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**Enabling Access to Geological Information in
Support of GMES**

D3.1: Survey Team Requirements and Recommendations

Version 2

21/7/2011

Dissemination Level:	Public	
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EXECUTIVE SUMMARY

This version of the deliverable 3.1 comprises the questions that formed questionnaire that was sent to each Geological Survey. Replies to the questionnaire have been included. Subsequent analyses of the replies will be undertaken to gain user requirements to help design the PanGeo service. The questionnaire was also been designed to enable the core project partners to gain an understanding of what auxiliary information the Geological Surveys hold that can be integrated with the PSI data to produce the PanGeo Service.

The questionnaire addressed 11 areas:

1. General information about the person completing the survey
2. Use of the PanGeo service
3. Information about the Geological Survey and their skills
4. Geological and geohazard issues
5. Auxiliary data and information
6. Politics
7. The PanGeo geohazard summary
8. The PanGeo portal
9. Support information for the creation of PanGeo geohazard information
10. The future of PanGeo
11. Any other information

In total, twenty seven replies were received, three of which were questionnaires completed by testers from Geological Surveys.

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1 INTRODUCTION

This is the second delivery of PanGeo Deliverable 3.1 ‘Survey Team Requirements and Recommendations’. This second version of this deliverable is a questionnaire that was sent to all the Geological Surveys involved in PanGeo, along with summaries of the replies received. Subsequent versions of this deliverable will present the analysis of the questionnaire answers in order to present the PanGeo user requirements from the Geological Surveys’ point of view.

In addition to this questionnaire the Geological Surveys received supporting material. This material was designed to introduce the concept of the PanGeo project to the Surveys and provide the background information necessary to complete the questionnaire.

2 OBJECTIVE OF THE QUESTIONNAIRE

The PanGeo project has the objective of enabling free and open access to geohazard information in support of GMES. First it is necessary to design the service and the methodology by which the service will be created. As part of the design process we wish to gather inputs from the EU Geological Surveys to ensure that their views were considered.

The objective of this questionnaire was therefore to gain two types of information from the Geological Surveys; 1) information on how they would like the PanGeo service to look, its functionality etc. and 2) their opinions on how the PanGeo service should be created. It is envisaged that each Geological Survey will be both a creator of PanGeo information, - through the production of the PanGeo geohazard information - as well as a user of PanGeo information - through the access of the geohazard information in the PanGeo portal.

The questionnaire was broken down in to several sections. Some questions are multiple choice, but many have a free text box to enabled the Surveys to add their views. The views of Local Authorities, the anticipated users of PanGeo information are being gathered within PanGeo Work Package 4.

3 DELIVERY OF THE QUESTIONNAIRE

The questionnaire was made available to the Geological Surveys on the PanGeo website. It was an interactive form based survey where the person taking part checked multiple choice boxes and added additional information in text boxes. Issuing the survey in this way had the advantage that responses were captured and recorded automatically in a Microsoft Excel spreadsheet thereby easing the data analysis process.

Each person taking the survey required their own unique logon; this is a requirement of the data collection process. Initially the PanGeo technical contact for each geological survey was sent an email inviting them to complete the survey. This email also had instructions of how to log on and complete the survey. The text from the email is given below.

“Dear Geological Survey Colleagues,

We are currently designing the PanGeo service; as part of the design it is important to gather the requirements and recommendations of the Geological Surveys. To do this we have designed a questionnaire and made this available on the PanGeo website. This email is being sent to you as the PanGeo technical contact for your Geological Survey Organisation to give you the chance to respond to the questionnaire and input to the service design.

Background information on PanGeo can be found in an overview presentation of the PanGeo service:

<http://www.fugro-npa.net/material/What is PanGeo v2 20th May 2011.ppt>

More detailed information can be found in the description of work which you will have received from the project coordinator.

The website allows us to automatically compile your answers, It is therefore necessary for you to log in using the procedure outlined below. If there are other people in your organisation who would like to complete the survey then please send their name and email address to Graham Glanfield (g.glanfield@fugro-npa.com) and we will send log on details to them. If you encounter any problems while completing the survey then please contact Luke Bateson at lbateson@bgs.ac.uk

This survey should take no longer than 20 minutes to complete. If necessary you can stop part way through and save your progress by clicking the ‘Save Drafts’ button at the bottom of the page. To return to the survey simply log back on to the web page.

To ensure we have time to use the supplied information in the design process please complete the questionnaire by Friday the 1st of July.

Survey procedure:

a) Navigate to:

http://www.fugro-npa.net/surveys/survey_team_requirements_and_recommendations_v1

b) Click on the link "You must login to view this form." which will appear above the survey title.

c) Enter your username and password which is as follows:

Username: XXXXXX

Password: XXXXXX

d) Having completed the survey and submitted your results, click on the "Logout" link on the left hand side of the screen.

Thank you

Luke

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British Geological Survey
Kingsley Dunham Centre
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4 THE QUESTIONNAIRE

We are grateful to the twenty seven Geological Survey staff who replied to the questionnaire; this number includes three replies from testers of the questionnaire. Replies were received from GTK, GeoZS, EGK, BRGM, SGUDS, SGU, MRA, RBINS, BGR, CGS, GBA, PGI, GSI, SGL, IGMA GR, MAFI, ISPRA, LGT, MANRE, BUL, LNEG and BGS.

This document lists the replies within each question where possible i.e. each tick box will contain a number that indicates the amount of respondents who ticked that box. An explanation and/or chart will be added to explain the answers or list free text comments, where appropriate.

4.1 GENERAL INFORMATION

1.

a. What is your name and title?

b. By what name do you prefer to be addressed?

2. Please provide your PanGeo partner number and short-title. (For example the British Geological Survey would be: 2 BGS.)

3. Contact Email address

4. Will you be:

A creator of PanGeo geohazard polygons

5

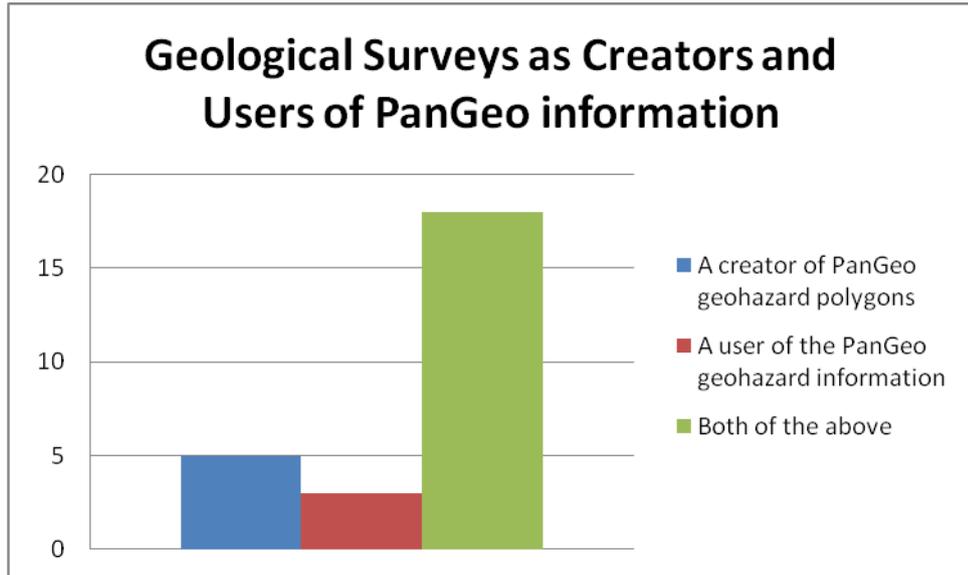
A user of the PanGeo geohazard information

3

both of the above

18

Five Geological Surveys responded stating that they will be creators of PanGeo geohazard polygons, three will be users of PanGeo geohazard information and eighteen stated that they would be both.

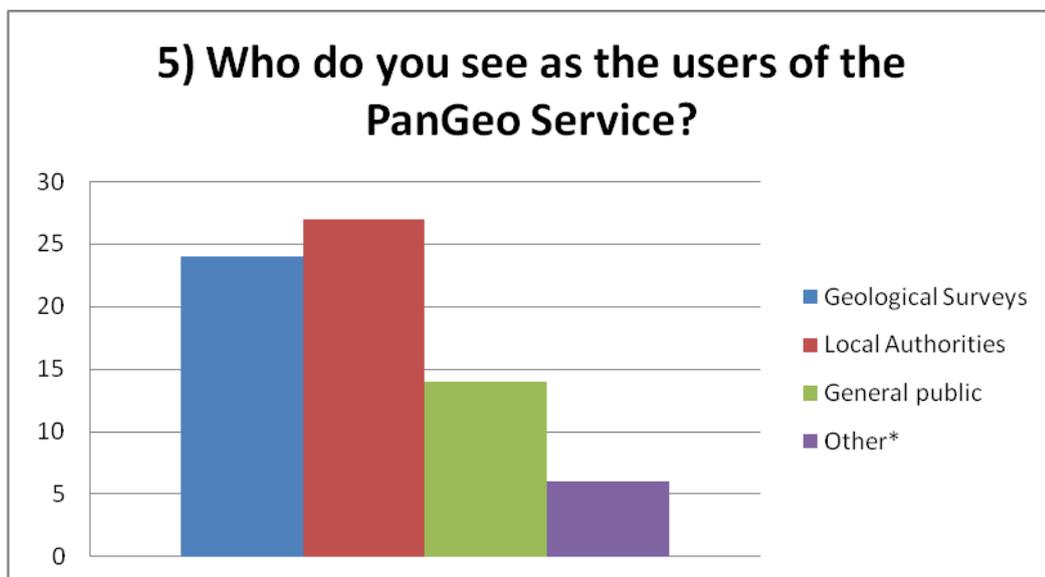


4.2 THE USE OF THE PANGEO SERVICE

5. Who do you see as the users of the PanGeo Service? Please mark all that apply.

Geological Surveys	24
Local Authorities	27
General public	14
Other	6
If Other then please specify _____	

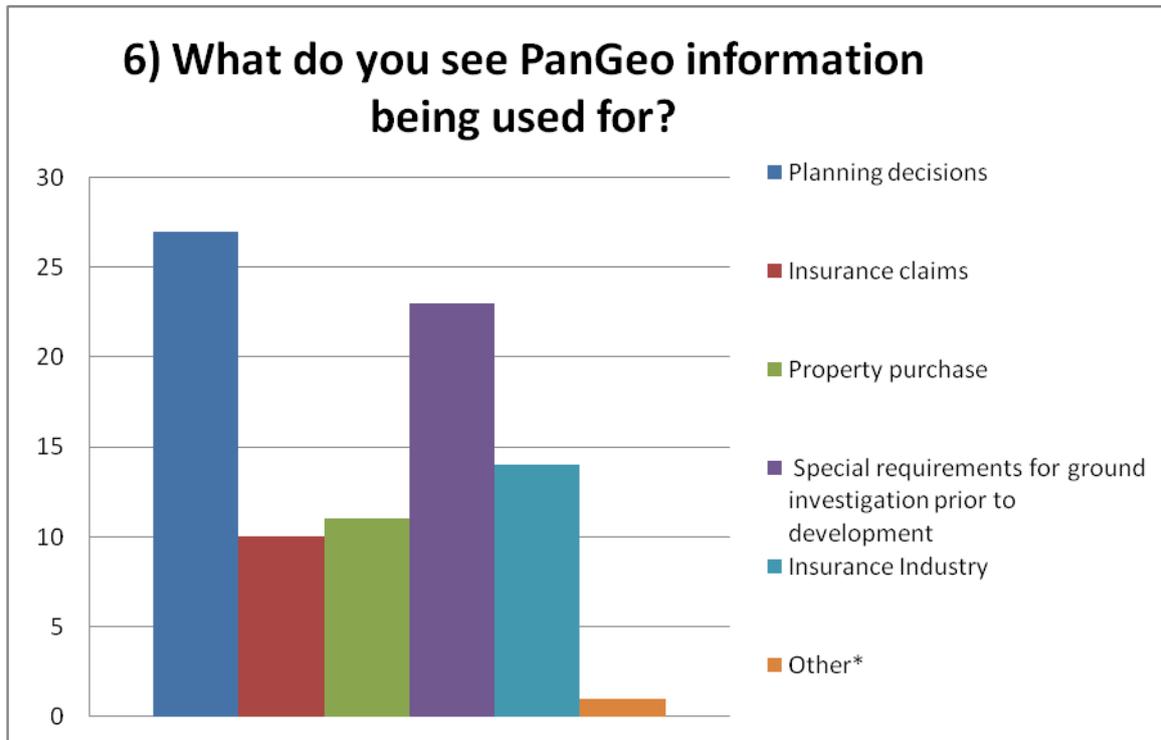
Other users were specified as follows: insurance companies, various government ministries and authorities, construction and geotechnical companies, civil protection agencies, land-use planners and academics.



