



## GEONETCAB: GEO Network for Capacity Building

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### **Inventory of the Current Situation, Identification of Opportunities and Bottlenecks - Polish context**

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## WP1&2 - Inventory of the Current Situation, Identification of Opportunities and Bottlenecks - Polish context

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## Introduction

This report is based on the research conducted at the Space Research Centre of Polish Academy of Sciences (SRC PAS) within the project GEONetCab (GEO Network for Capacity Building). The aim of the research was to identify opportunities and bottlenecks on the Polish market concerning earth observation (EO) sector. The report covers political, economical and human capital issues concerning the case. It gives an overview of the current situation and suggests possible recommendations for the future.

## Methodology

The report is based on the market research, which consisted of Internet research, contact with the producers and users of EO data, questionnaires sent to them and face-to-face meetings (among them the GMES Committee meeting with the potential GMES users, which was held on October, 4<sup>th</sup> 2010). The survey was carried out among selected private companies, scientific institutions, universities and public institutions that are producers, users or educators in the EO sector in Poland.

SRC PAS has carried out two surveys based on questionnaires.

The first was sent to about 50 companies and institutions from the EO sector and related sectors, both public and private (the questionnaire can be found in the Appendix 1). In response 16 questionnaires were sent back. Based on the answers of the respondents and further individual interviews with the companies, the evaluation of the situation of EO sector in Poland was prepared and is described in this report.

The second survey was carried out among crisis management centers that were operationally involved in rescue activities during the severe floods in Poland in May and June 2010. The questionnaires were sent to 26 units and 19 were sent back (the questionnaire can be found in the Appendix 2).

The most important questions in the distributed questionnaires were:

Who are the customers of your company?

What barriers restrain the demand for the EO products?

What barriers restrain the development of the EO sector in Poland?

Which advantages and disadvantages of satellite maps can you indicate?

Is your institution going to use satellite based products in the future?

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## I. Existing capacity in Earth Observation sector in Poland

### 1. Background of needs in Poland

Almost all the GEO satellite-based systems are of interest of Poland. The choice of the most relevant areas for applications would be: ecosystems, water (including disasters) and climate change.

The area covered by Natura 2000 sites amounts to 20% of Poland's territory. This puts tough requirements on monitoring the protected ecosystems and opens a window of opportunity for using EO data. An efficient strategy of purchasing and employing satellite images is therefore urgently needed.

In Poland there is a deficit of water in general. During the last 10 years episodes of droughts have been more frequent and of longer duration than during the previous decades.

On the other hand, there have been occasions of catastrophic floods, on a big scale (like the flooding in 1997 and in 2010) and more frequent regional ones that happen nearly every year and cause huge damage to agriculture, transport and small towns. EO based tools for water resource management, early warning of flooding and crisis management are not yet regularly used by administration and government.

Climate change is an important issue for the country, since Poland is geographically located in the transition zone between continental and ocean climate. In recent years the natural fluctuation of seasons has been broken and many unexpected weather and climatic phenomena have been evidenced (e.g. frequent wind storms, no snow in winter). Moreover, the development of the cities is causing the need to use EO techniques for urban and spatial planning.

### 2. Market review

#### 2.1. Government and the EO sector

With respect to the governmental responsibility in the EO sector, we can indicate following institutions:

- Ministry of Science and Higher Education (previously Chief Inspectorate for Environment Protection) - responsible for GEO&GMES; GMES Committee since June 2010
- Chief Inspectorate for Environment Protection: National Environmental Monitoring Program: distribution of ozone based on NOAA ATOVS, monitoring of coastal waters, lakes and rivers, monitoring of alga bloom; CORINE (contact point with EEA)
- General Directorate for Environmental Protection - European Ecological Natura 2000 Network
- Agency for Restructuring and Modernization of Agriculture - IACS (Integrated Administration and Control System).



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## 2.2. Science, R&D and educational institutions

More than 50 institutions are teaching and conducting research in the areas such as: photogrammetry, remote sensing (agriculture, land use/land cover maps, wetlands monitoring, forest monitoring, urban planning, DTM), cartography etc. These institutions are also processing the EO data for the needs of their research and projects, so they are considered as product providers as well as clients of the data/imagery.

