

REPORT 1 User requirement survey

User needs/requirements survey and gap analysis of regional landscape and spatial planners for Copernicus data/products

1 Introduction

Survey on Copernicus and national products – The results were presented during a meeting online on 1 December 2022.

The Copernicus products being researched were the following:

- Copernicus Land Monitoring Service: Global component (e.g Land Cover 100m)
- Copernicus Land Monitoring Service: Pan-European component – Corine Land Cover and CLC+
- Copernicus Land Monitoring Service: Pan-European component – High Resolution Layers (Imperviousness, Forest, Grassland, Water and Wetness)
- Copernicus Land Monitoring Service: Local component – Urban Atlas
- Copernicus Land Monitoring Service: Local component – Natura 2000
- Copernicus Land Monitoring Service: Local component – Coastal Zones
- Copernicus Land Monitoring Service: Local component– Riparian Zones

The National products being researched were the following:

- National land consumption map
- National land cover map
- National land use map
- The Italian Land Use Inventory IUTI
- Land use/land cover data at regional level
- Landsupport platform: the open-access GeoSpatial Decision Support System (S-DSS) devoted to reconciling agriculture, environmental sustainability and policy implementation
- Regional topographic land use database
- Carta della Natura

Users: National Group of Land Monitoring Observatories.

The National Group of Land Monitoring Observatories include the local governments at NUTS II level and regional partners (including the 21 Regional Environmental Protection Agencies) and represent regional observatories to support land consumption monitoring activities and sustainable territorial planning. In this framework they contribute to:

- Analysis of the legislation in force and of the institutional competences for monitoring and reducing land consumption at national and regional level.
- Sharing of data, tools and methodologies for verifying and mapping land take.
- Promotion and dissemination of tools for assessing the environmental and economic impacts of land consumption with the integration of pedological knowledge also to support planning.
- Analysis of the flow of information towards the public and local administrations and proposal of improvement solutions.

In total 45 stakeholders (or users) answered from 30 different regional authorities (Table 1) from the 16 Italian regions and 2 autonomous provinces listed in Figure 1. For some regional authority more than one stakeholders was involved. In general the questions were presented as a multiple choice with the option to add open answers, so the numbers of answers is variable between 45 and 263. The results are presented as Count of answers and Number of responses out of total stakeholders expressed as a percentage (indicated as % of stakeholders).



Figure 1. Italian regions (in green) that answered to the survey.

Table 1. Regional authorities that answered to the survey.

REGIONAL AUTHORITIES	NUMBER OF STAKEHOLDERS
ARPA Puglia	3
ASSET Puglia	1
REGIONE Umbria	4
ARPA Umbria	1
REGIONE Veneto	3
ARPA Veneto	2
ARSIAL	3
ARPA Lazio	1
REGIONE Piemonte	2
CSI Piemonte	1
ARPA Val d'Aosta	1
REGIONE Val d'Aosta	3
AREA Val d'Aosta	1
Provincia di Trento	1
REGIONE Lombardia	1
REGIONE Emilia-Romagna	2
ARPA Emilia-Romagna	1
REGIONE Basilicata	1
ARPA Basilicata	1
ARPA FVG	1
REGIONE FVG	2
ARTA Abruzzo	1
AGRIS Sardegna	1
REGIONE Sardegna	1
Provincia di Bolzano	1
REGIONE Liguria	1
REGIONE Toscana	1
REGIONE Campania	1
ARPA Sicilia	1
Protezione Civile Sicilia	1

2 Results

2.1 Knowledge of european, national, regional products

The question ‘*Which of the following european and national products do you know?*’ was included in the survey to assess the overall awareness of available products that could be useful in the day-to-day work of spatial planning specialists. Because of the question was presented as a multiple choice with the option to add open answers, among 45 stakeholders, a total of 235 answers were received. The results reported in Figure 2 show that the most popular products among the stakeholders are the national products, in particular the land use and land cover data at regional level (35 answers and 78% of stakeholders), the National land use map (33 answers and 73% of stakeholders), the National land cover map (32 answers and 71% of stakeholders) e National land consumption map (30 answers and 67% of stakeholders). Among the CLMS products, the Corine Land Cover is the most popular, with 23 answers and known to a little more than half of stakeholders. The pan-european component of CLMS represented by High Resolution layers and the products of the global component were checked with 16 answers (36% of stakeholders), while Natura 2000 and Urban Atlas (local component) were both popular for 31% of stakeholders (14 answers). The rest of the products offered in the survey (both Copernicus and National) were marked with a number of answers less than 6.

These results indicate that the national products are better known than the european products. Concerning the CLMS products, there is a lack of knowledge with less than 50% of stakeholders that know the Corine Land Cover (the most popular dataset in general).