6. What do you see PanGeo information being used for? Please mark all that apply

Planning decisions	27
Insurance claims	10
Property purchase	11
Special requirements for ground investigation prior to development	23
Insurance Industry	14
Other	1
If Other then please specify _____	

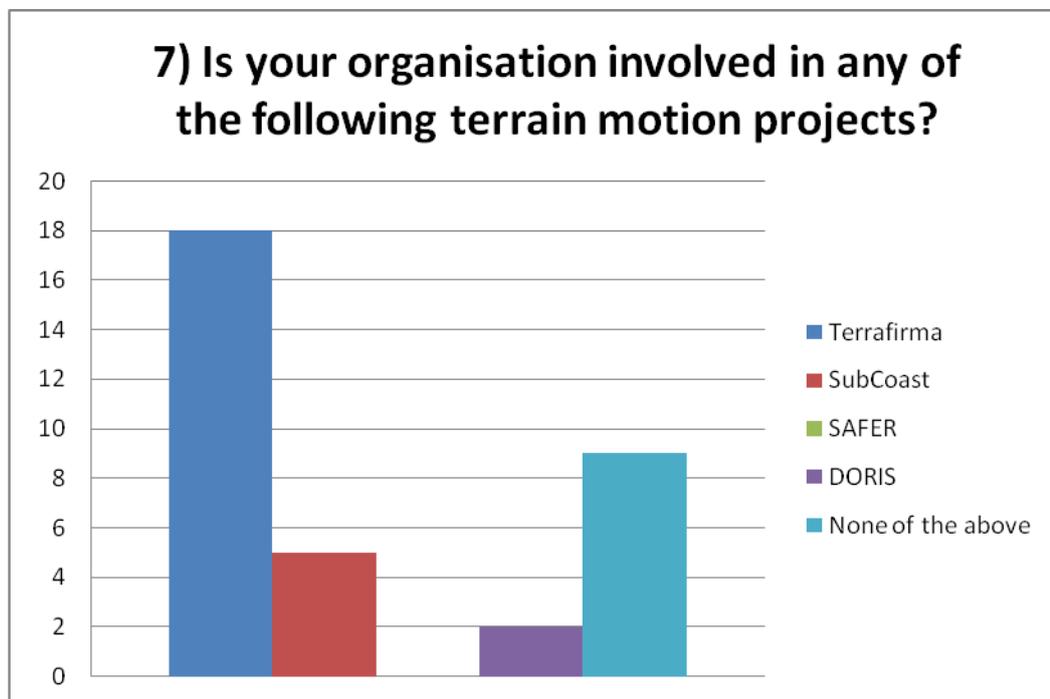
One reply stated that academic research could also be a use for PanGeo information.



4.3 THE GEOLOGICAL SURVEYS (PEOPLE, SKILLS AND WORKING PRACTICES)

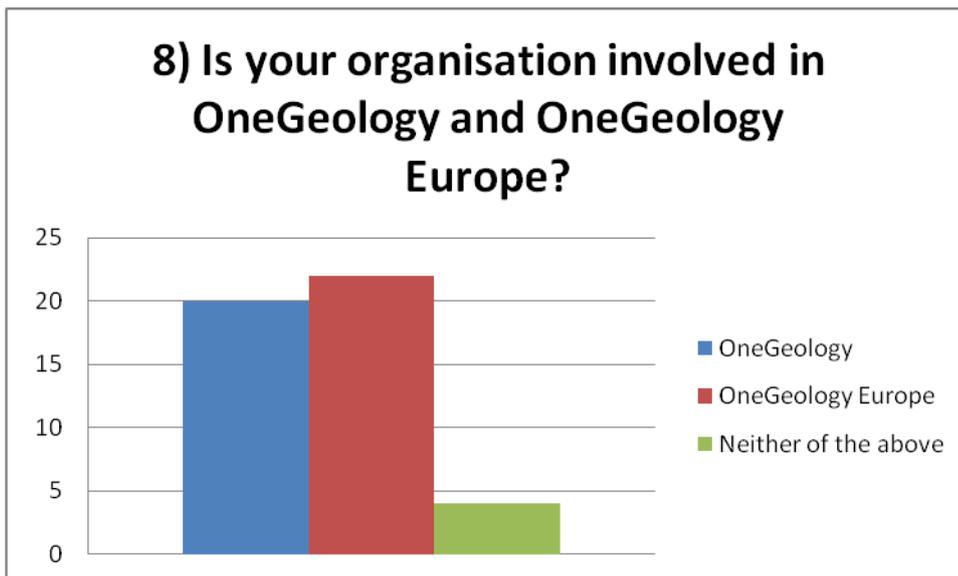
7. Is your organisation involved in any of the following terrain motion projects?

Terrafirma	18
SubCoast	5
SAFER	0
DORIS	2
None of the above	9



8. Is your organisation involved in OneGeology and OneGeology Europe?

OneGeology	20
OneGeology Europe	22
Neither of the above	4

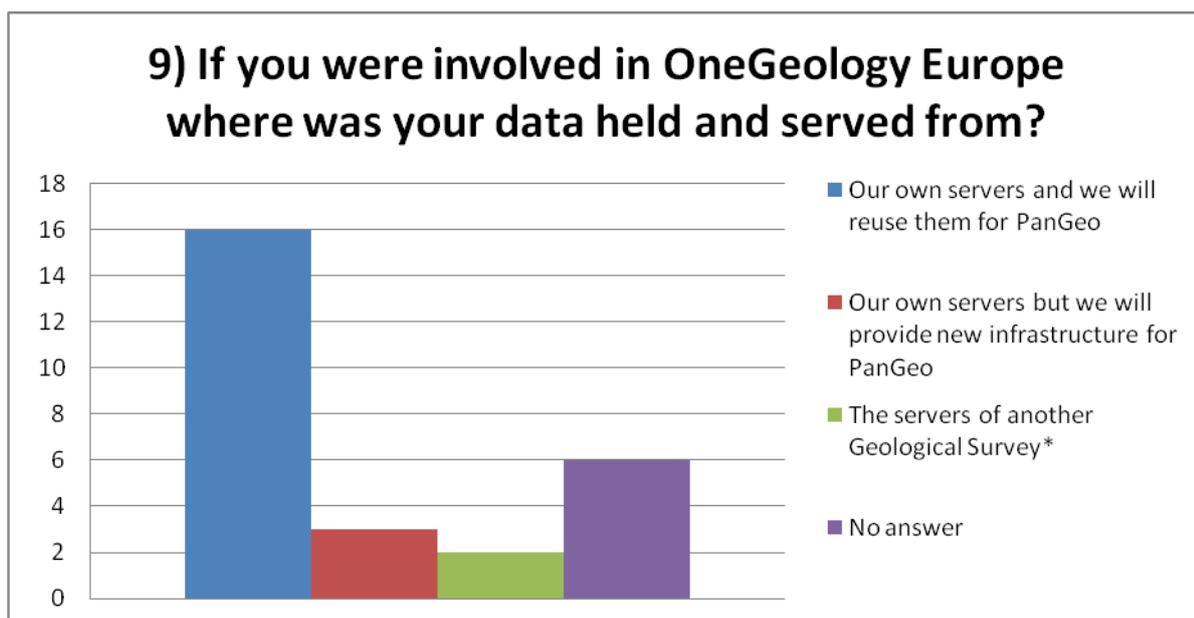


9. If you were involved in OneGeology Europe where are your data held and served from?

- Our own servers and we will reuse them 16
- Our own servers but we will provide new infrastructure 3
- The servers of another Geological Survey 2
- If so which other Geological Survey _____

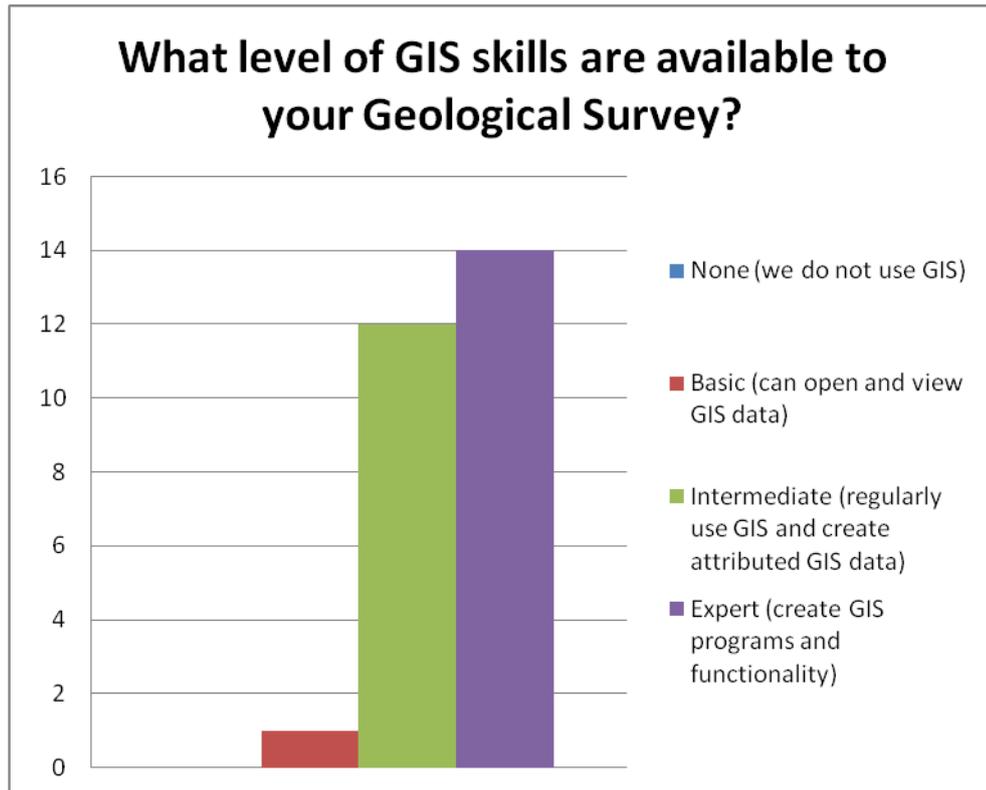
Two respondents did not provide an answer to this question.