Scientific and R&D institutions are the leaders in EO data processing and experience with remote sensing projects, in which EO data are basic inputs. Institutes such as The Institute of Geodesy and Cartography, The Institute of Meteorology and Water Management, The Institute of Oceanology or The Institute of Geophysics PAS have introduced remote sensing techniques to their scientific investigations of land, atmosphere and oceans, respectively. Space Research Centre PAS has had also a rich experience in the field, thanks to the existence of GMES Group, which is leading the EO projects from this programme.

### a) R&D Units

- Institute of Geodesy and Cartography - Remote Sensing Department (the most active in this field)
- Institute of Meteorology and Water Management
- Institute of Spatial Management and Housing

### b) Science Institutions (Polish Academy of Sciences)

- Space Research Centre PAS - GMES Group
- Centre for Ecological Research PAS
- Institute of Environmental Protection PAS
- Institute of Geography and Spatial Organization PAS
- Institute of Geological Sciences PAS
- Institute of Geophysics PAS
- Institute of Oceanology PAS
- Mineral and Energy Economy Research Institute PAS

### c) Universities

The higher education offer related with remote sensing is quite rich in Poland. Remote sensing is taught on the faculties such as Geodesy and Cartography, Geography or Geomatics and it is possible to choose remote sensing as specialization there. However, it is not the most popular choice of the students.



	University	Dept.	City
1	Jagiellonian University	Dept. of GIS, Cartography and Remote Sensing	Kraków
2	AGH University of Science and Technology	Dept. of Geoinformation Photogrammetry and Remote Sensing of Environment	
3		Dept. of Geoinformatics and Applied Computer Science	
4		Dept. of Geomatics	
5		Dept. of Mining Areas Protection, Geoinformatics and Mining Surveying	
6	University of Agriculture	Dept. of Forest Ecology	
7	University of Silesia	Dept. of Geomorphology	Sosnowiec
8		Dept. of General and Prospecting Geology	
9	University of Zielona Góra	Division of Public Safety Management	Zielona Góra
10		Dept. of Geotechnics and Geodesy	
11	Military University of Technology	Division of Geoinformation	Warszawa
12		Division of Remote Sensing and Photogrammetry	
13		Division of Applied Geomatic	
14	Warsaw University of Life Sciences - SGGW	Dept. of Forest Management, Geomatics and Forest Economics	
15		Division of Geodesy and Photogrammetry	
16	The Main School of Fire Service	Educational Centre of Public Safety	
17	Warsaw School of Economics	Centre for Information Systems	
18	Warsaw University	Dept. of Cartography	
19		Dept. of Geoinformation and Remote Sensing	
20	Warsaw University of Technology	Dept. of Remote Sensing, Photogrammetry and GIS	
21		Division of Cartography	
22	Nicolaus Copernicus University	Dept. of Cartography, Remote Sensing and GIS	Toruń
23	University of Wrocław	Division of Regional Geography and Tourism, Remote Sensing Group	Wrocław
24	University of Agriculture	Institute of Geodesy and Geoinformatics, Dept. of Geodesy and Photogrammetry of the Environmental Engineering and Geodesy Faculty	
25	Wrocław University of Technology	Division of Geodesy and Geoinformatics	
26	University of Agriculture and Technology	Dept. of Resources Economics and Spatial Information	Bydgoszcz
27			
28	Maria Curie-Skłodowska University	Division of Geoinformation	Lublin
29		Division of Cartography	
30	University of Gdańsk	Dept. of Cartography, Remote Sensing and GIS	Gdańsk
31		Dept. of Physical Oceanography	
32	Gdynia Maritime University	Dept. of Navigation	
33	Gdańsk University of Technology	Dept. of Geoinformatics	
34	University of Warmia and Mazury	Institute of Geodesy	Olsztyn
35		Division of Photogrammetry and Remote Sensing	
36		Dept. of Applied Ecology	
37	University of Agriculture	Division of Forest Management	Poznań
38	Adam Mickiewicz University	Institute of Geoecology and Geoinformation	
39	University of Szczecin	Division of Remote Sensing and Marine Cartography	Szczecin