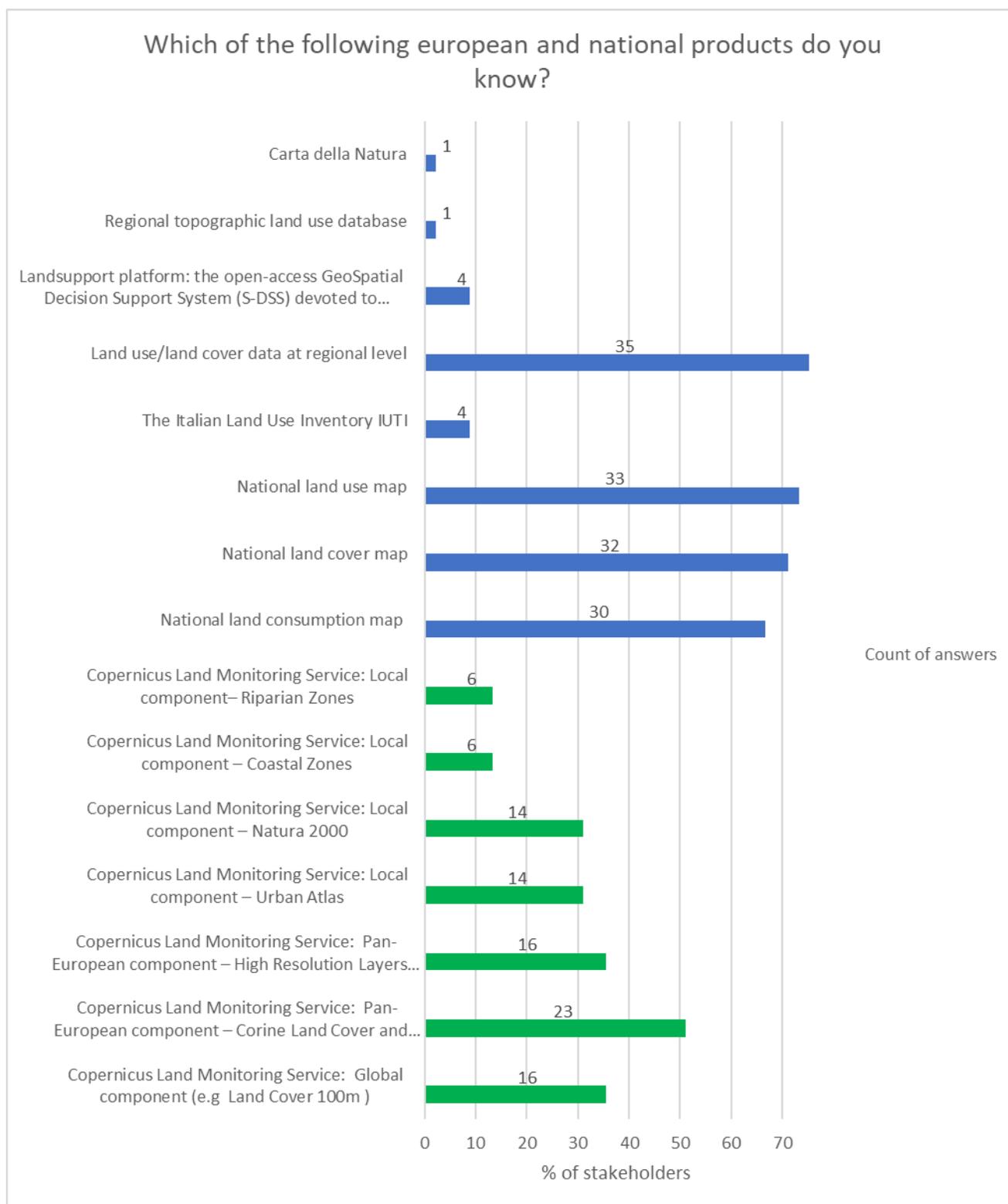


Figure 2. Knowledge of european, national, regional products among respondents (in green the Copernicus products, in blu the National products).

2.2 Usage and planned usage of the available data products

The second question '*Which products do you use or you intend to use?*' aims to identify the practical applicability of the same products as the previous question. Also this question was presented as a multiple choice with the option to add open answers, so for 45 stakeholders 249 answers were collected. The results (Figure 3) are similar to the first question, meaning that the same stakeholders know and use the products. So the products most commonly used (or intended to be used) were the national products. Concerning the land use/land cover data at regional level 34 responses were collected (76% of stakeholders), followed by the National land cover and the national land use map (28 responses and 62% of stakeholders). The National land consumption map was checked by 27 answers (60% of stakeholders). Concerning the Copernicus products the Corine Land Cover was checked probably by the same stakeholders as the previous question (23 responses for a little more than half of stakeholders) while for the High Resolution Layers we collected 20 responses (44 %), for the global component 19 (42%), for Urban Atlas 18 (40%) and Natura 2000 17 responses (38%).

