to upload, manage and download the data. You can access the data repository on <http://data.foodmetres.eu>.

Documents can be browsed on the repository using a predefined user name and password, which is the same for all project partners. Documents can be browsed using a “Folders” menu on the left side. In this menu, all existing folders, files and documents are listed. Each folder can be entered as well as any additional subfolders. New folder, document, spreadsheet, presentation or text file can be created by clicking on the “Create” link, where you have to choose among different options. A folder or any other document can be deleted by clicking on it, holding the left mouse button and dropping it to the trash.

Uploading of the files can be done by simply dragging the file from the desktop to the web page or by clicking on the “Upload” link. If the “Upload” link is selected, new window appears, where the files to upload can be selected (the files can be dragged into the window or selected manually by clicking the “plus” sign on the bottom left corner). The maximum size of the file, that can be uploaded, is 1 GB. Total available size is 85 GB, which can be extended. All files are backed up.

Documents can be downloaded simply by selecting them and clicking “Download selected”. Specific items can be selected in the folder and after downloaded. The current settings also allow downloading of the whole folder. A file or folder can be shared to social networks or e-mail recipients by clicking the “Share folder” link. The search is enabled typing some keywords into the search bar.

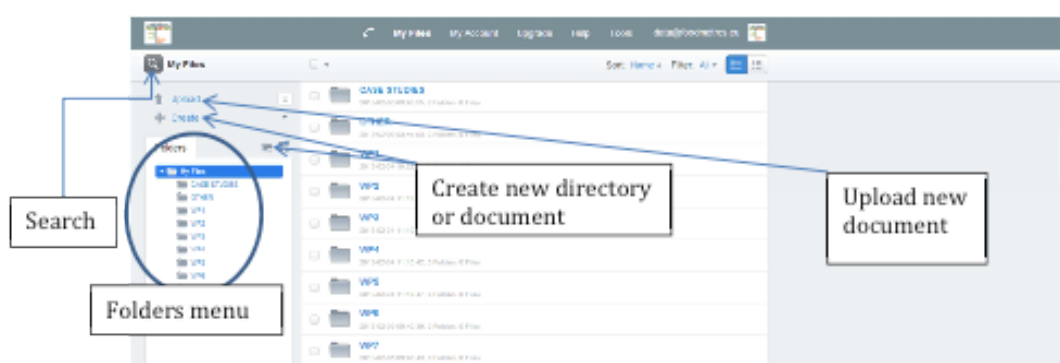


Figure 3: Graphical user interface of the established data repository system.

7. Conclusions

In the iterative process of the Common Operational Data Protocol we significantly reduced the list of requested data from the case studies for the FOODMETRES research process. We can assume that the first lists, which were made in advance, were too wide ranging and would pose too much work for the case study researchers. The iterative process, with repeated questions about the necessity of certain data helped to reduce the requested work in the case studies.

MediaFire (<http://www.mediafire.com>) was chosen as a storage service for the FOODMETRES project. The document management is very simple and thus user friendly. Both issues (Common Operational Data Protocol and Data Results Inventory) enable smoother and easier progress of the FOOD METRES project.

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ANNEX 1: Optimised data list for the FOODMETRES project

Topic	Indicator	Method of calculation
Farming system (types of production, yields, farm productivity, organic or conventional production)	Farming intensity	Matrix of classes of % of land cultivated for production and yield per cultivated land (t/ha)
	average size of farms	ha
	number of farms	n
	average number of livestock per farm	n
	Type of produced commodities	Descriptive e. g. Crops, organic, conventional
	Output of food and non-food crops	tonne, € (farmgate price)
	Water use	m ³ /t
	Energy use	MJ/t
Food safety	Occurrence of pathogens	cfu/g product
	Occurrence of chemical pollution (PAKs and heavy metals)	g/kg product
Food quality	Nutritional value	g micro and macro-nutrients/kg product
	Freshness experience	Scale of appreciation
	Shelf life	Best before date
Food chain elements	Type of market	Descriptive e.g.
	(Potential) Share of regional food on markets	Percentage/volumes/value
	(Potential) Market share in city for regional food	Percentage/volumes/value
	Distances from farm processor, retailer, geographical location, etc	km
	Total cost per chain actor and transport movement	€
	Prices at all levels/step of the chain	€
Instruments of policy to create or improve innovative agro-food chains	Existence of public plans and policy documents (e. G. Food policy, food plan/strategy)	Present and working?
	Regulations affecting food chains	Restricting or stimulating?
	Subsidies, funding programs for certain chain actors or groups	
	Transparency in trade between producers, processors, retailers and consumers	
	Use of labels	Number, clear, use in target market share
Ethics, knowledge generation	Animal welfare standards	5 star system
	Exploitation level of employees	0-5 scale
	Imitators/ followers/ adopters	number
Accessibility & Availability (social inclusion of chain actors?)	Availability of basic food, security, sovereignty, justice and equity of food consumption and decisions of local food actors	qualitative classification
	Accessible (geographic access, affordability)	
	Socially inclusive for all people in society	

Note:

-data not available in some or any of the case studies

-the data is not requested by any of the WP