#### d) Non-profit organisations (NGOs)

- UNEP GRID-Warsaw

### 2.3. Providers of EO data/imagery

- Head Office of Geodesy and Cartography <http://maps.geoportal.gov.pl/webclient/> (public institution) – orthophotomaps
- Geosystems (company) - satellite imagery from KOMPSAT-2, FORMOSAT-2, SPOT, EURO-MAPS, TerraSAR-X Services, RADARSAT-2 satellites
- SmallGIS (company) – satellite imagery from Quickbird, WorldView-1 and WorldView-2 satellites

### 2.4. Companies in the EO sector

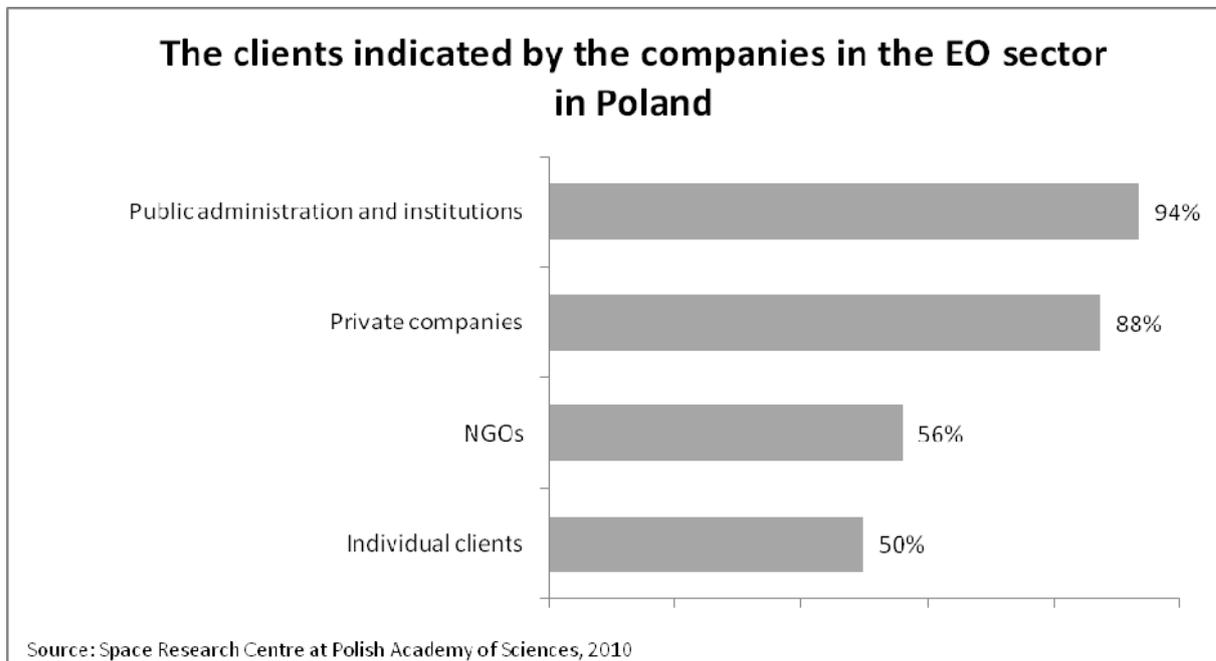
There are 11 companies that conduct their work directly in the field of remote sensing (however, it is not their core business). Among them there are companies that offer EO data and software distribution, data processing, system design, brokerage, consulting and trainings. The companies are not only providers but also clients for the EO data due to the character of their work (e.g. processing the images). But rather than ready-to-use products (like in the GMES programme), their needs are focused rather on raw data, which they can process for end-products.

	Name of the company	Voivodship (region in Poland)
1	<a href="#">Astri Polska</a> (founded in September 2010)	Masovian (mazowieckie)
2	<a href="#">EUROSENSE</a>	
3	<a href="#">Geosystems Polska</a>	
4	<a href="#">Intergraph Polska</a>	
5	<a href="#">Wasat</a>	
6	<a href="#">Dephos</a>	Lesser Poland (małopolskie)
7	<a href="#">Progea Consulting</a>	
8	<a href="#">SmallGIS</a>	
9	<a href="#">Tukaj Mapping Central Europe</a>	Silesian (śląskie)
10	<a href="#">Institute of Spatial and Cadastral Systems (ISPIK)</a>	
11	<a href="#">Cowi Polska</a>	Lower Silesian (dolnośląskie)

Apart from these companies, there are also many that are dealing with in-situ measurements, GIS, cartography and photogrammetry. Their number amounts to around 60.