Also, EGK stated that the Geological Survey of Finland would supply the servers for their data while MANRE stated that the data will be served in the future.



10. What level of GIS skills are available to your Geological Survey?

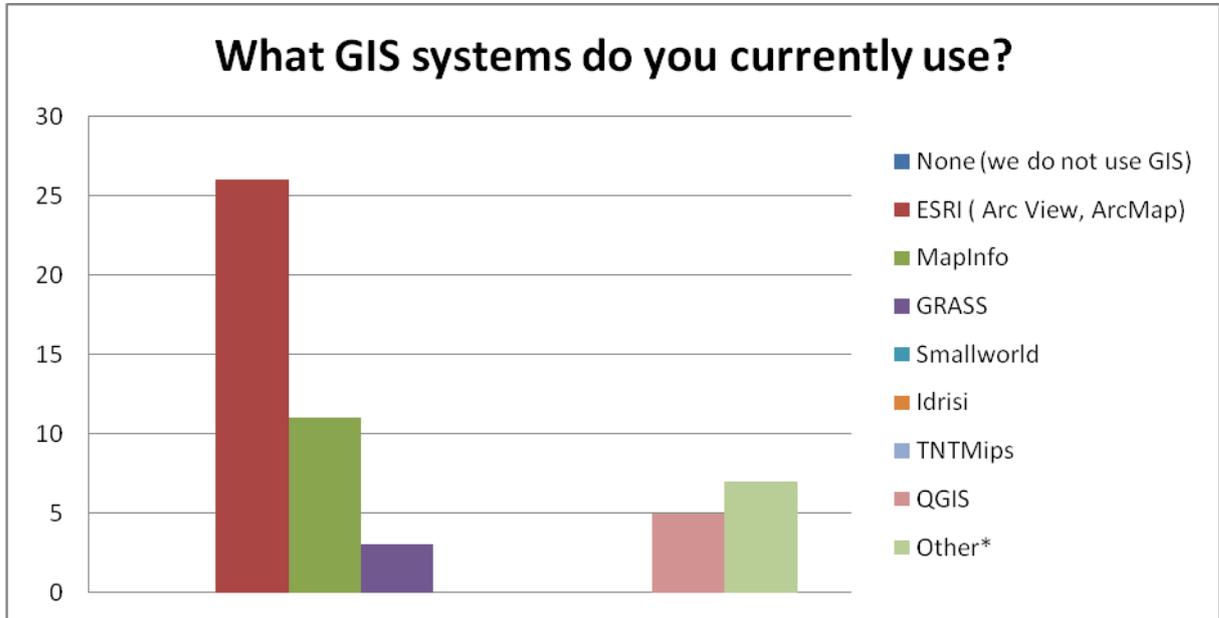
None (we do not use GIS)	0
Basic (can open and view GIS data)	1
Intermediate (regularly use GIS and create attributed GIS data)	12
Expert (create GIS programs and functionality)	14



11. What GIS systems do you currently use?

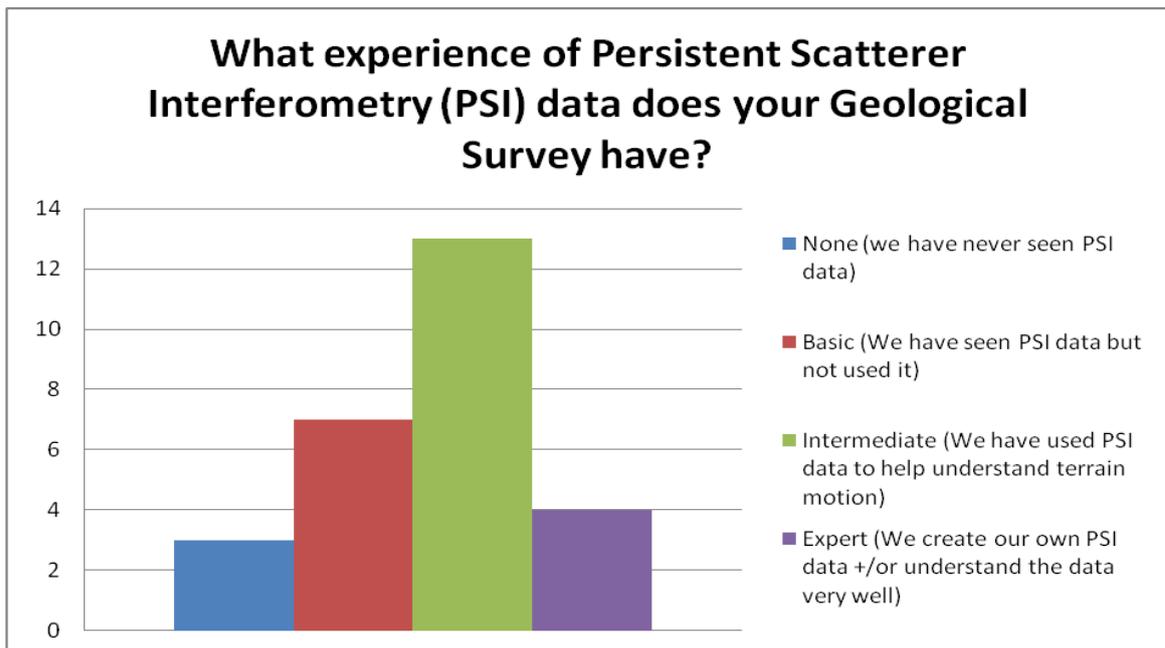
None (we do not use GIS)	0
ESRI (Arc View, ArcMap)	26
MapInfo	11
GRASS	3
Smallworld	0
Idrissi	0
TNTMips	0
Other please specify _____	

Other GIS packages used by Geological Surveys are GeoMedia MGS (Intergraph), Surfer (Golden Software), MicroStation (Bentley), ERMapper (ERDAS), Envi & IDL (ENVI Corp.), RiSCAN Pro (Riegl) and MapWindow.



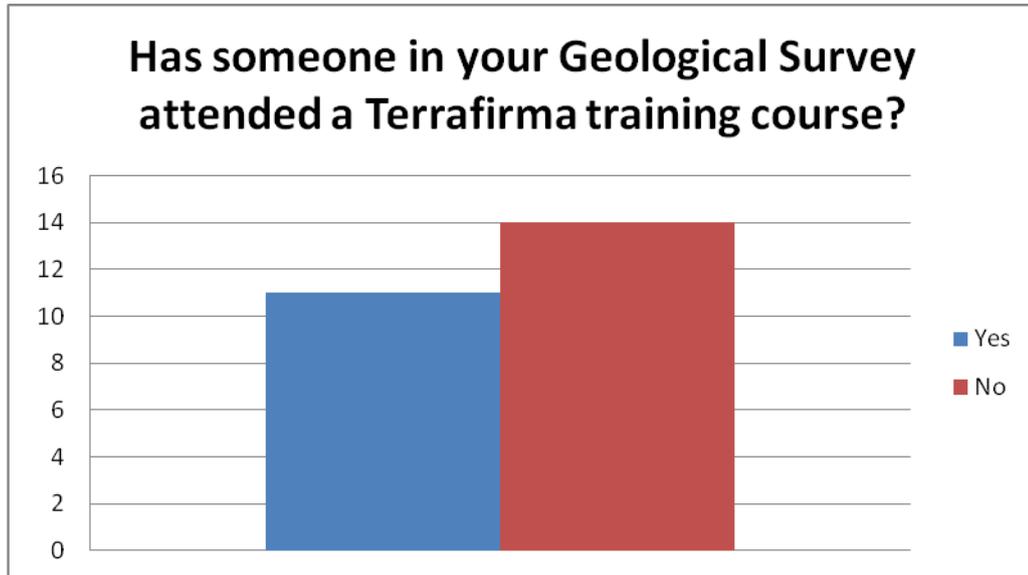
12. What experience of Persistent Scatterer Interferometry (PSI) data does your Geological Survey have?

None (we have never seen PSI data)	3
Basic (We have seen PSI data but not used it)	7
Intermediate (We have used PSI data to help understand terrain motion)	13
Expert (We create our own PSI data +/-or understand the data very well)	4



13. Have you or someone else in your Geological Survey attended a Terrafirma training course?

Yes	11
No	14



14. Do you think that you or someone else in your Geological Survey would benefit from training in the geological interpretation of PSI data?

Yes	27
No	0

4.4 GEOLOGICAL AND GEOHAZARD ISSUES

15. What are the main geohazards in your country?

GTK - Landslides, coastal and fluvial flooding, Anthropogenic subsidence, Dissolution (sulphide-rich sediments in coastal areas).

GeoZS - Earthquakes & active tectonics, landslides, floods, local subsidence due to mining or groundwater extraction.

EGK - Landslides, mining related subsidence, clay ground shrink and swell, Coastal Flooding and erosion.

BRGM - Swelling and shrinking on clays, landslides, flooding.

SGUDS - Landslides, floods, earthquakes, erosion (water, wind). Collapsibility (loess).

SGU – Radon, Landslides, Flooding (in spring due to snowmelt, and due to heavy rains (causing road failures etc), Coastal erosion, Mining-relate subsidence occurs.

MRA - Seasonal Landslip and flooding, Inundation by the sea in coastal areas, Minor Seismic Activity.

RBINS - Tectonic (faults), seismic, mines, few landslides, few rock falls.

BGR – Flooding, Storms, Ground instability caused by abandoned mining and underground constructions.

CGS - Floods, landslides.

PGI - Flood, Landslides, Mass movements on coastal cliffs, Subsidence in mining regions, Induced seismicity in mining regions, Karst subsidence (loess)

GSI - Radon, Landslides, Dissolution.

SGL – Landslide, Rockfall, River flooding (not a real GEO-hazard), to a lesser extent: Compressible sediments, Shrink-swell, Dissolution, Groundwater flooding.

IGME ES - Flooding, subsidence, landslides, earthquakes.

LU - Seismic, Landslides, Coastal Flooding, Groundwater Flooding, Fluvial Flooding.

LU (University) - Anthropogenic subsidence (includes subsidence due to extraction of water), Compressible Sediments (?), Geodynamics (includes seismotectonics).

IGME GR - Earthquakes, Landslides, floods, volcanoes, settlements, ground collapse.

ISPRA - Earthquakes, volcanic activity, tsunamis, flooding, landslides, avalanches, subsidence...

LGT - Karst, landslides, suffosion, erosion.

MANRE - Sinkholes in gypsum terrain, landslides, swelling clays, earthquakes, airborne asbestos fibres, tsunamis.

BUL – No answer

BGS - Shrink-swell clays; running sands; karstic dissolution; compressible ground; collapsible ground; landslide; flooding; anthropogenic subsidence; radon; methane, very minor effects of earthquakes.

16. Do you, the Geological Survey hold the geohazard data for your country/cities in PanGeo?

Yes

18

No

8

If not who does hold the Geohazard data and do you have access to use it in PanGeo?

EGK – No official data holders

BRGM – Partly. The data to be included in the final geohazard product have to be defined

SGU – We hold some of the data. At the moment I am not sure exactly what type of data we need, but most data he by government authorities is available to SGU via a geographic data exchange portal.

BGR - We have access via our partners in the state geological surveys

IGME GR – In Murcia yes. In Zaragoza No. Only basic. More elaborated information is available in the Regional Government and the University of Zaragoza, and we will try to have access to use it in PanGeo.