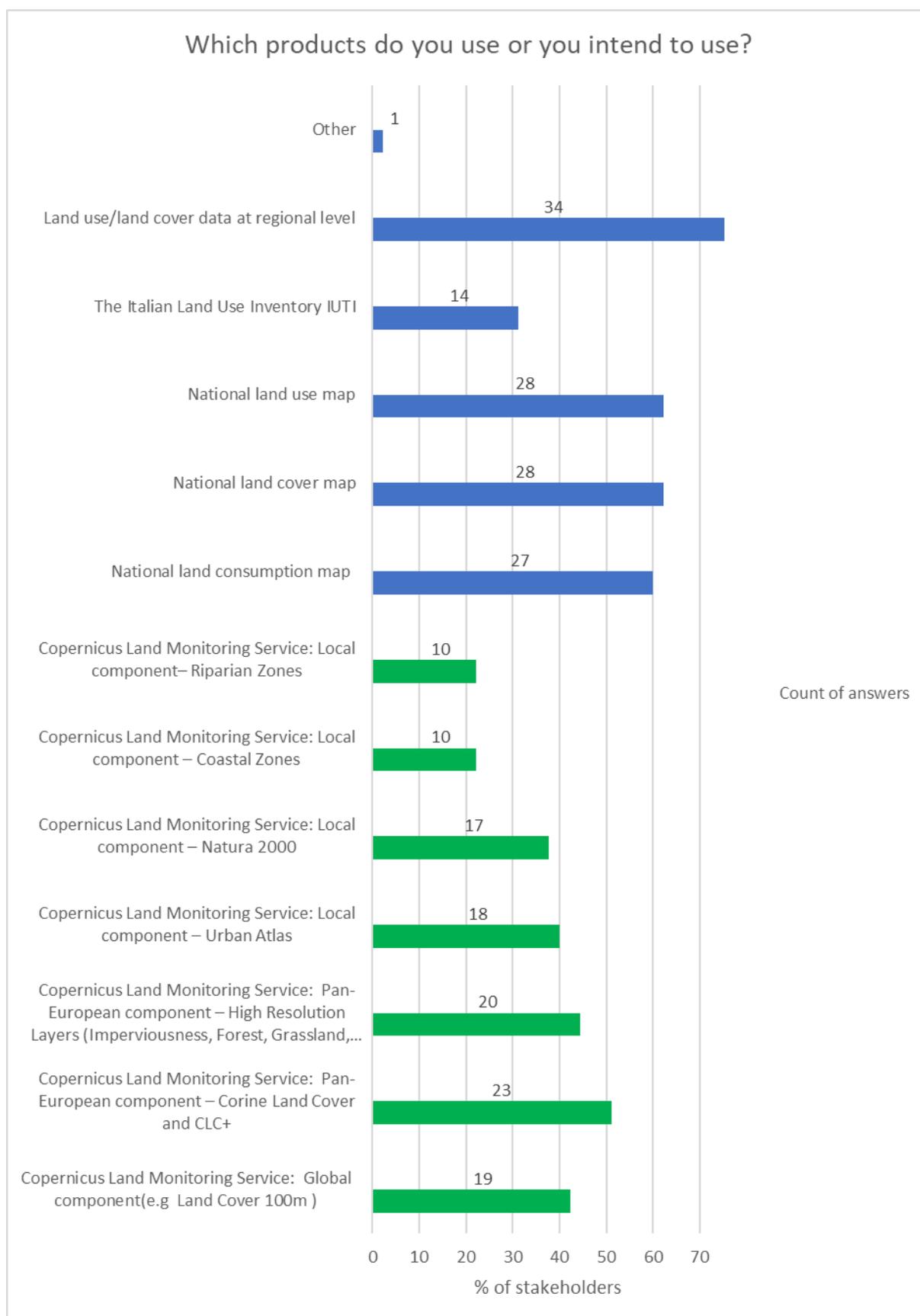


Figure 3. Usage of european, national, regional products among respondents (in green the Copernicus products, in blu the National products).

2.3 Type of use of the available data products

To inspect in which contest the data are used, it was asked to indicate the type of use of the data (Figure 4). In total 68 responses were collected. All of the users are involved at institutional level and one fourth of them are involved in the research field too. Only one check for the 'training' option.

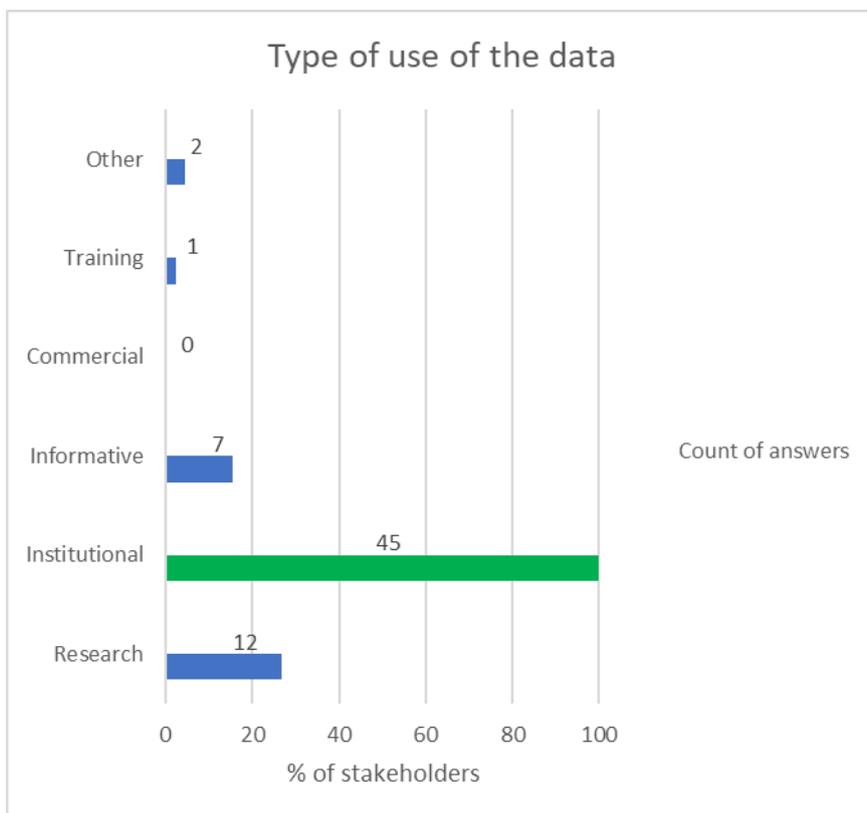


Figure 4. Type of use of the available data products.

2.4 Critical issues related to data availability

After investigating the knowledge of the products, users were asked to indicate the major critical issues (Figure 5) so that it could be taken into account in the implementation of new pilots. In total 123 responses were submitted. The major critical issue is represented by the inhomogeneity among the different data (26 answers, 58% of stakeholders), meaning that data are represented with different scales or classification systems and are not comparable to each other. Other critical points are represented by the temporal resolution (23 answers, 51% of stakeholders). The issues thematic detail and timeliness were respectively checked by 44% and 42% of stakeholders.