## 2.5. Potential end users of EO data

The end users of EO data are from the public, private and non-governmental units. The clients of the companies are both institutional and private.



The identified potential end users are listed below.

### 2.5.1. Public administration and institutions

- a) Ministry of Agriculture and Rural Development:
  - Department of Rural Development,
  - Department of the European Union and International Co-operation,
  - Agency for Restructuring and Modernization of Agriculture (ARMA),
  - Agricultural Property Agency ,
  - National Centre for Agricultural Education
  - Sea Fisheries Institute in Gdynia
  - Institute for Land Reclamation and Grassland Farming
  - Institute of Technology and Life Sciences
- b) Ministry of Environment:
  - Chief Inspectorate of Environmental Protection (GIOŚ)
  - General Directorate for Environmental Protection (GDOŚ),
  - National Water Management Authority
  - National Atomic Energy Agency
  - State Mining Authority
  - Forest Research Institute
  - State Forests National Forest Holding,
  - Polish Geological Institute
  - National Fund for Environmental Protection and Water Management,

- 
- Institute of Meteorology and Water Management
  - Institute of Ecology of Industrial Areas
  - Institute of Environmental Protection
  - Environmental Information Centre
  - Regional Water Management Board in Warsaw

National Parks:

- Babia Góra National Park
- Białowieża National Park
- Biebrza National Park
- Bieszczady National Park
- Bory Tucholskie National Park
- Drawa National Park
- Gorce National Park
- Góry Stołowe National Park
- Kampinos National Park
- Karkonosze National Park
- Magura National Park
- Narew National Park
- Ojców National Park
- Warta Mouth National Park
- Pieniny National Park
- Polesie National Park
- Roztocze National Park
- Slovinski National Park
- Świętokrzyski National Park
- Tatra mountains National Park
- Wielkopolska National Park
- Wigry National Park
- Wolinski National Park

c) Ministry of Infrastructure:

- General Directorate for National Roads and Motorways
- Department of Spatial Development
- Institute of Urban Development
- Institute of Spatial Management and Housing in Warsaw
- Head Office of Geodesy and Cartography
- Department of Defence Affairs
- Maritime Institute in Gdansk
- Maritime Institute in Szczecin
- Maritime Office in Gdynia
- Maritime Office in Słupsk
- Maritime Search and Rescue Service
- Centre for EU Transport Projects
- Road and Bridge Research Institute

d) Ministry of Interior and Administration:

- National Civil Defense
- Border Guard
- Emergency Services
- National Headquarters of The State Fire Service
- Masurian Rescue Service
- Mountain Rescue Service
- Tatra Mountains Rescue Service
- Water Rescue Service
- Police
- Scientific and Research Centre for Fire Protection
- Department of the European Union and International Co-operation

e) Ministry of National Defense:

- Inspectorate for Armed Forces Support
- Military Gendarmerie of the Polish Armed Forces
- Multinational Corps Northeast
- Operational Command of The Services
- Special Force
- Polish Air Forces
- Polish Medical Air Rescue
- Polish Land Forces
- Polish Navy

f) Ministry of Regional Development:

- Department of the European Union and International Co-operation

g) Other:

- Governmental Security Centre
- Central Statistical Office of Poland
- Offices for regional planning
- Universities and R&D institutions listed above in point 2.2. (need EO data for their projects not products)

**2.5.2. Non-governmental organizations**

- UNEP/GRID-Warsaw

**2.5.3. Private companies**

- Insurance companies (were interested in products after flooding in Poland in May 2010)
- Companies that process the data and use them to develop further products and services (listed above in point 2.4.)



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## II. Opportunities

Poland is a country with a long history of using EO data for scientific/research purposes and shorter for applications. When assessing Poland's capacity the aspects of acquiring, processing and using the EO data should be taken into account. The related opportunities have various causes.