LU – Latvian Environment, Geology and Meteorology Centre. Ministry of Economics.

ISPRA – Some of them. Others must be obtained locally.

LNEG - In part, specially those concerning seismic hazard

17. Does your Geological Survey actively collect information on Geohazards and/or information on factors that might lead to a geohazard?

Yes	24
No	3

18. If you do collect geohazard data, for which hazards do you collect data, if so what format is it in?

	Paper reports	Digital reports	GIS data
Landslides	20	19	19
Anthropogenic subsidence includes subsidence due to extraction of water, brines, hydrocarbons, etc, as well as mining-related subsidence	14	12	11
metastable loesses	2	1	2
Shrink Swell	5	6	4
Running Sands	4	2	2
Seismic	12	13	8
Volcanic	5	5	4
Dissolution	9	7	6
Compressible Sediments	5	4	4
Fluvial Flooding	8	7	6
Groundwater Flooding	5	6	4
Coastal Flooding	4	4	4
Other	0	0	3

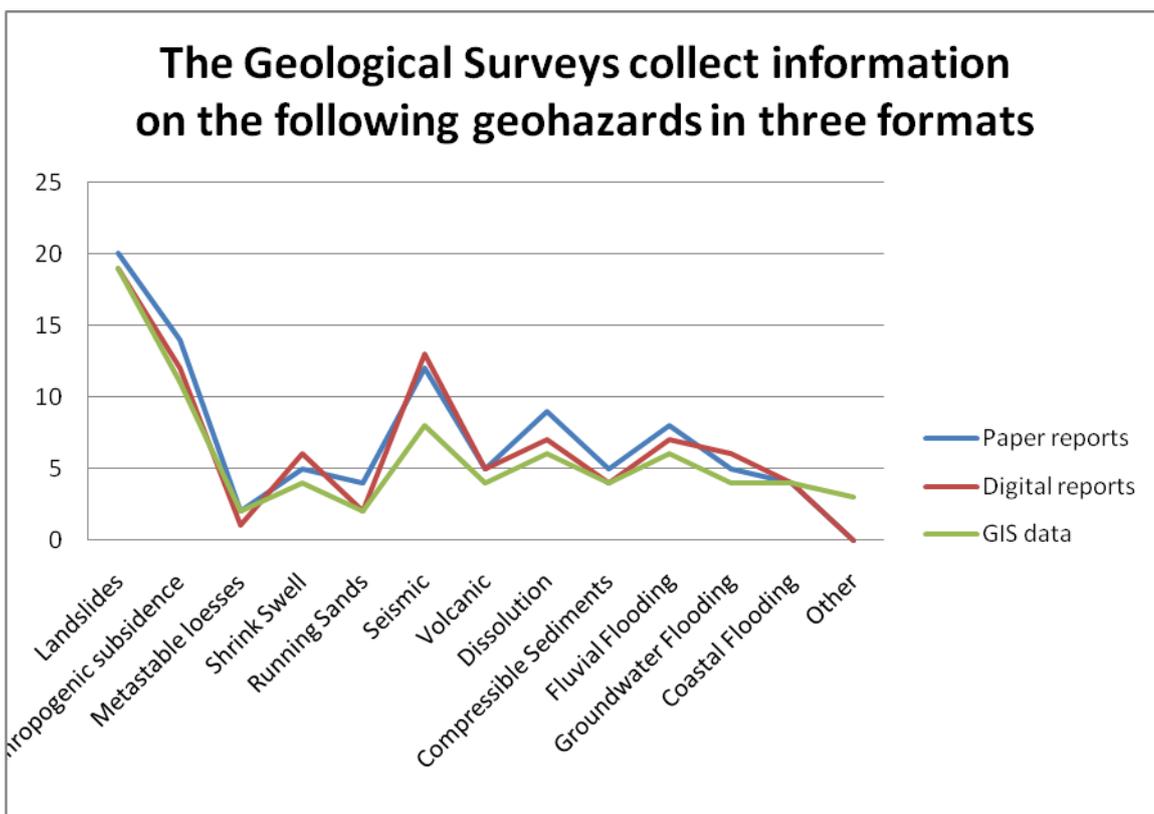
Other (please specify) _____

Data in GIS format was listed for three other geohazards as follows:

GeoZS - Active tectonics, which is closely related to earthquakes (but we do not operate the seismic monitoring network)

SGU – radon

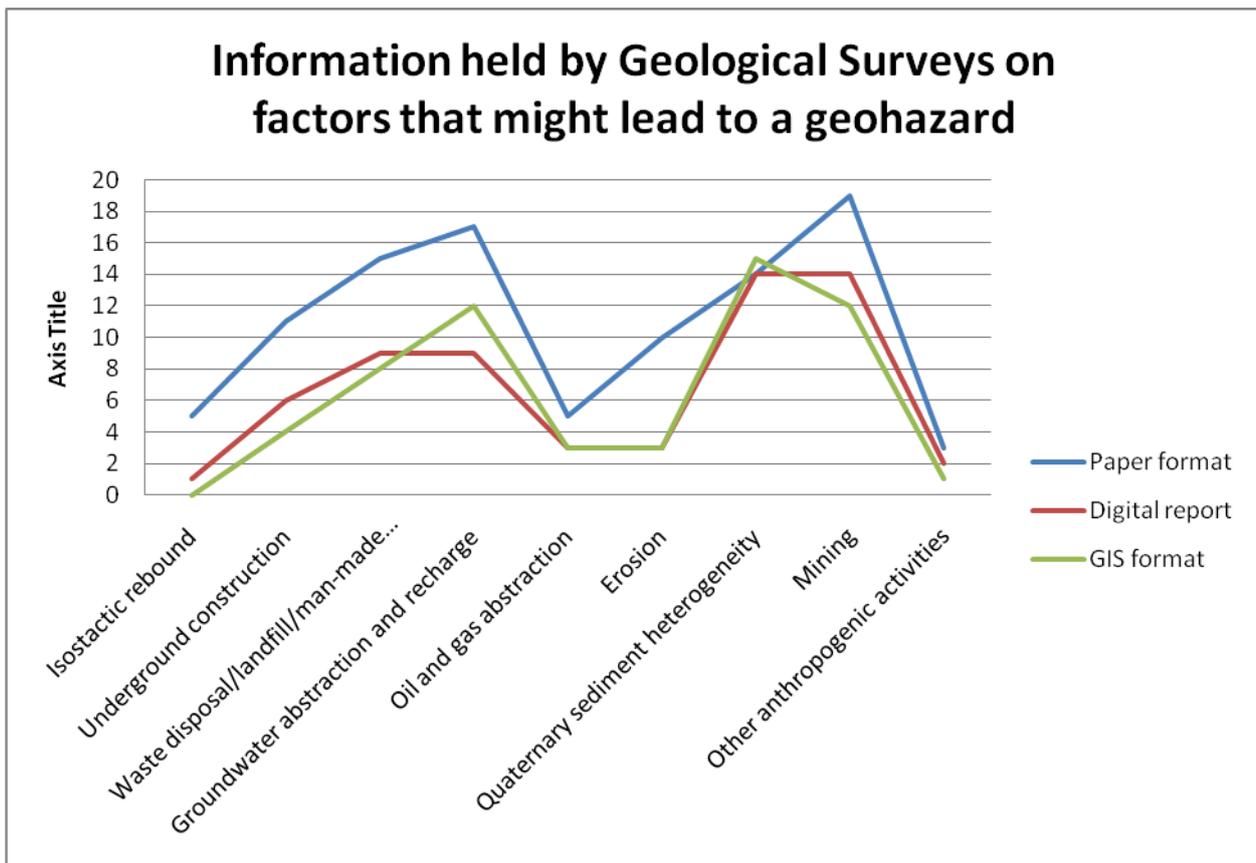
LU – coastal erosion



19. Do you hold any information on factors that might lead to a geohazard, if so what format is it in?

	Paper reports	Digital reports	GIS data
Isostatic rebound	5	1	0
Underground construction	11	6	4
Waste disposal/landfill/man-made ground	15	9	8
Groundwater abstraction and recharge	17	9	12
Oil and gas abstraction	5	3	3
Erosion	10	3	3

Quaternary sediment heterogeneity	14	14	15
Mining	19	14	12
Other anthropogenic activities	3	2	1
Other (please specify) _____			

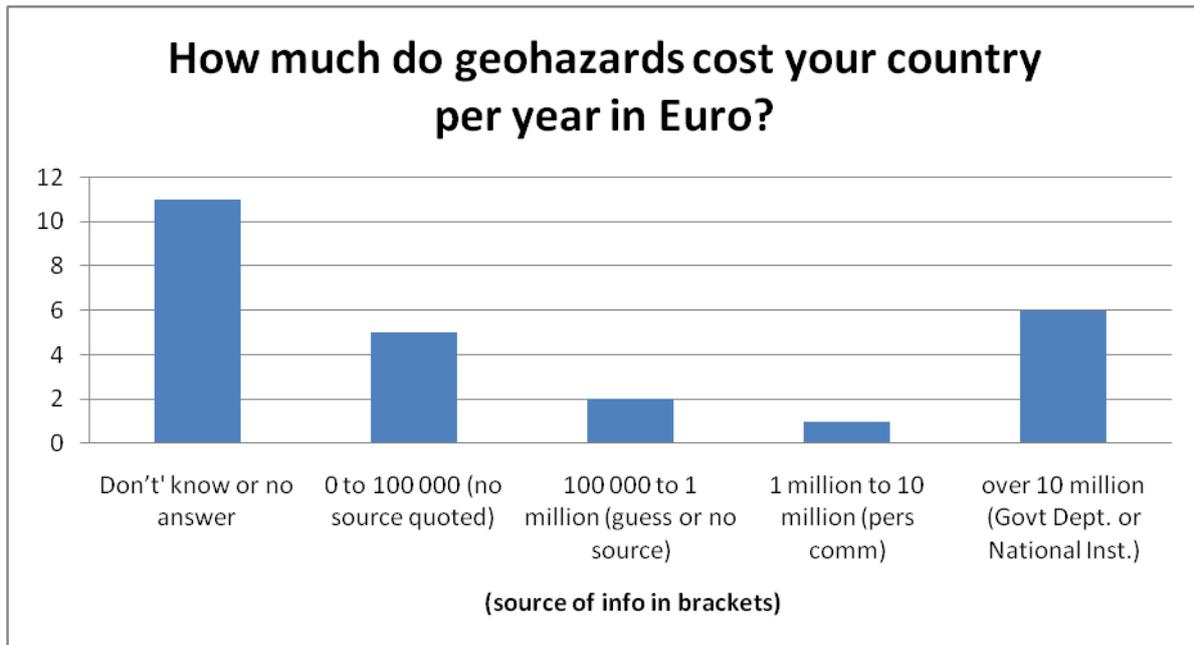


20. How much do geohazards cost your country per year?

0 – 100 000 Euro	11
100 000 to 1 million Euro	5
1 million to 10 million Euro	2
over 10 million Euro	1
Don't know, or no answer	6

Principal source of information:
(please specify) _____

The principal source of information ranges from “wild guess” to national statistics institutes. The sources are noted in the chart below.



