



REPORT

On survey "Using data from the Copernicus program in
the context of landscape and spatial planning"
BULGARIA

PROJECT

2021-2-38. User Uptake of Copernicus Services for
Landscape and Spatial Planning Stakeholders

Prepared by Space Research and Technology Institute-
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I. GENERAL INFORMATION

The survey has been implemented referring project 2021-2-38., SGA#20 User Uptake of Copernicus Services for Landscape and Spatial Planning Stakeholders, financed by Framework Partnership Agreement for Copernicus User Uptake of the EU, Specific grant agreement SGA#20, 275/G/GRO/COPE/17/10042.

The aim of the survey is to gather information from end users and stakeholders of Earth Observation products and services in the context of Copernicus products and services in general and specific for Landscape and Spatial Planning topic in the framework of the above-mentioned project. The survey has been made during the period April-July 2024 and was sent as invitation to 5 ministries, Sofia municipality, 5 governmental agencies, 3 scientific organizations, 7 universities defined by SRTI-BAS like potential stakeholders. Other possible end-users like researchers, experts in private sector and freelancers that use or would like to use remotely-sensed data were also invited to fill in the survey online and in paper form.

II. RESULTS

The questionnaire contains 14 questions piled in introductory section, Knowledge of European, national, regional products section, Critical issues related to data availability section, Scale and units upon data use section, Increasing the knowledge about the Copernicus products and services section.

II.1. Questions for participants' introduction

We have included in the survey two introductory questions about sector engaging and the area of interest/work:

- Please select the sector in which you are engaged (check boxes)

Governmental sector
Non-governmental sector
Economy sector
Science- research sector
Others

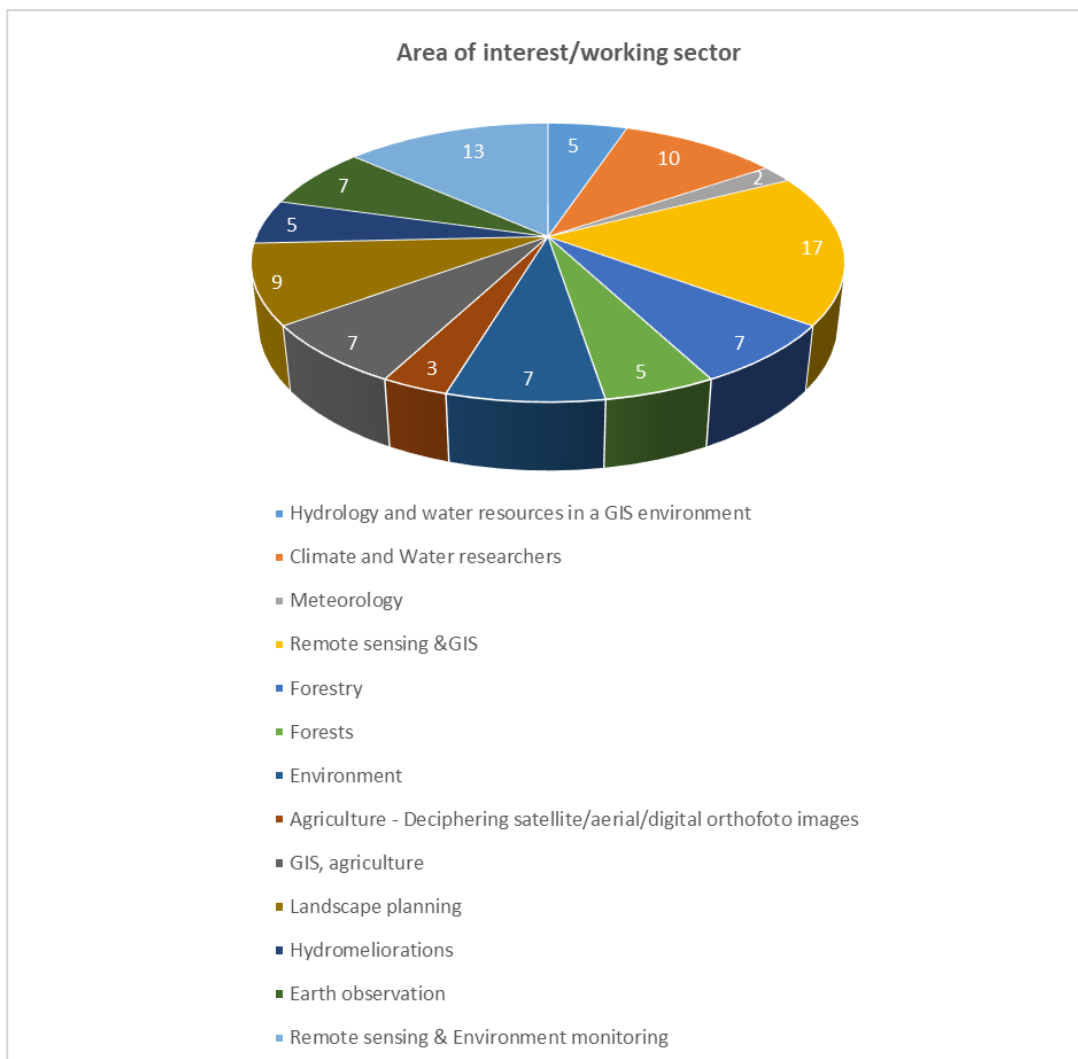
- Please define the area of interest/work/research – open question