### 3. Political and organizational issues

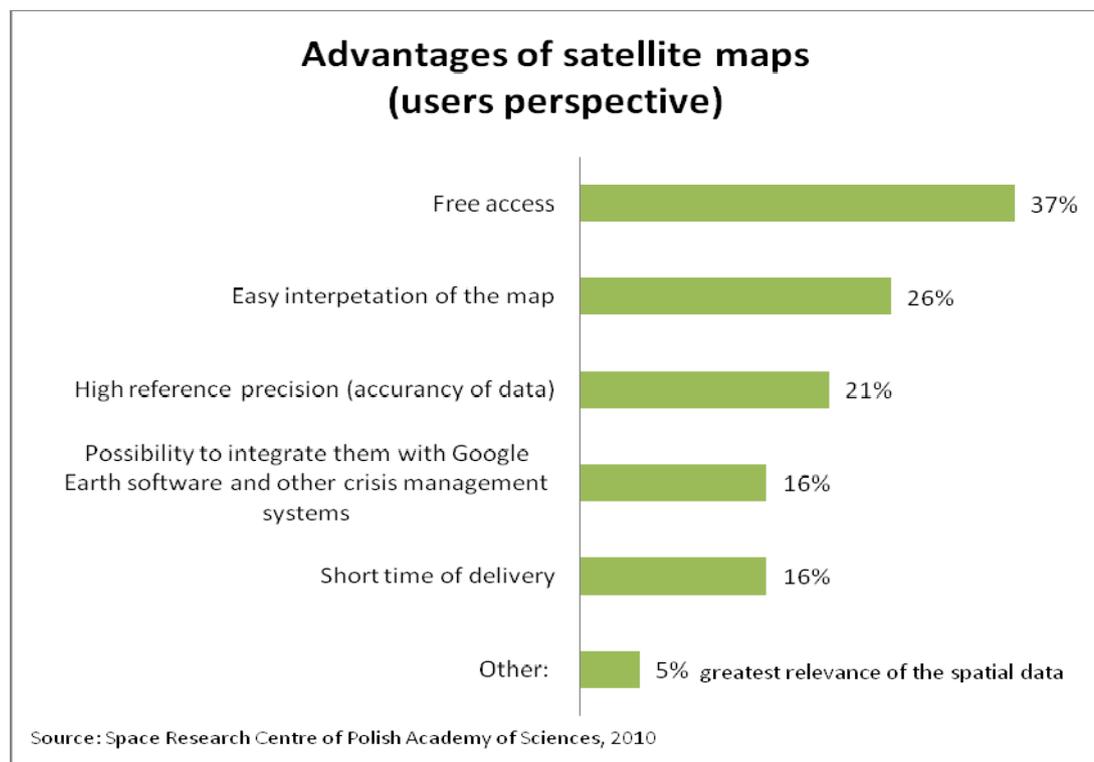
- Since the accession to the EU in 2004 and after signing the PECS agreement with ESA in 2007 new possibilities have been opened for research institutions and the private service sector to take part in the European projects but also to get support from governmental funding.
- There is a plan to become a full member of ESA by Poland after the PECS agreement will be fulfilled. It will stimulate the demand for EO data and applications due to the new space projects and initiatives in Poland.
- The central and local administration start to recognize the significance of the EO data and benefits they can bring by adding value to the commonly used in-situ monitoring networks. So far, EO based applications for water resource management, early warning of flooding and crisis situation management have not been yet regularly used by administration and government. However, the flooding in Poland in May 2010 proved the need to use it. During the crisis management actions in May, at least 22 institutions used the EO products (e.g. reference maps) prepared within the SAFER project and thanks to cooperation of numerous institutions (with the leading role of SRC PAS and Industrial Research Institute for Automation and Measurements – PIAP). This showed that there is a need to create a Crisis Management Information Centre that could provide EO data and products in the crisis situations under the official structure.
- The Ministry of Science and Higher Education has started to establish a Polish GMES Committee and GMES Users Forum. The first meeting with the users was organized on October, 4<sup>th</sup> 2010 and there is a plan of further cooperation and educational activities concerning GMES. Currently, the Ministry of Science and Higher Education with the Space Research Centre PAS, the Institute of Geodesy and Cartography and the Institute for Ecology of Industrial Areas are working on the plan of implementation of the GMES programme in Poland.

The following ideas were supported by all the users at the meeting:

- to create units such as National Focal Points, which would be facilitator between GMES and its users
- to create the official GMES Forum, which would be also divided into smaller, more specialized groups in various categories. Such a unit would meet regularly and organize the training plan for the users about the EO technologies applications and the benefits they could bring to the everyday life.