21. Do you have information that you can use to validate the geohazards identified in PanGeo?

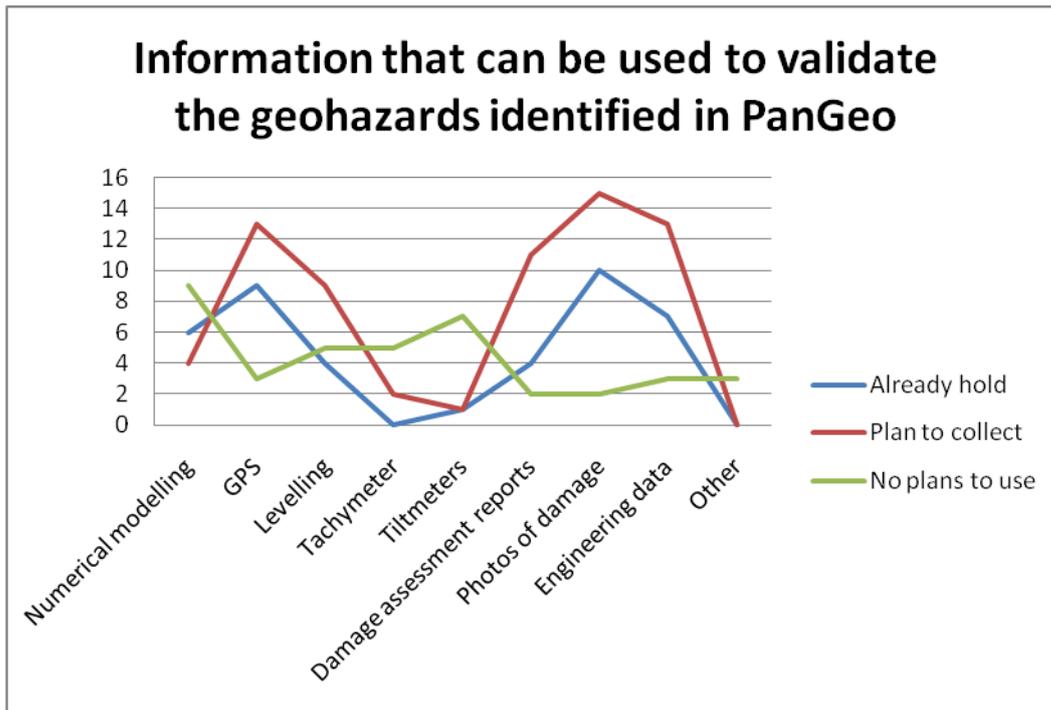
	Already hold	plan to collect	No plans to use
Numerical modelling	6	4	9
GPS	9	13	3
Levelling	4	9	5
Tachymeter	0	2	5
Tiltmeters	1	1	7
Damage assessment reports	4	11	2
Photos of damage	10	15	2
Engineering data	7	13	3
Other	0	0	2

Other (please specify) _____

Additional comments were received

GeoZS – The scope of numerical modelling is unclear; NM of what?

IGME ES – We will use extensometers



4.5 AUXILIARY DATA AND INFORMATION

22. What type of auxiliary information/data do you have available to you to help interpret the PSI data? Are you able to publish any of this information/data on the PanGeo portal? And what is the scale of this data?

	Integrate with PSI data	Publish on PanGeo portal	Scale of data
Geological Maps (2D)	27	21	_____
Geological Models (3D)	9	2	_____
Elevation Models	20	4	_____
Topographical maps	24	6	_____
Historical maps	18	7	_____
Geohazard data	19	9	_____
Mining plans	12	0	_____
Engineering data	13	1	_____
Other (please specify)	_____		

The scale of data available was highly variable (when provided), ranging from 1:2,500 to 1:1m.

The issue of publishing the data on the PanGeo portal received xx comments:

BRGM – rights have to be checked

SGU – data included in OneGeology / INSPIRE

MRA – N/A

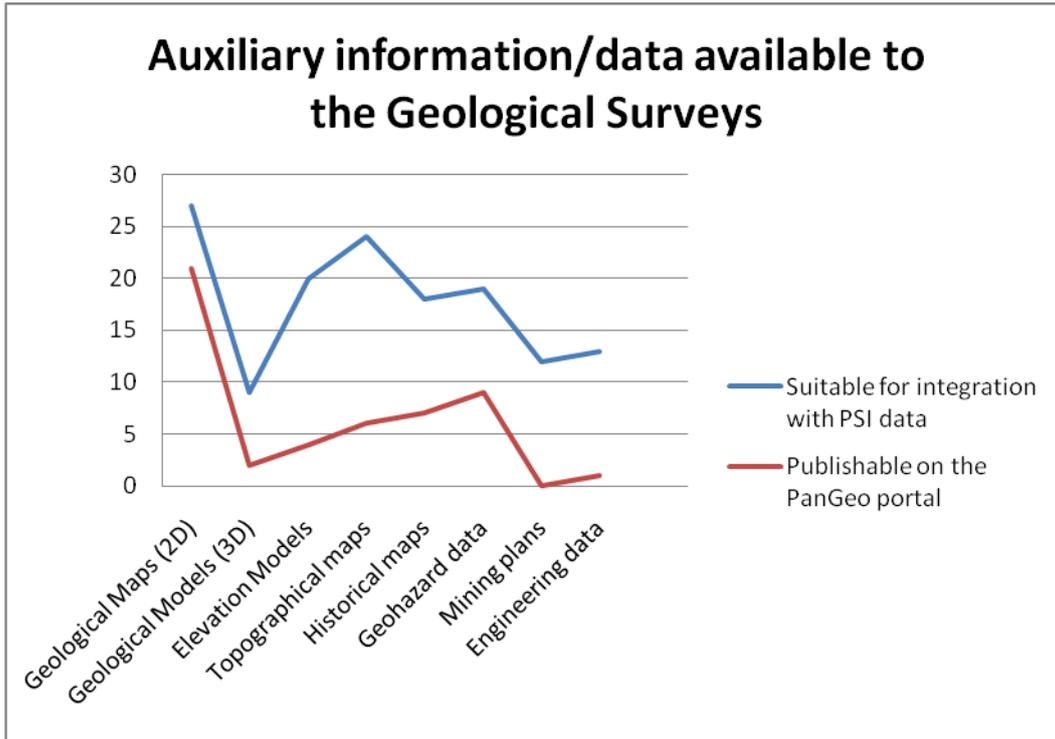
BGR – has to be clarified for every specific case

SGL - Elevation models , topographic and historic maps submitted to permission of 'Administration du cadastre et de la topography', the governmental body in charge of these. But theoretically and technically feasible (cf. <http://map.geoportal.lu/?lang=en> for example)

MANRE – we will need permission first

LNEG – raster format

BGS - Data at coarse scales, e.g. already provided in OneGeology can be added to the PanGeo portal. Copyright for other data such as elevation models and topo data are held elsewhere.



23. Does the information/data you plan to integrate with the PSI dataset cover the area to be processed by the PSI providers for the town(s) you are going to work on?

Yes

No

24. In what coordinate system would you like to work in and therefore have the PSI data delivered in?

Coordinate system Name _____

Datum _____

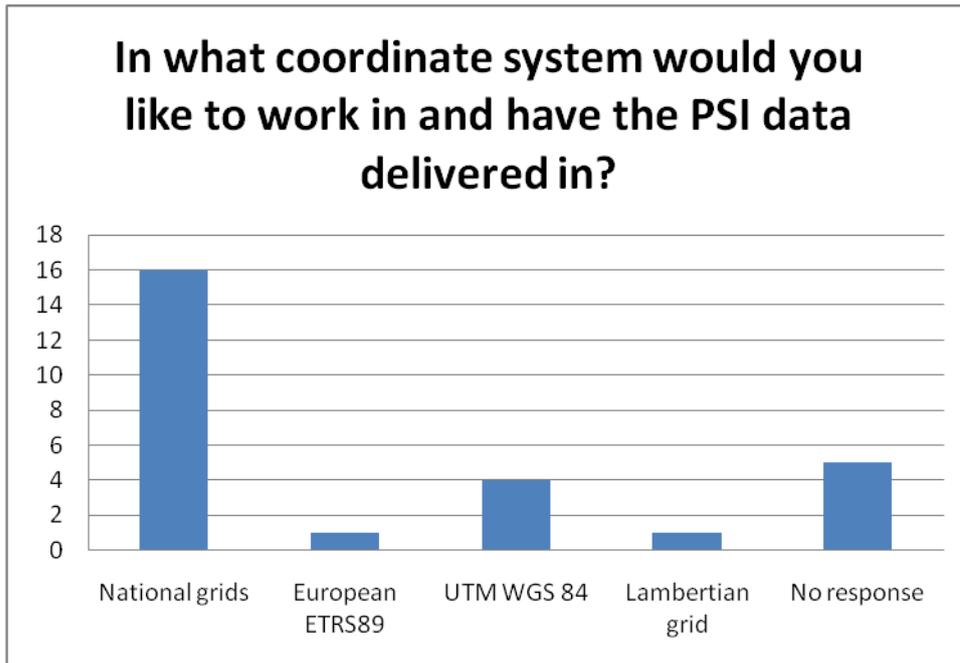
Spheroid _____

Central Meridian _____

False Easting _____

False northing _____

Scale factor _____



25. Are you aware of the Urban Atlas?

Yes	20
No	7

26. Have you used the Urban Atlas data?

Yes	2
If yes what for (please specify) _____	
No	25

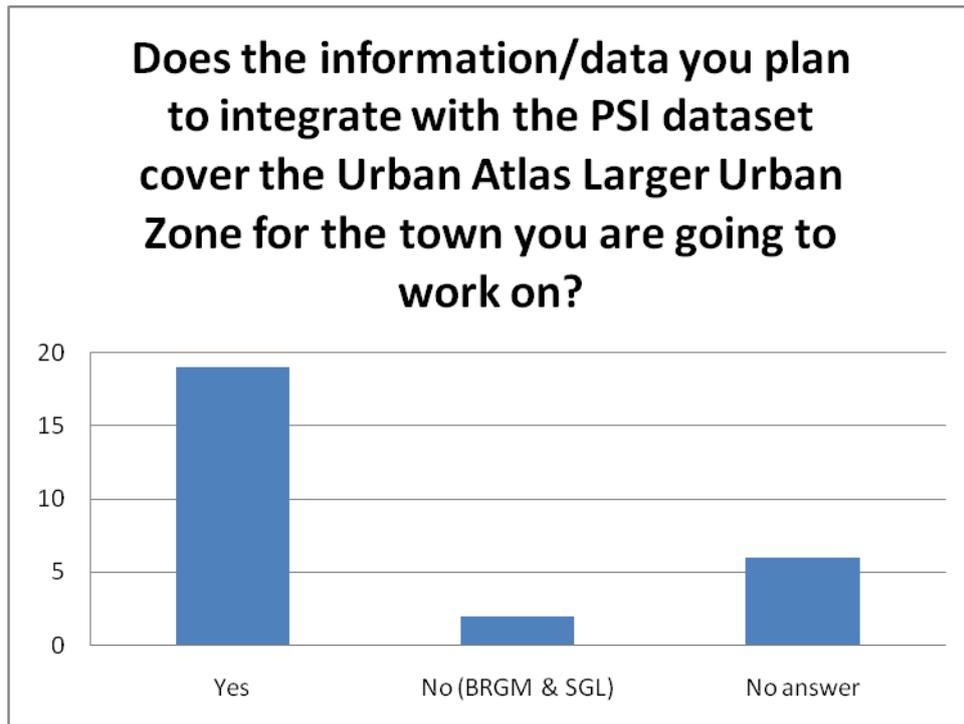
The two Surveys that have used the Urban Atlas added information regarding Urban Atlas usage:

GeoZS - No professional use, just for browsing and information gathering

PGI - dissemination of knowledge on the geohazards

27. Does the information/data you plan to integrate with the PSI dataset cover the urban Atlas Larger Urban Zone for the town you are going to work on?