We have received totally 97 answers distributed mainly among government institutions (15 answers) and others (non-governmental, freelancers, researchers) accounting 82 answers.

Table 1 Stakeholders'profile

	Sector	Participants number
1.	Governmental sector	15
2.	Non-governmental sector-	15
3.	Science/research sector	40
4.	Private sector	10
5.	Others(freelancers)	17
	Total	97

Figure 1. Stakeholders'area of interest



II.2 Knowledge of European, national, regional products

We have included 4 questions in this section like Q1 Which of the following European and national products do you know?; Q2 Which products do you use or you intend to use?; Q3 How do you use the data? And Q4 How would you rate your knowledge of Copernicus products??

The results for question (Q1) “Which of the following European and national products do you know?” and question (Q2) “Which products do you use or you intend to use?” are presented in the tables below.

Table 2. Participants' awareness on European and National Products

Products	Answers
Copernicus Land Monitoring Service: Global component(e.g Land Cover 100m)	41
Copernicus Land Monitoring Service: Pan-European component – Corine Land Cover and CLC+	25
Copernicus Land Monitoring Service: Pan-European component – High Resolution Layers (Imperviousness, Forest, Grassland, Water and Wetness)	40
Copernicus Land Monitoring Service: Local component – Urban Atlas	43
Copernicus Land Monitoring Service: Local component – Natura 2000	50
Copernicus Land Monitoring Service: Local component – Coastal Zones	21
Copernicus Land Monitoring Service: Local component– Riparian Zones	10
National land cover map	52
National land cover data on regional level	22
National land consumption map	39
country specific products (listed by partner)	28
Other	2

Table 3. European and National Products used or intended to be used

Products	Answers
Copernicus Land Monitoring Service: Global component(e.g Land Cover 100m)	47
Copernicus Land Monitoring Service: Pan-European component – Corine Land Cover and CLC+	33
Copernicus Land Monitoring Service: Pan-European component – High Resolution Layers (Imperviousness, Forest, Grassland, Water and Wetness)	28
Copernicus Land Monitoring Service: Local component – Urban Atlas	11
Copernicus Land Monitoring Service: Local component – Natura 2000	48
Copernicus Land Monitoring Service: Local component – Coastal Zones	20
Copernicus Land Monitoring Service: Local component– Riparian Zones	15
National land cover map	92
National land cover/consumption data on regional level	91
National land consumption map	34
country specific products (listed by partner)	71
Other	0