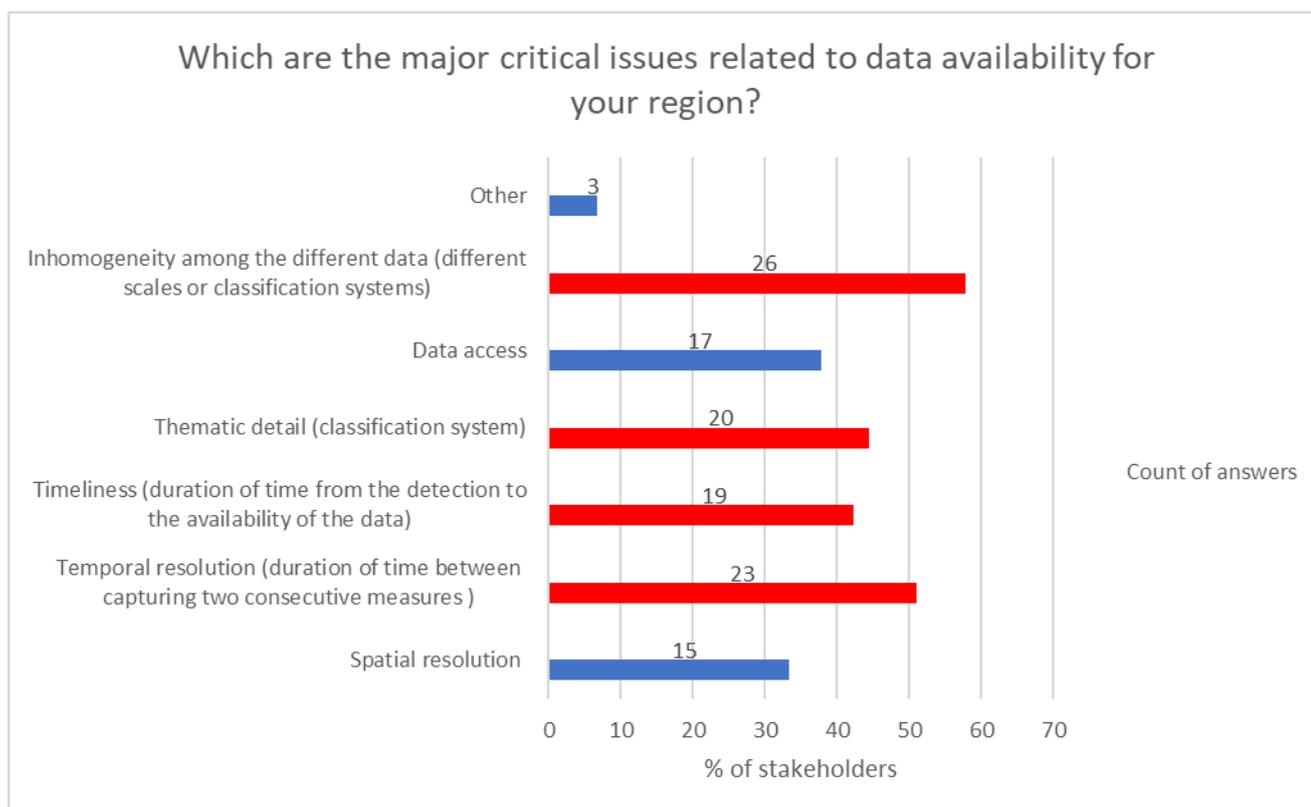


Figure 5. Critical issues related to data availability.

2.5 The usage capacity

Users were asked to indicate their experience in the usage of the products (Figure 6), with a choice of four options and without multiple choice: the 40% of them feel they have good knowledge in using the products, more than one third of them have a sufficient knowledge, the 18% don't know how to use the products and about the 7% have an excellent knowledge and capacity in the usage of the products.

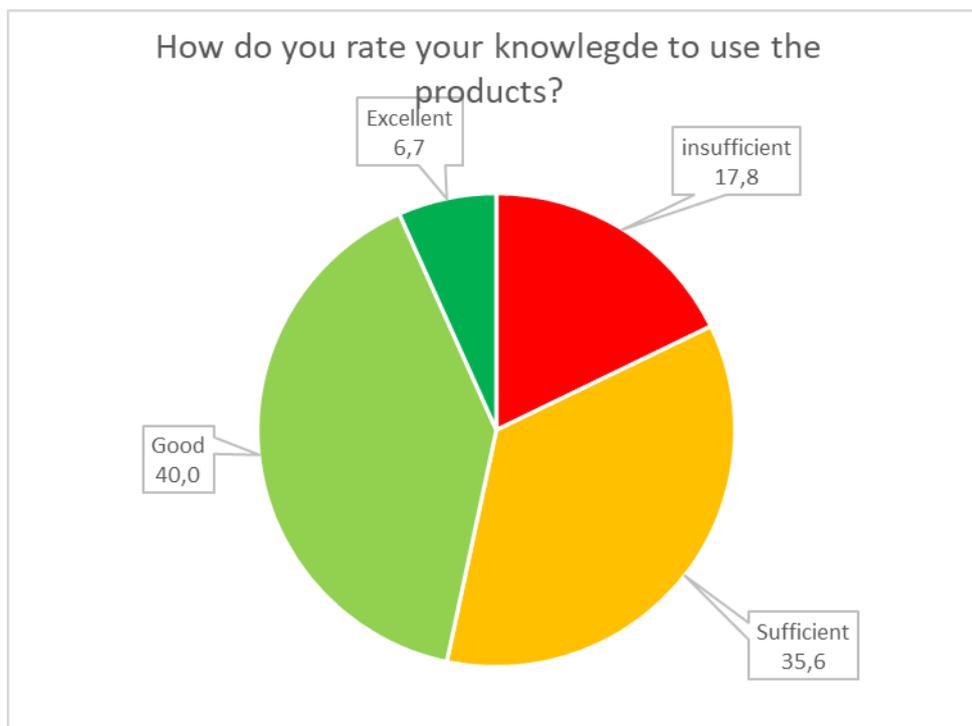


Figure 6. The usage capacity.

2.6 Most useful spatial resolution level

About the spatial resolution level (Figure 7), the stakeholders were asked 'Which is the optimal scale or resolution for your work?'. 86 answers were collected. More than 50% of the stakeholders prefer the 1:5.000 scale, while 1:10.000 and 1:25.000 were chosen by the 42% of them and the 29% use 1:25.000 scale.