Yes	19
No	2
No answer	6



4.6 POLITICS

28. What do you think is the more acceptable term for the PanGeo information layer that we shall create?

GeoHazard layer	11
Ground Stability layer	14
No answer	2

Other comments _____

Five comments were received:

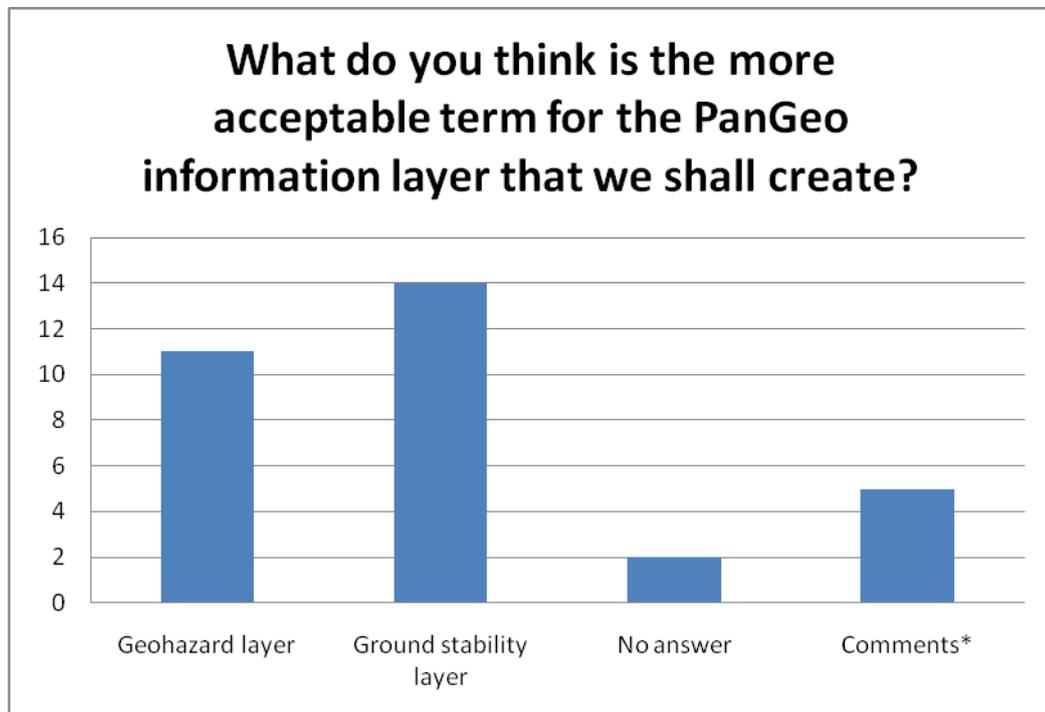
BRGM – Ground displacement layer

SGU - We would like to add layers which do not have to do with ground movement

SGL - Not sure what is meant precisely by these two terms, but I would opt for a more restricted view (and term), as there may be geohazards that are probably not or not fully covered (volcanic, seismic) in PanGeo

LU - It would be useful to examine the relationship of surface crustal dynamics with the deep structures

LGT – ‘Ground Stability Layer’, not exactly but very close



29. Who is the mandated or de facto authority for geohazards in your country?

Geological Survey	11
Civil protection authority	11

If so which authority _____

SGU – MSB, Myndigheten for Samhallsskydd och Beredskap (Swedish Civil Contingency Agency)

MRA – Operations Centre, Ta’Kandia, L/O Siggiewi

PGI - 1. Voivodeship Board for Crisis Responding, 2. District (powiat) Board for Crisis Responding, 3. Commune Board for Responding

LU – The State Fire and Rescue Service (SFRS)

IGME GR – General Secretariat of Civil Protection

ISPRA – Civil Protection Department

LGT – Fire and Rescue Department under the Ministry of the Interior of the Republic of Lithuania

LNEG - ANPC-Agência Nacional para a Protecção Civil

BGS – Coal Authority

Government department

12

If so which Department _____

GTK – Ministry of Agriculture for flooding, and Ministry of Environment for landslides

GeoZS - Environmental Agency of Slovenia - Seismic network & floods

BRGM – the decision can be taken at the regional prefecture levels and others at the Ministry level

PGI - Governmental Board for Crisis Coordination (National Center for Coordination of Rescue Operations & Protection of Population)

LU - Ministry of Environmental Protection and Regional Development

LGT – Environmental Protection Agency

MANRE - The Ministry of Interior Technical Services has authority over some geohazards like flooding and rescue missions after events like earthquakes and floods

BGS – Defra (Department for the Environment, Food and Rural Affairs)

Other (please specify) _____

GeoZS – It depends on the type of geohazard

RBINS – Administrations of the different regions

BGR – Depends on every specific case

PGI – PGI (mass movements i.e. landslides), Institute of Meteorology and Water Management (floods)

IGME ES - This question is unclear. Nevertheless, the Spanish Geological Survey performs a consultancy activity in terms of geohazards to the different administrations when it is required. But the authority for geohazards is distributed in the different national, regional and local administrations.

LU - Latvian Environment, Geology and Meteorology Centre

IGMA GR - Specific Organisations such as: Agency Earthquake Planning and Protection Organisation (EPPO)

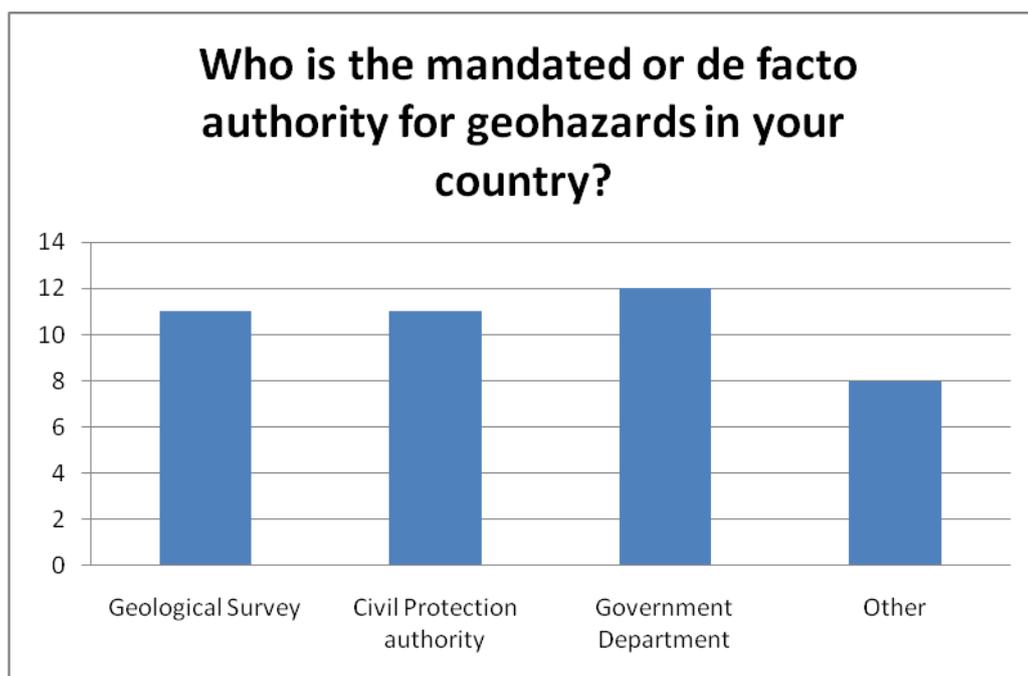
BGS – Environment Agency

If the authority is different for different hazards or different aspects of the hazards (such as prediction, monitoring, warning etc) then please specify here:

BRGM - prediction/monitoring Ministère de l'Ecologie warning/crisis Ministère de l'Intérieur.

PGI - Polish Geological Institute (mass movements i.e. landslides), Institute of Meteorology and Water Management (floods).

IGME GR - Geological Survey is responsible for Landslides - ground movements and Volcanoes Agency Earthquake Planning and Protection Organisation (EPPO) is for Earthquakes, and General Secretariat of Civil Protection is responsible for disaster management.



4.7 THE PANGEO GEOHAZARD SUMMARY

30. Would you find it valuable for the geohazard summary document to work as a stand alone document as well as an online document linked to the hazard polygons in the portal?

Yes
 No

31. What language do you think the geohazard summary document for your towns should be in?

Local Language (please specify) _____
 English
 Both of the above
 Other (please specify) _____

Local languages specified:

Finnish, Swedish, Slovenian, French, Slovak, Maltese, German, Polish, Latvian, Greek, Hungarian, Lithuanian, Bulgarian, Portuguese.

32. For each hazard area identified in PanGeo what information do you think it would be valuable to capture in the summary document?

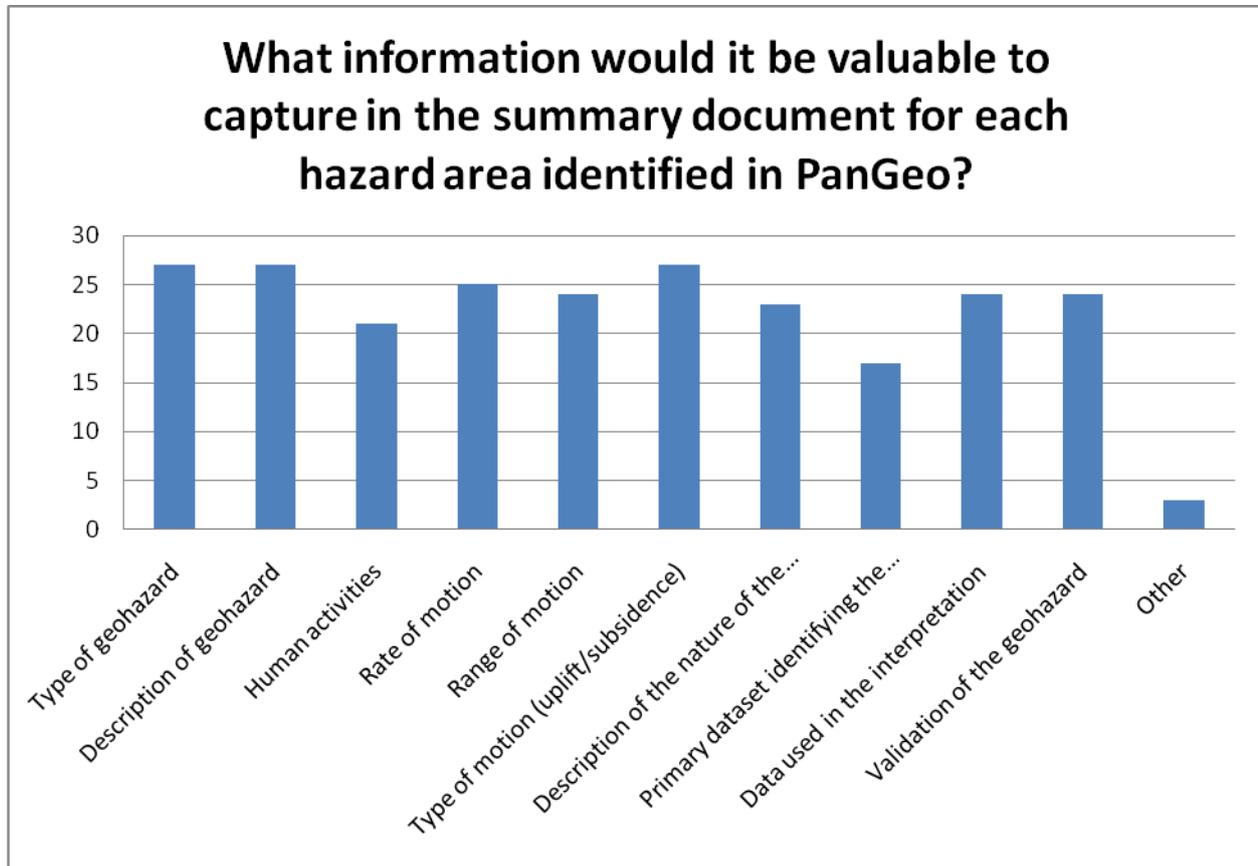
Type of geohazard	<input type="text" value="27"/>
Description of geohazard	<input type="text" value="27"/>
Human activities that might increase or realise the potential for a geohazard	<input type="text" value="21"/>
Rate of motion	<input type="text" value="25"/>
Range of motion	<input type="text" value="24"/>
Type of motion (uplift/subsidence)	<input type="text" value="27"/>
Description of the nature of the motion	<input type="text" value="23"/>
Primary dataset used to identify the motion	<input type="text" value="17"/>
Data used in the interpretation	<input type="text" value="24"/>
Validation of the geohazard	<input type="text" value="24"/>
Other (please specify)	