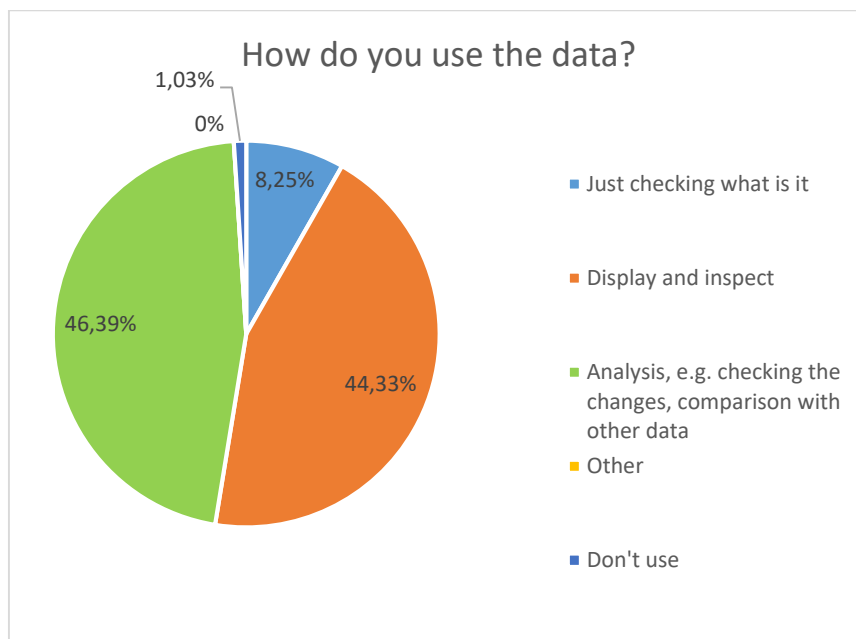
The participants have had the possibility to make a multiple choice. Concerning Q1 we can conclude that the highest score is allocated to “National land cover map”. We have received answers from 52 participants that are most aware of this product which corresponds to the highest score for Q2 where 92 participants defined that “National land cover map” is the most used product or intended to be used.

The participants also show a considerable awareness for Copernicus Land Monitoring Service: Local component – Natura 2000 by rating it on the second place with 50 answers and a very little knowledge for Copernicus Land Monitoring Service: Local component– Riparian Zones (10 answers). The high score of 91 answers for a product that the participants define as a “being used product” or intend to use this product is “National land cover/consumption data on regional level”. Our team suppose that the implementation and publicity of a FPCUP 2019-2-49” Developing support for monitoring and reporting of GHG emissions and removals from land use, land use change and forestry”. had an influence for selecting this product.

The participants also gave a good score for Copernicus Land Monitoring Service: Local component – Natura 2000.

Concerning Q3 the most common answer of the participants is “Analysis, e.g. checking the changes, comparison with other data” (45 answers), followed by 43 answers for the option “Display and inspect” and 8 answers for “Just checking for what it is”.

Figure 2.Data use

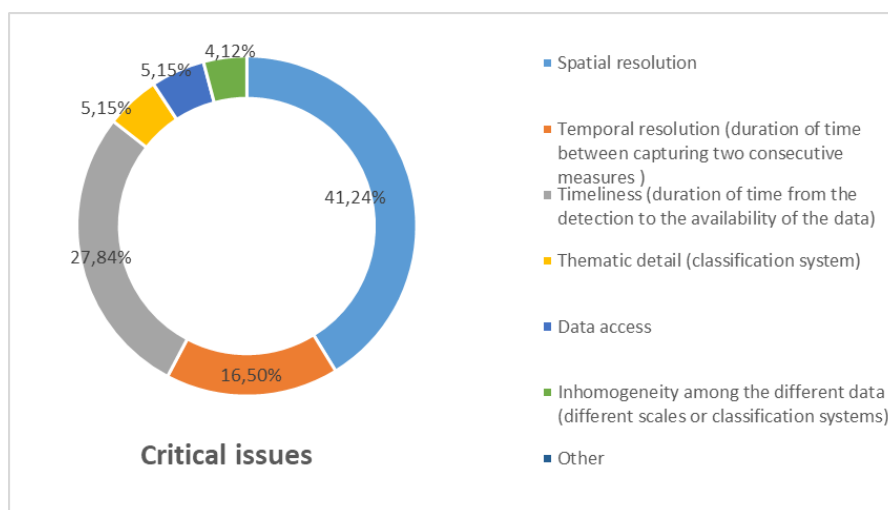


For Q4 we used the following 5-grade self -assessment, with 1 meaning “insufficient”, 2 – “poor”, 3- “good”, 4- “very good” and 5 “excellent”. Eighteen (18) from the participants defined their knowledge in Copernicus products as grade 4, 46 participants have average knowledge pointing grade 3, 26 participants define their knowledge as “poor”(grade) 2 and 7 think they have insufficient knowledge choosing grade 1.

II.3 Critical issues related to data availability

The participants were able to choose only one answer. The results show that spatial resolution has been defined as the most important issue to data availability for Bulgaria (40 participants). Around twenty seven percentage (27.83%) from the participants have defined “Timeliness” as the second important issue (27 answers) followed by “temporal resolution(16 answers). We have included asked the participants to give details on the option they have selected for Q:Which are the major issues related to data availability for your region?