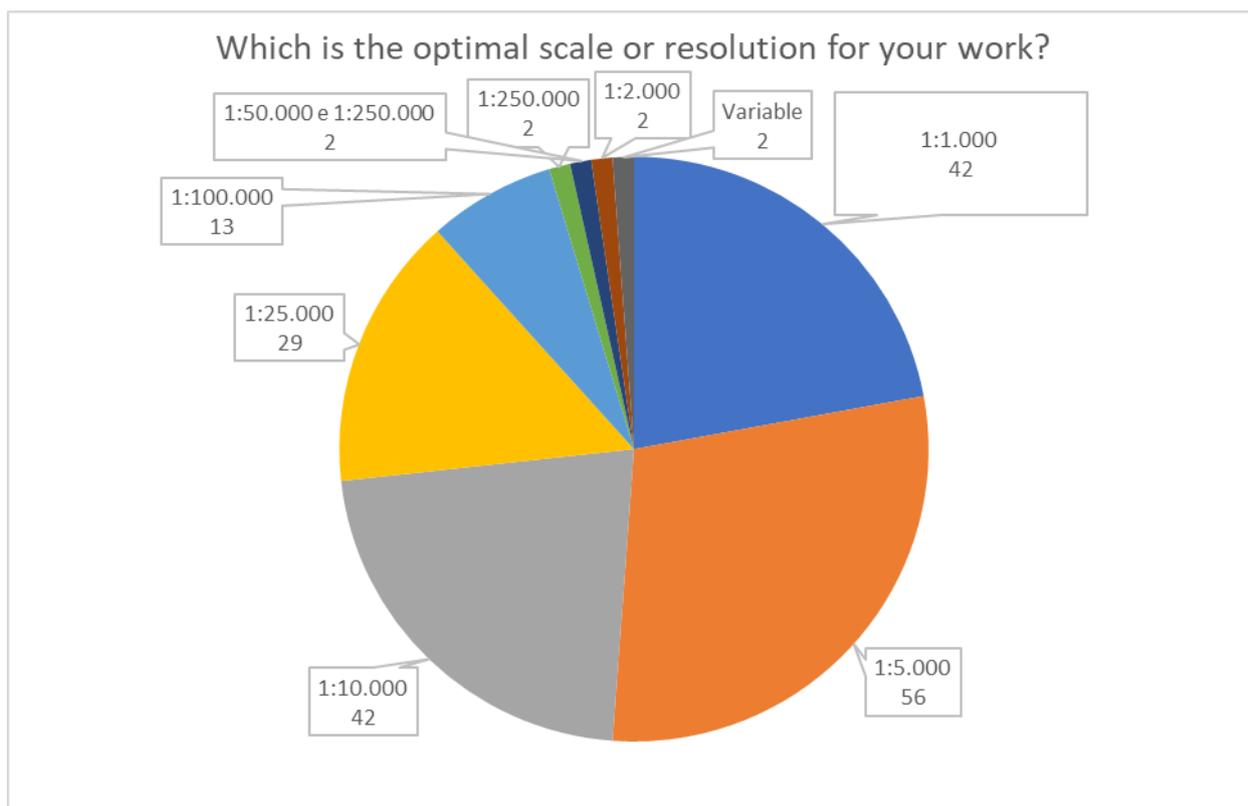


Figure 7. Spatial resolution level.

2.7 Themes

We then wanted to go into more detail, asking which themes the products are used for (Figure 8). This question, which collected 263 responses, highlights the different competencies of the stakeholders who participated in the survey. More than 50% of them are involved in land consumption monitoring, urban and territorial planning, ecosystem services assessment, land degradation, soil sealing degree assessment. Also interesting is the issue of urban forms and settlement typologies analysis involving the 44% of the users.