Replies under 'Other' consist of:

MRA - Catalyst to Geohazard occurrence (i.e. Excessive Sustained Precipitation in the case of flooding).

BGR - Information should be completed by comments on reliability of this information; description of nature of motion may have character of speculation depending on level of validation

BGS - Time period over which the hazard has been identified would also be useful.



4.8 PANGEO PORTAL

33. Would you be willing to carry out a small amount of translation so that the PanGeo portal can be presented in your local language?

Yes	18
No	8
No answer	1

34. What information would you like to see displayed on the PanGeo portal?

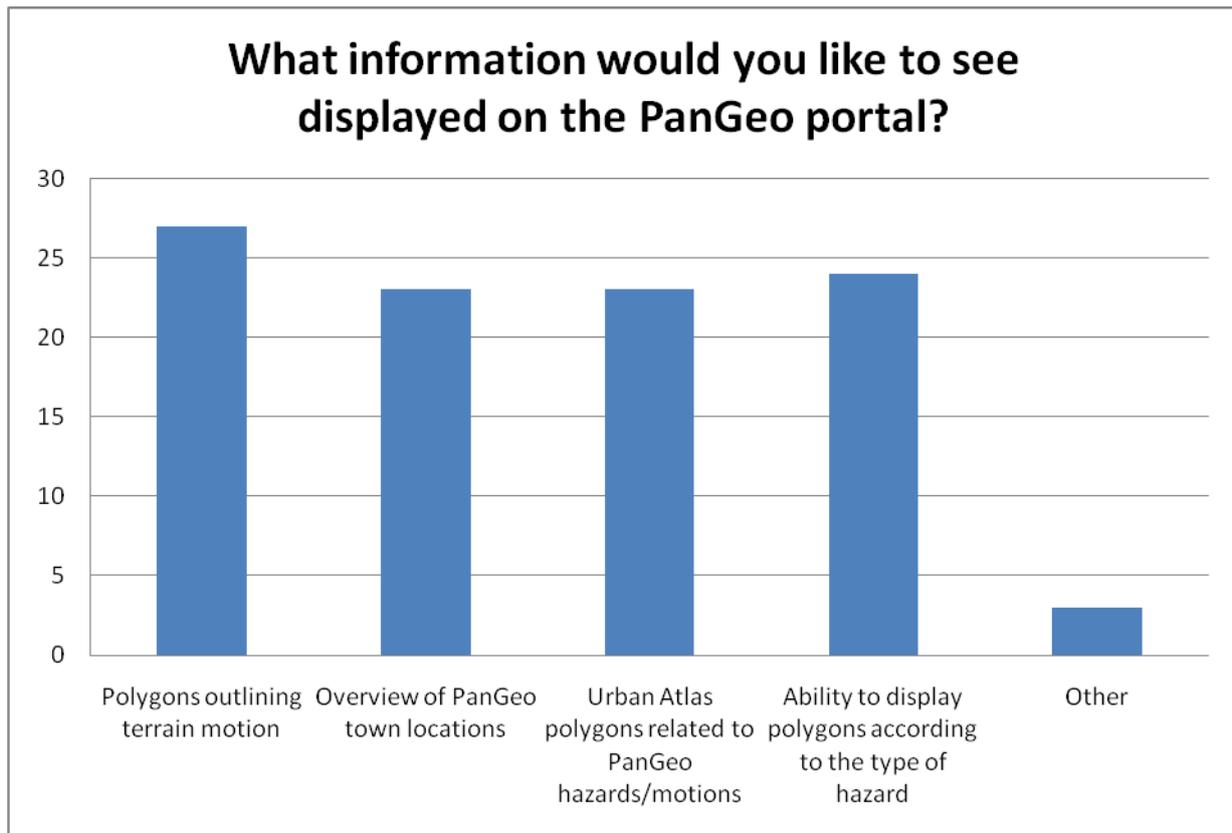
Polygons outlining terrain motion	27
Overview of PanGeo town locations	23
Urban Atlas polygons related to PanGeo hazards/motions	23
Ability to display polygons according to the type of hazard	24
Other (please specify)	

Other information that the Geological Surveys would like to see on the PanGeo portal:

SGU - Other geohazards than those defined by ground motion, e.g. radon, should be included.

MRA - Photographic metadata.

BGS - Baseline data such as Google or Bing maps. A warning about suitable scales of data use, so that when the user zooms in beyond a certain scale a warning appears that the data may not be valid.



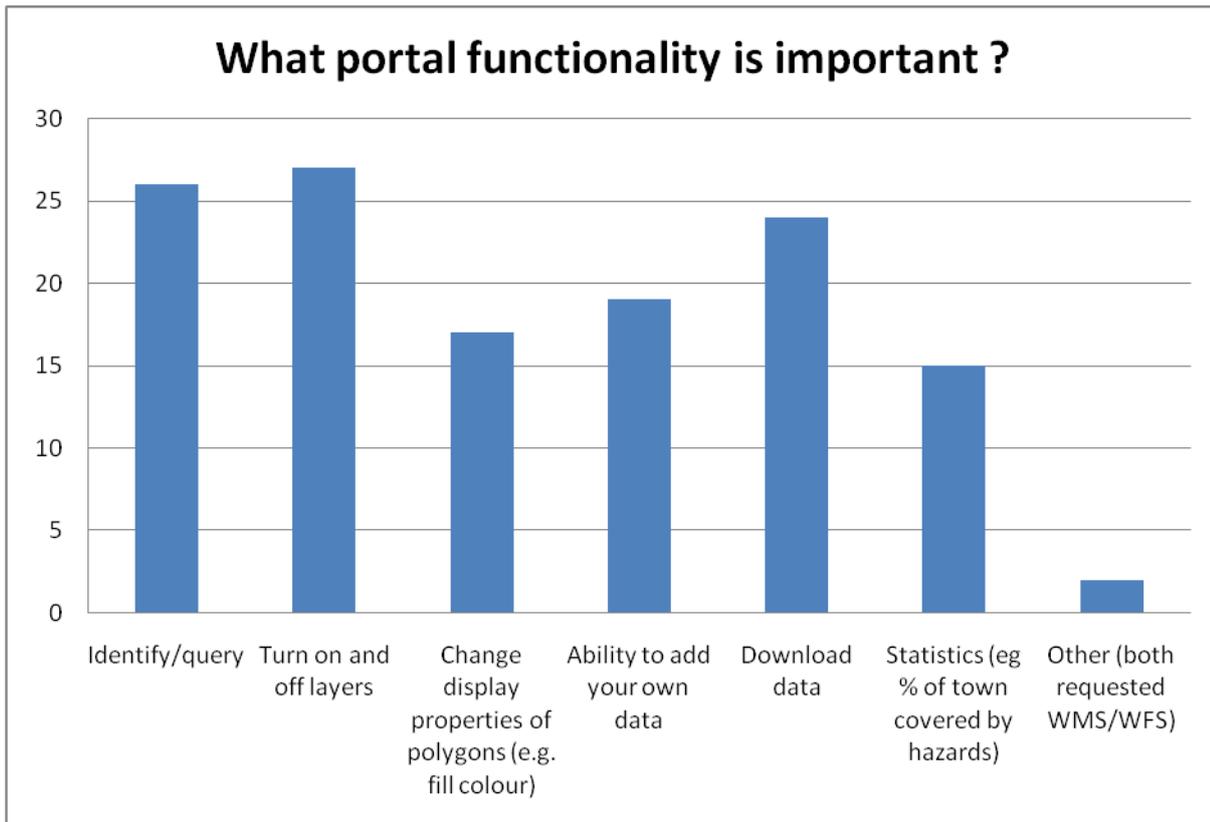
35. What portal functionality is important to you?

Identify/query	26
Turn on and off layers	27
Change display properties of polygons (e.g. fill colour)	17
Ability to add your own data	19
Download data	24
Statistics (e.g. % of town covered by hazards)	15
Other (please specify)	

Two additional sets of functionality were requested:

PGI - Web Map Service (WMS) and Web Feature Service (WFS)

ISPRA – WMS services



36. How would you use PanGeo hazard information available in the portal?

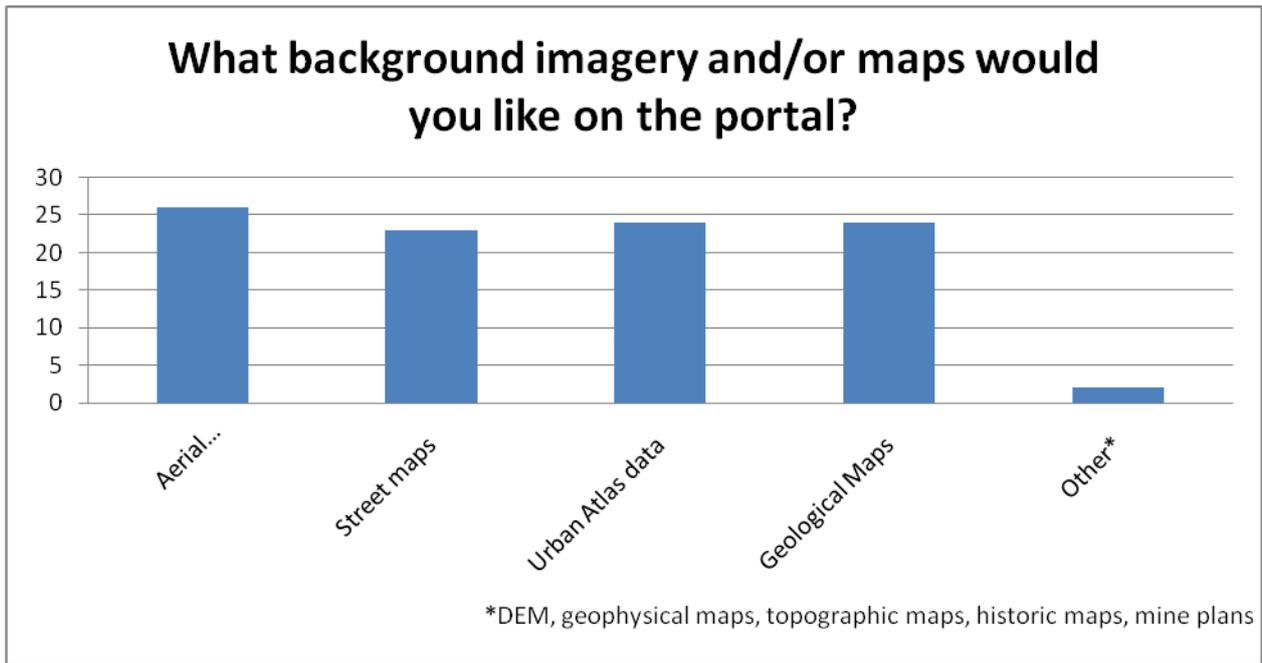
View it in the portal/load your data into portal	1
Download and integrate in own GIS	1
Both of the above	25

37. What background imagery and/or maps would you like on the portal?

Aerial Photography/satellite imagery	26
Street maps	23
Urban Atlas data	24
Geological Maps	24
Other (please specify)	

GSI – DEM.