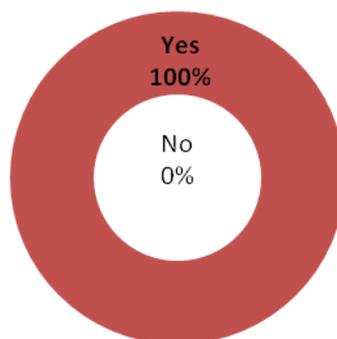
## 4. Market perspective

- The most promising areas in Poland concerning the use of EO applications are: water and crisis management, spatial planning, ecosystems, climate change.
- There is no problem with human resources that can deal with processing the EO data. There are 24 universities in Poland, which carry out research, education and dissemination activities related to various aspects of applying remote sensing technology and GIS applications. Recent investigation shows that departments of geodesy and cartography, including remote sensing specialization, gain great popularity among pupils. For instance, there were 7,8 candidates per place at the entrance exams at AGH University of Science and Technology in Krakow and 7 candidates per place at Warsaw University of Technology.
- There are many private companies, well established on the Polish market (mainly with specializations in geodesy and cartography) and with a relatively long experience that can answer the growing demand for the EO based products.
- The two companies that are satellite data/imagery providers (Geosystems and SmallGIS) recognized a growing demand for the satellite imagery. Their clients are in majority from the public sector (mostly for spatial and urban planning, administration of towns and cities), including clients from the R&D and educational sector, which use the data for research and projects, and individual clients.



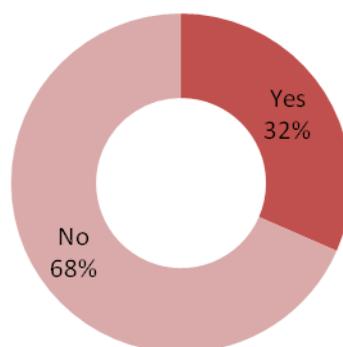
Users indicated „free access” as the first advantage of satellite maps because of the fact that the survey was carried out among crisis management centres in Poland that got the EO based maps during the floods in May and June 2010 for free within the GMES-Safer project.