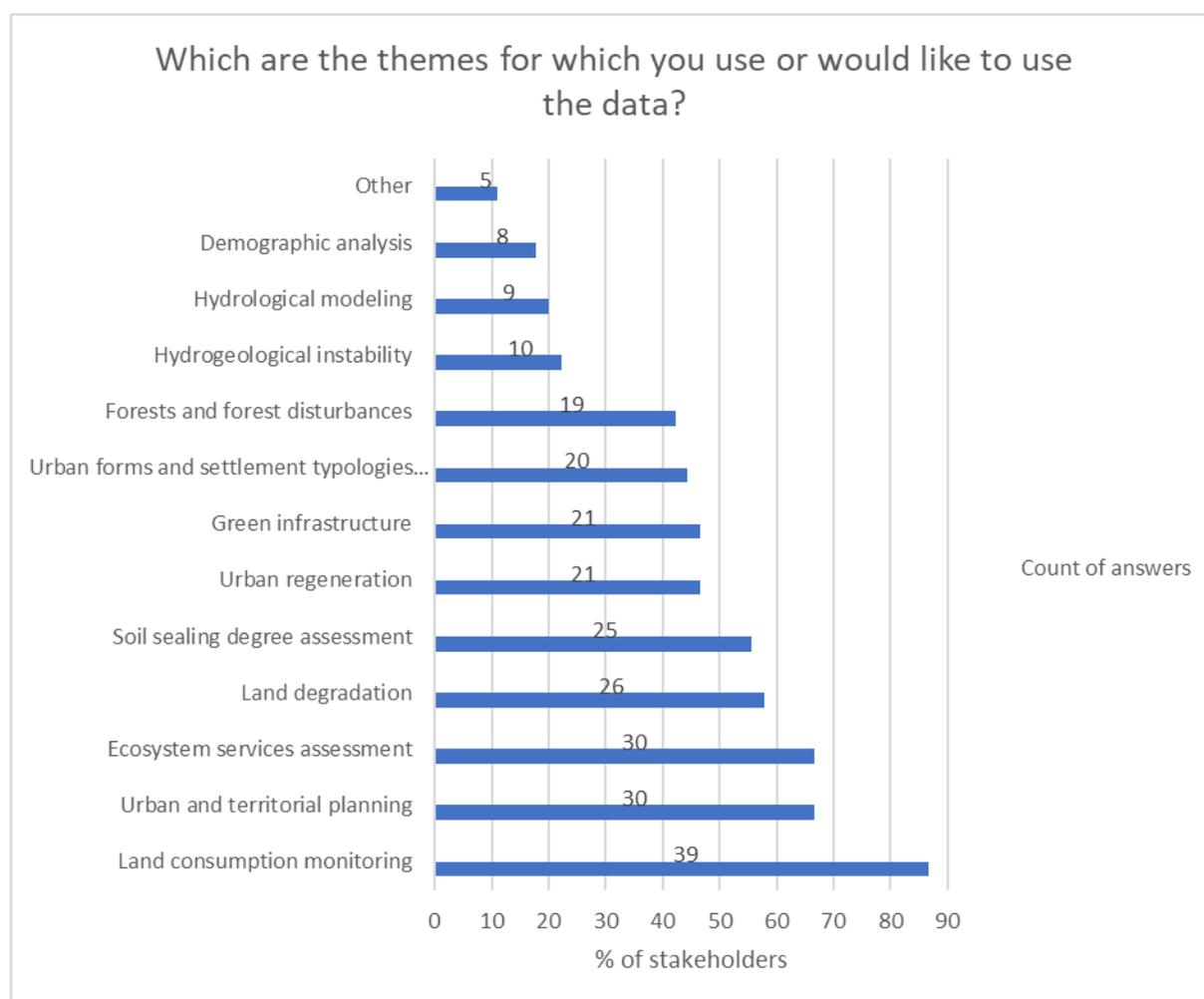


Figure 8. Themes.

2.8 Scopes

After investigating the themes for which the stakeholders use or would like to use the data, they were asked '*In what context do you use the data?*' (Figure 9). The activities of more than half of the users (a total of 185 answers) refers to the following context:

- Agricultural areas
- Forestry
- Urban areas
- Mountain areas

More than 45% are involved in protected areas and restricted areas for landscape protection.

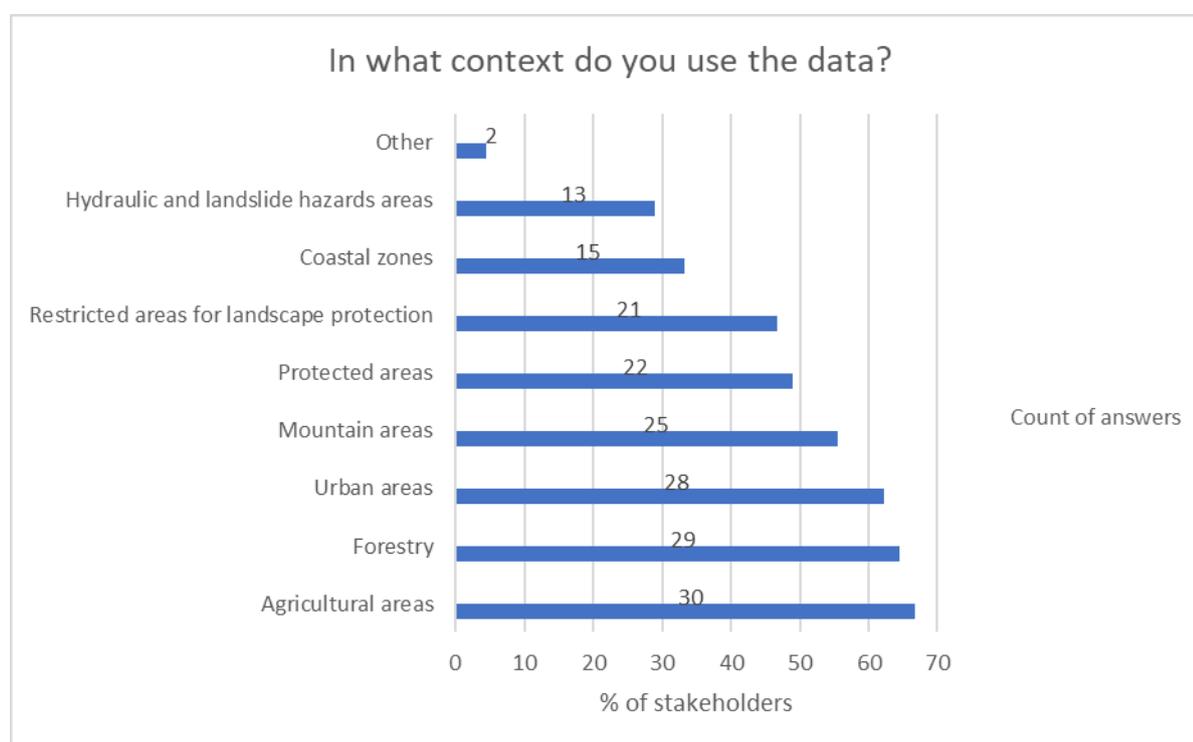


Figure 9. Scopes.

2.9 Training sessions

The question ‘Which are the reasons you would attend a training sessions?’ collected 128 responses, so the users are interested in more than one training sessions among those listed (Figure 10).