Figure 3.Critical issues



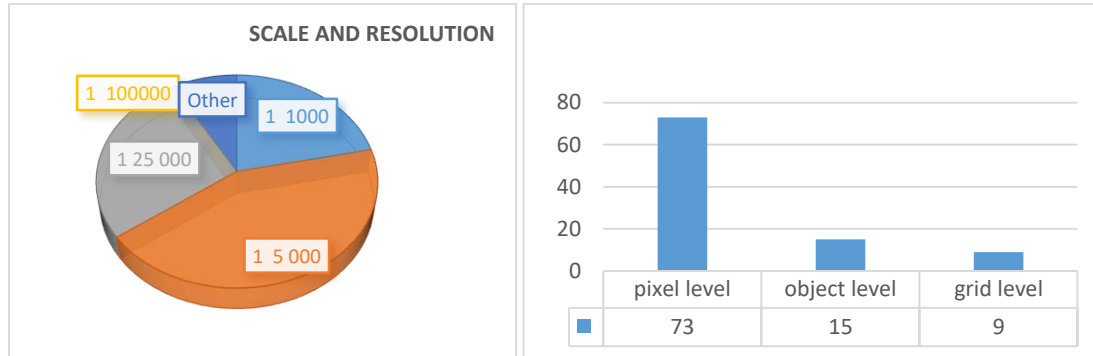
The number of the participants who submitted answer is 43. Among their answers we discovered that 10 participants declare the lack of regularity in COPERNICUS HRL data for separate years, 3 answers are “no comment”, not good resolution of the images that creates difficulties in data interpretation for forestry sector (7), not high enough/ good resolution (10), not all data are being updated (9) the resolution does not allow analyzing the information in details(5)

II.4 Scale and units upon data use

About the spatial resolution level (Figure 4), the stakeholders were asked ‘Which is the optimal scale or resolution for your work?’. Ninety-seven (97) answers were collected. More than 40% of

the stakeholders prefer the 1:5000 scale, while 1:1000 and 1:25.000 were chosen by the 21% of them and the 26% respectively. Pixel level is defined as the most used type of spatial reference level.

Figure 4. Scale and resolution



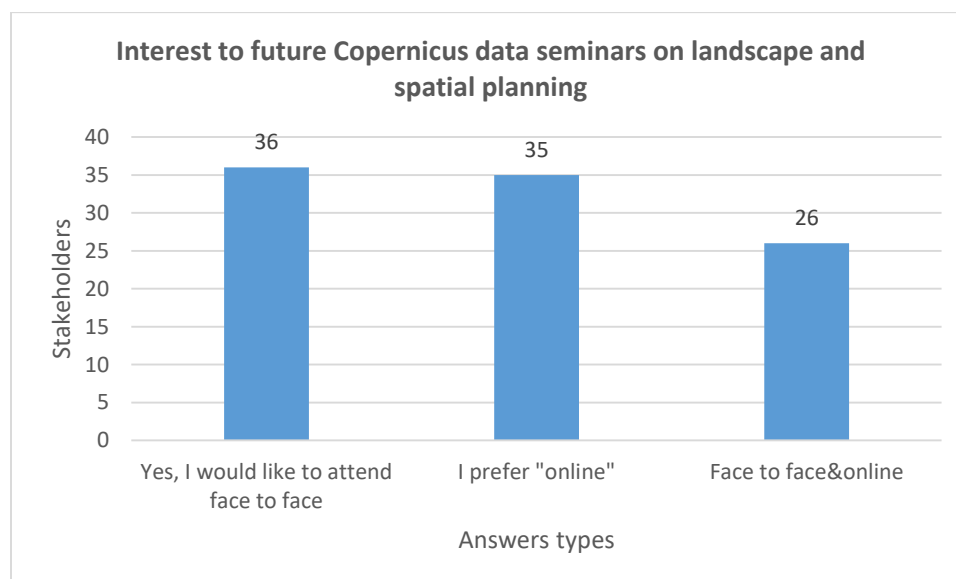
II.5 Increasing the knowledge about the Copernicus products and services

In this section three questions have been included, i.e.

- Which are the themes for which you use or would like to use the data?
- What additional data/information from satellite data would be beneficial for you?
- Would you like to attend the training session/workshop?