BGS - Historic maps, Mine plans, as much auxiliary data as can be made available



38. If you would like to see geological maps as a background dataset, are you able to make the geological maps for your country available to go on the PanGeo portal? (If you were involved in OneGeology Europe then some of your geological maps are already available)

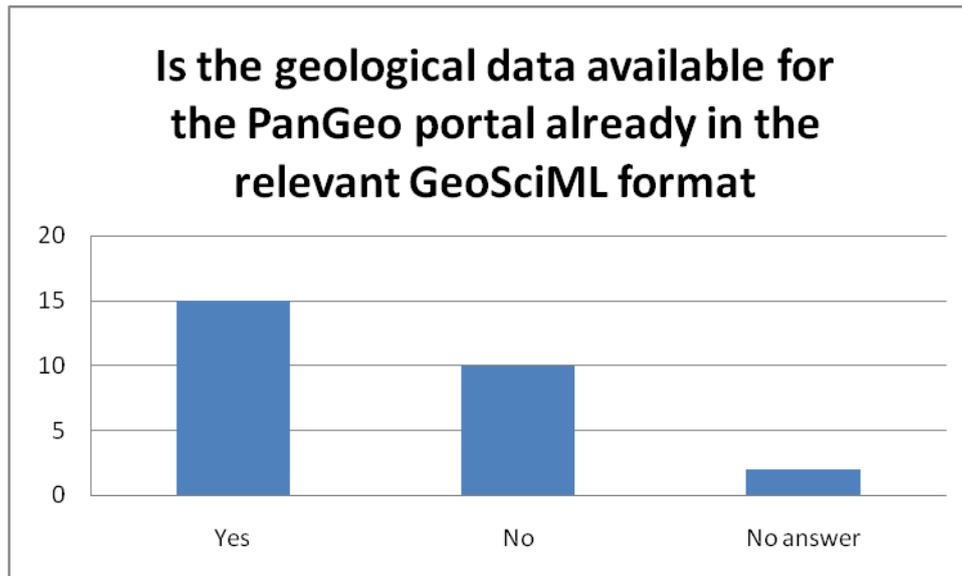
Yes	23
No	2
No answer	2

If yes then what scale of geological mapping could you make available?

The scale ranged from 1:5000 to 1:1m.

39. If you are able to make geological data available for the PanGeo portal is it already in the relevant GeoSciML format (Onegeology-Europe format)?

Yes	15
No	10
No answer	2

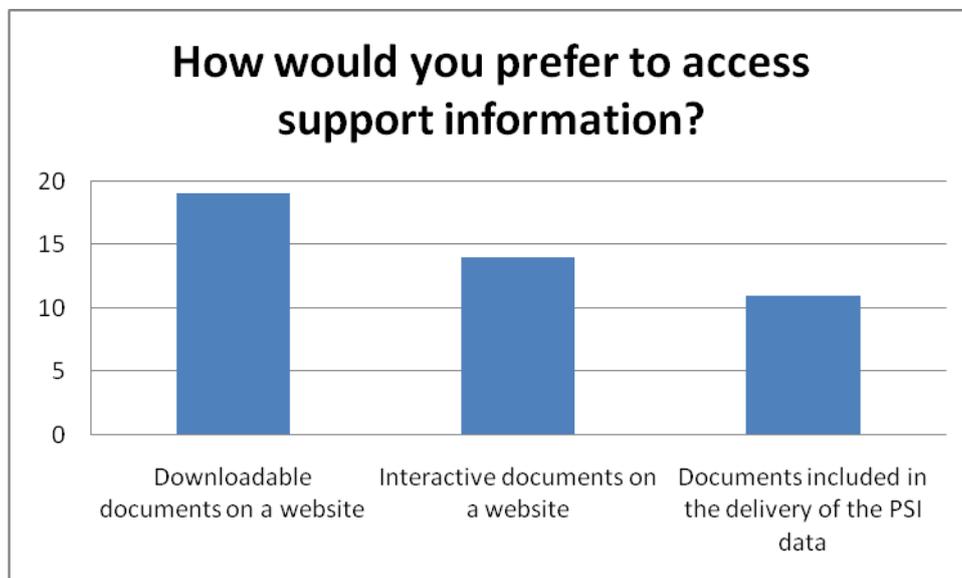


4.9 SUPPORT INFORMATION FOR THE CREATION OF PANGEO INFORMATION

Support information will be available for all Geological Surveys. This will include a step by step guide to how to produce the PanGeo product and also all the specifications required for the output data formats and web hosting requirements.

40. How would you prefer to access support information?

Downloadable documents on a website	19
Interactive documents on a website	14
Documents included in the delivery of the PSI data	11



41. OneGeology used a ‘buddying’ system, where Geological Surveys with less experience of hosting data on servers were paired with more experienced Geological Surveys. Did you take part in the OneGeology buddying system? If so did you find it useful?

Yes, we took part	10
No we did not take part	13
No answer	4

If yes then did you find it useful? _____

All respondents who took part in the OneGeology ‘buddy’ system found it useful.

Would you like to be considered for a buddy system in PanGeo as

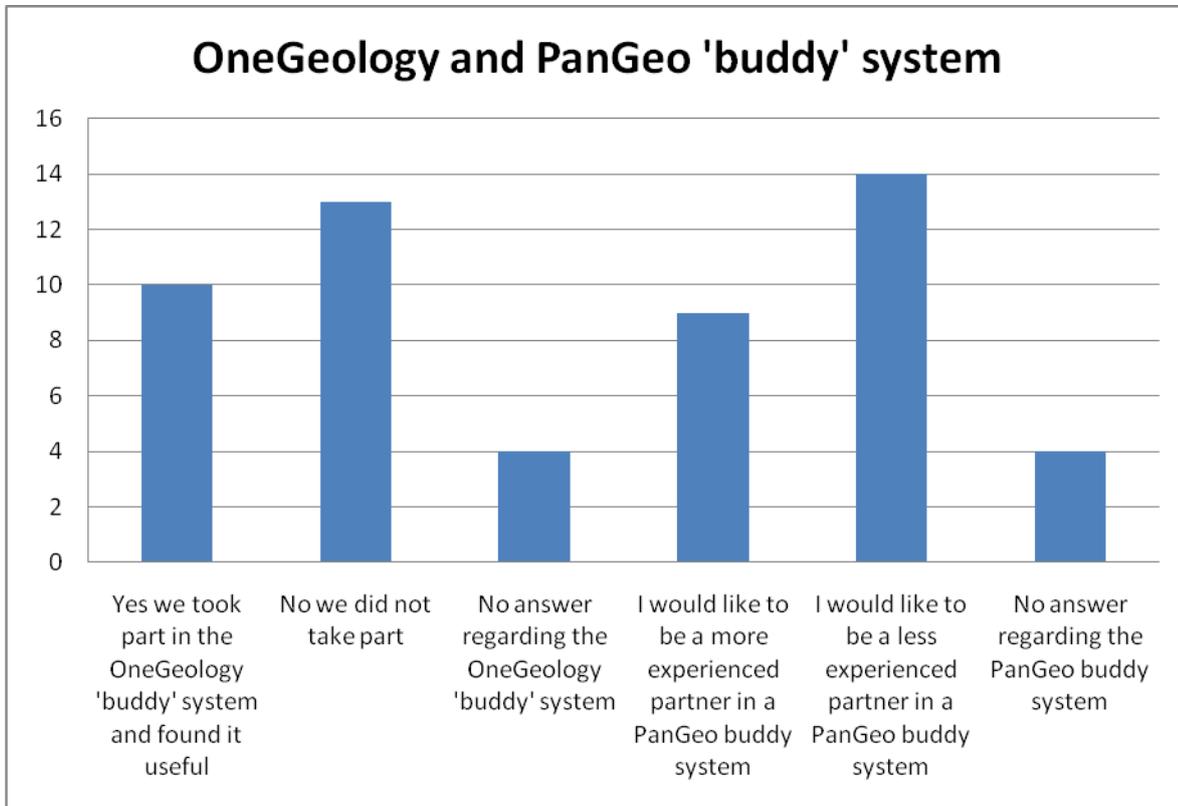
A more experienced partner	9
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A less experienced partner?

14

No answer

4



4.10 THE FUTURE OF PANGEO

42. Which other towns in your country do you think it would be valuable to have PanGeo geohazard information available for?

Oulu, Velenje basin, Pärnu, Paris, Lille, Marseille, Bratislava, Trnava, Žilina, Banská Bystrica, Nitra, Trenčín, Stockholm, Malmo, Gota alv river valley, Kiruna, Malmberget, Charleroi, Gent, Namur, towns in Ruhr and Aachen areas, Upper Silesian Coal mining region (Katowice, Ruda Slaska, Gliwice), Limerick, Galway, Waterford, Dundalk, Tralee, all of Luxembourg, Madrid, Barcelona, Valencia, Sevilla, Aizkraukle, Daugavpils, Ventspils, Jelgava, Valmiera, Sigulda, Cesis, Thessaloniki, Patra, Pecs, Szolnok, Szeged, Sopron, Veszprem, Gemoa, Naples, Panevezys, Pasvalys, Birzai, Lemosos, all the 20 main towns of Portugal

4.11 OTHER INFORMATION

43. Please supply any other information or opinions that you think are important for the design of the PanGeo service and the methodology for creating this service.

GeoZS - Buddy system usually poses big burden to the hosting partner as "visiting" partners do not follow guidances for data preparation.

SGU - This questionnaire had a bad timing - Summer is typically a period of fieldwork and vacation and few people in the office - I would have a made a better and more informed job with this in the spring (or with a longer response time).

MRA - training courses and workshops

BGR - Buddying system: developed experience mentioned above is available in another subdivision; BGR was experienced buddying partner of African country for OneGeology. The above input has to be considered preliminary and can be modified depending on availability of updated information.

PGI - Web Feature Service (WFS) should be taken into account in the PanGeo service

GSI - Strong liaison between PSI processor and geological survey through the processing

SGL - More of these forms that are a precious way of giving structured and valuable feedback from the GS's.

LU - Very important information is about the correlation between PSI, GPS, Levelling and which method is better correlate with dynamics of deep tectonic structures.