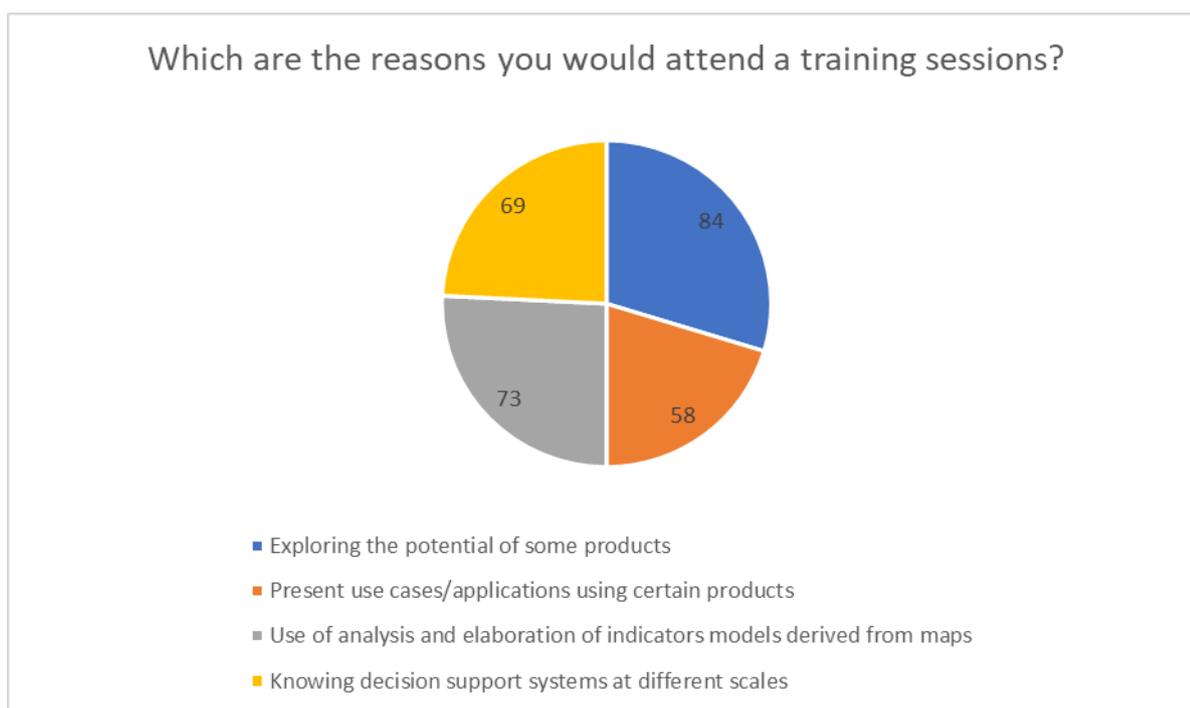


Figure 10. Training sessions.

2.10 Containment of land consumption and urban sprawl

Then the stakeholders were asked a specific question (**Errore. L'origine riferimento non è stata trovata.**) referring to the best methods to contain land consumption and urban sprawl. Out of a total of 189 responses, 35 users (78% out of the total) think that the rationalization of the existing building stock could be the rapidest and most effective method to contain land consumption and urban sprawl, which means having good management of abandoned areas and control building densification. 31 respondent (69%) think also that it would be appropriate to propose targeted actions towards redevelopment/regeneration/reuse and taxing to discourage the building of agricultural areas and foster reuse. 60% of them (27 responses) think again of compensation with restoration/renaturalization actions of equivalent areas for all interventions involving soil consumption as an effective method.