All 97 survey participants show interest and declare attending future training sessions or workshops on the topic, 37 % prefer “online” form, 36% chose “face to face” form and 26 % choose both attendance possibilities. (fig. 5)

Figure 5. Stakeholders' interest to Copernicus data and services seminars



The stakeholders submitted different answers to the open question Q Which are the themes for which you use or would like to use the data? The main topics for which they really need Copernicus data and services for the purpose of monitoring/researching/controlling forestry/forest and woody vegetation, wetlands, land use, LULUCF, urban and landscape planning, soil droughts, climate data, agriculture (CAP), Habitat Directive (protected areas, invasive plant species), natural disasters analysis. Stakeholders define “Land use mapping, landscape change analysis” as the first theme for which they would like to use Copernicus data (10 answers). Although a very few pointed “Vertical distribution of meteorological parameters and impurity concentrations” and “Digital information about weather elements”, it deserves our attention. (fig.6).

As for the question Q: What additional data/information from satellite data would be beneficial for you? the submitted answers refer to higher resolution and different time frequency of images, digital information about weather elements, information about forests, fires and urban heat islands. (fig.7).

Figure 6.

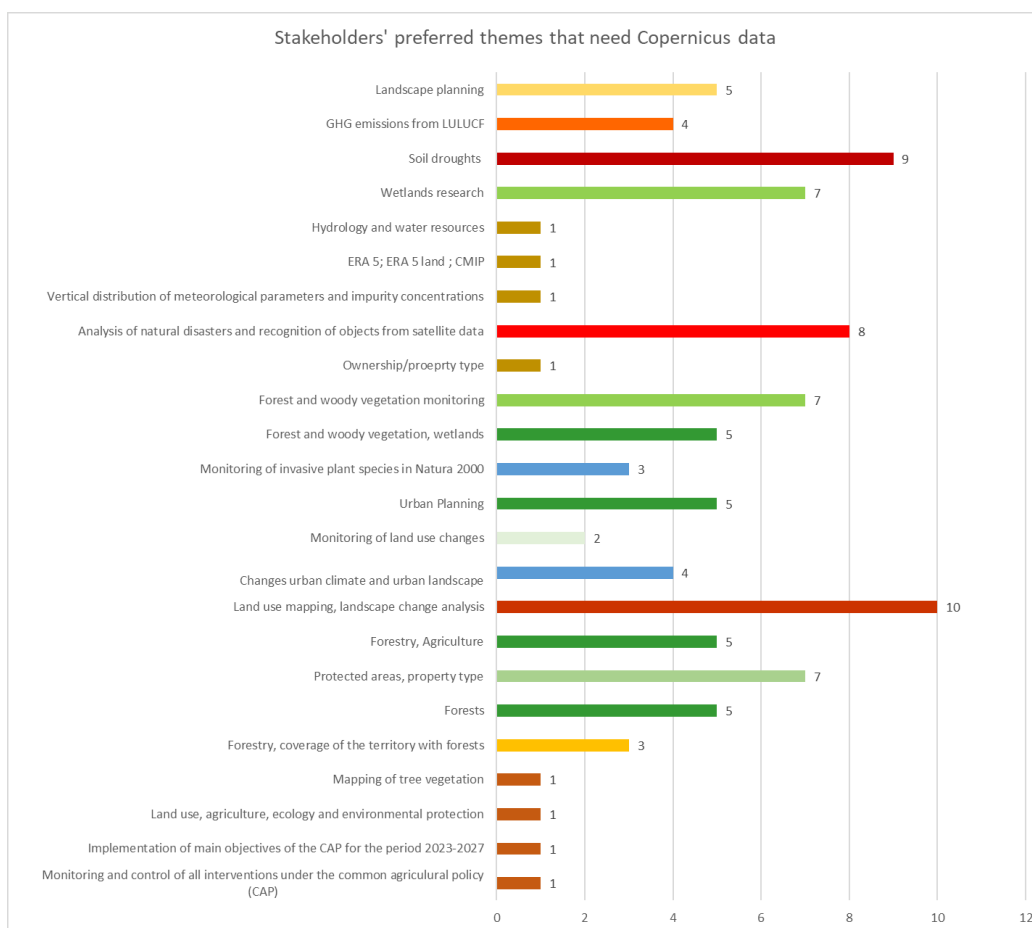


Figure 7