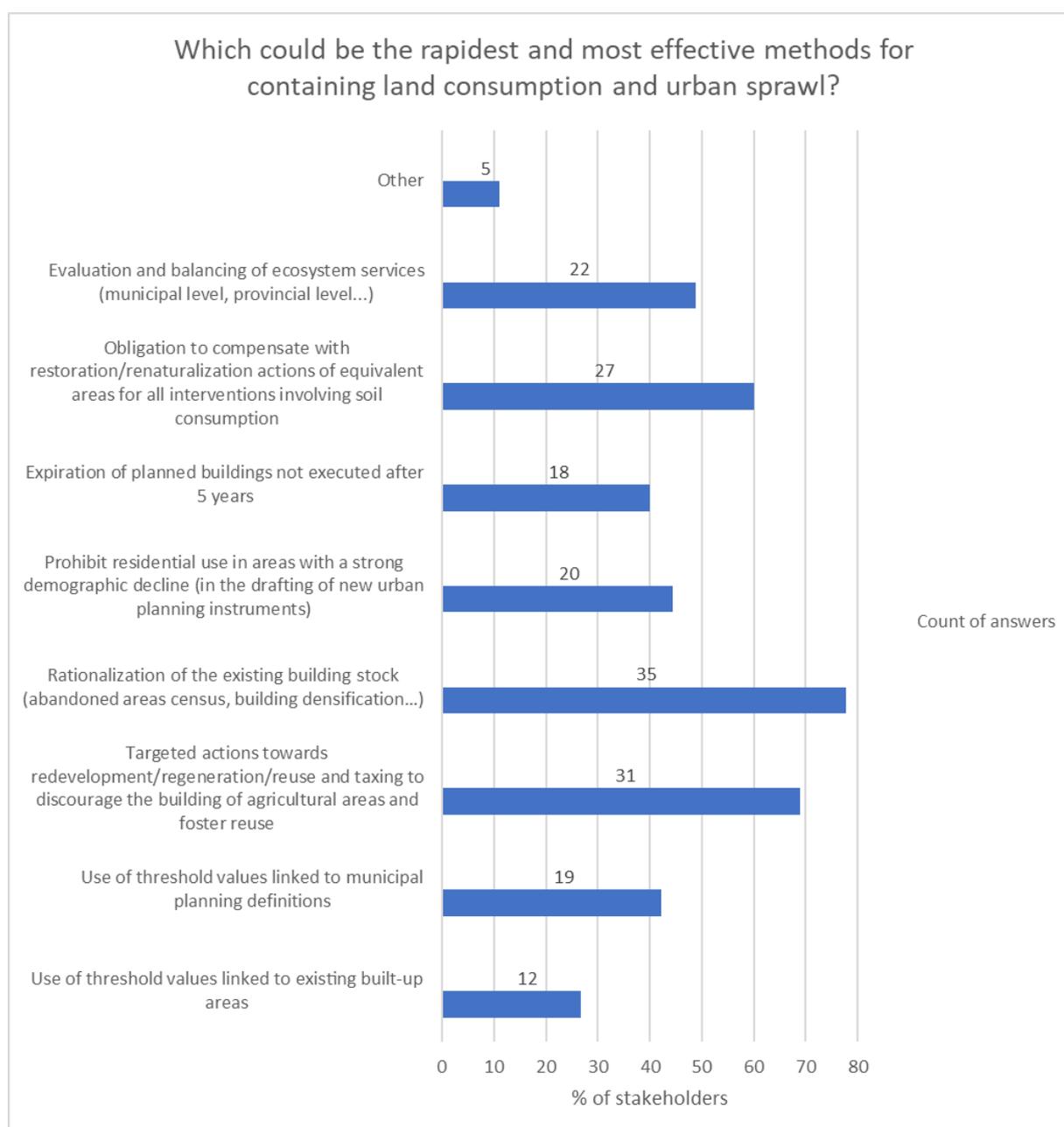


Figure 11. Containment of land consumption and urban sprawl.

2.11 Planning

The last question of the survey was about the level of planning to manage land consumption: '*What do you think could be the most suitable level of planning to contain land consumption?*' (Figure 12). The most of the users checked for multiple choice as the following: regional (69%), national (56%), municipal (51%). The 27% checked for provincial level of planning.

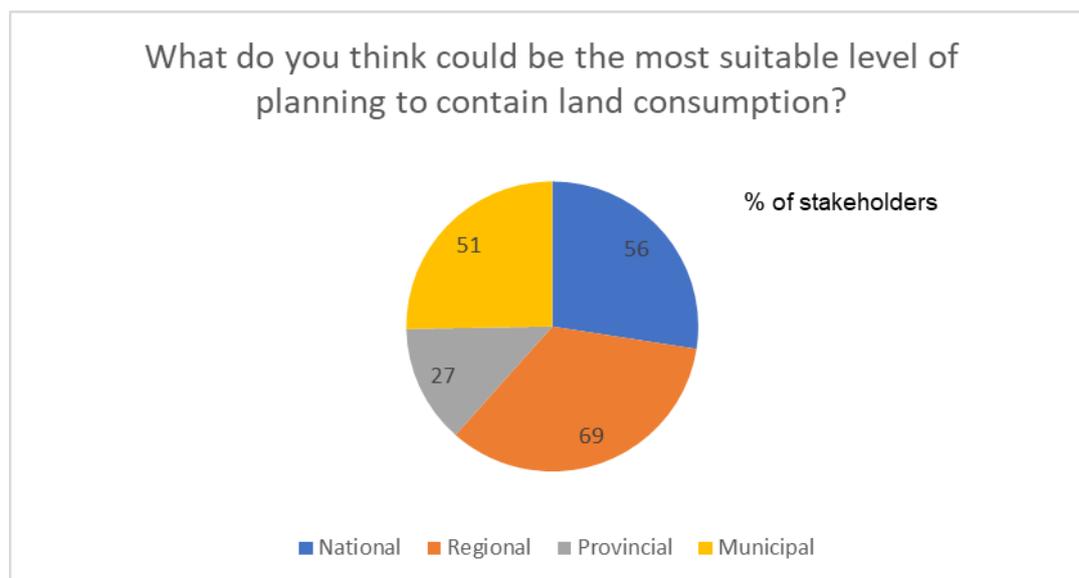


Figure 12. Level of planning.

3 Conclusions

A survey was conducted in Italy by ISPRA addressed to potential group of users for Copernicus Land Monitoring Service represented by the National Group of Land Monitoring Observatories. In particular the respondents were 45 coming from 30 different regional authorities represented by the local governments at NUTS II level, the Regional Environmental Protection Agencies and several regional partners.

Almost always the questions were presented as a multiple choice with the option to add open answers, so the numbers of answers ranges from 45 to 263.

The research covered also land products at national and regional data with the aim to have a global vision around the knowledge of the stakeholders.

In general the most popular products (more than 70% of stakeholders) are the national and regional ones. With regard to the Copernicus land products there is a lack of knowledge especially for the products of the local component, while Corine Land Cover is known by half of the users. The same trend is for the question referred to the usage of the products, that means there is a lack of information about the capabilities of these data.

All the users are involved in institutional activities and the major critical issues are represented by the inhomogeneity among the different data (58% of stakeholders), the temporal resolution (51% of stakeholders), the thematic detail (44%) and timeliness (42%).

The stakeholders that know and use the products, confirm that they have a good knowledge of them (40%), and 35% claim to have a sufficient knowledge.

The most useful spatial resolution ranges from 1:10.000 to 1:1.000 meaning that the stakeholders prefer detailed scales.

Regarding themes and scopes for which the stakeholders use the data (or would like to use), the results show that more than half of them are involved in land consumption monitoring, urban and territorial planning, ecosystem services assessment, land degradation, soil sealing degree assessment and work in the context of agricultural areas, forestry, urban areas and mountain areas. The question about the training session collected more than one choice for every options, meaning that interest in attending training session is high. In particular the answer '*Exploring the potential of some products*' collected 84% of the stakeholders.

The last two questions of the survey were specific to the issue of land consumption and urban sprawl and particularly suitable for the spatial planners. The rapidest and most effective method for containing land consumption and urban sprawl is the rationalization of the existing building stock (78% of the stakeholders), followed by targeted actions towards redevelopment/regeneration/reuse (69%), that means in general having good management of abandoned areas. Then a large part of them claim that the most suitable level of planning to contain land consumption is the regional level (69%), together with national (56%) and municipal (51%).