### Is your institution willing to use the satellite based products in the future?



Source: Space Research Centre of Polish Academy of Sciences, 2010

### Is the institution able to pay for the products?

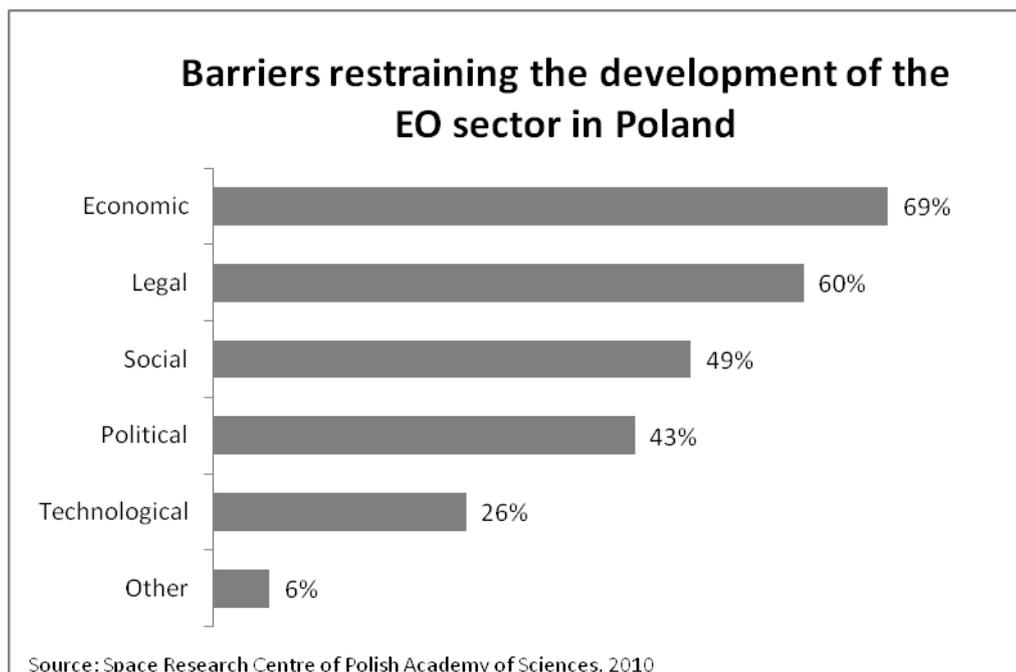


Source: Space Research Centre of Polish Academy of Sciences, 2010

Many of the Polish public institution lack the geographical data and products, which are necessary for fulfilling their duties. All of the institutions participating in the questionnaire expressed an eagerness for using satellite maps and other EO based products in the future. However, without any top-down procedures or law, only 32% of them could be considered as potential end users, due to the insufficient financial resources.

### III. Bottlenecks

Many problems exist in the Polish market that block the development of the earth observation sector. Across the board, the most significant one is of economic/financial character – the public administration and institutions that could be the main end users of EO products and applications do not have funds for new investments without top-down procedures (legal and political barriers). The public sector in Poland is not innovative and open for new technologies (lack of competences and bureaucracy).



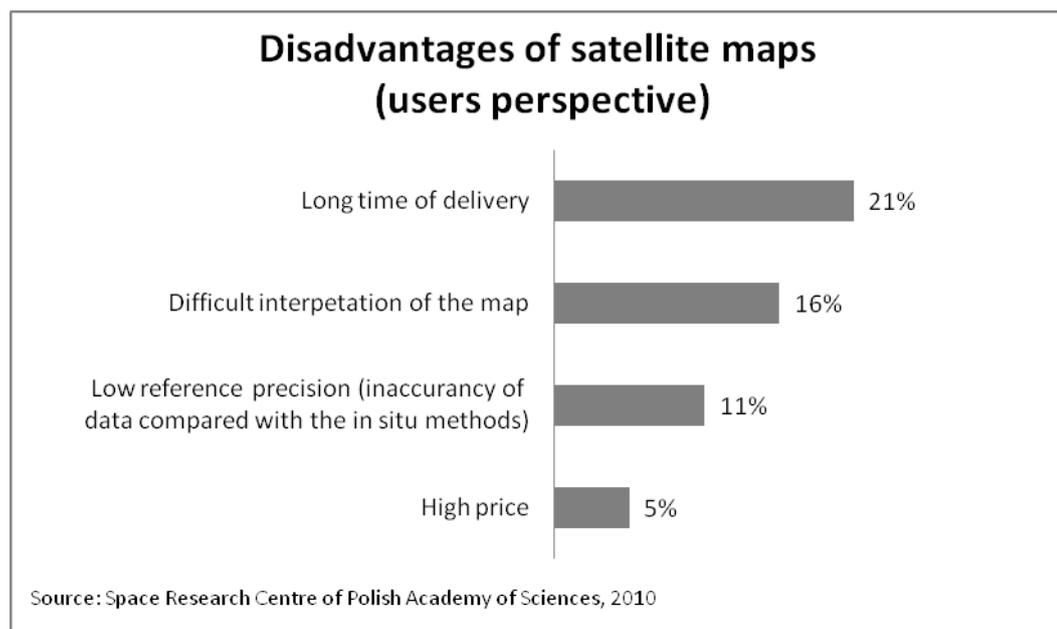
### 5. Political and organizational issues

- An institutional problem is caused by the fact that no space agency (or equivalent unit) exists in Poland that could formulate and execute the Polish space policy, including one for the EO sector.
- Paradoxically, the effort made by Ministry of Environment in establishing an efficient state-of-the-art in-situ monitoring network to prevent the pollution of environment and to meet the European environmental standards, delayed the necessity of employing satellite observations for environment monitoring.
- The public administration is not innovative enough. There is not yet sufficient awareness of the main potential of the EO based tools and GIS methods and there is also a reluctance to use new methods in everyday activities without official top-down procedures (also because no GIS specialists are employed). Moreover, the EO data need standardization and verification in order to be used by public administration.
- There are legal problems with accepting remote sensing methods as monitoring tools on the equal footing with in-situ techniques.
- Public administration institutions do not cooperate enough with the R&D and scientific institutions. There are many successful scientific examples of the projects using EO data, but

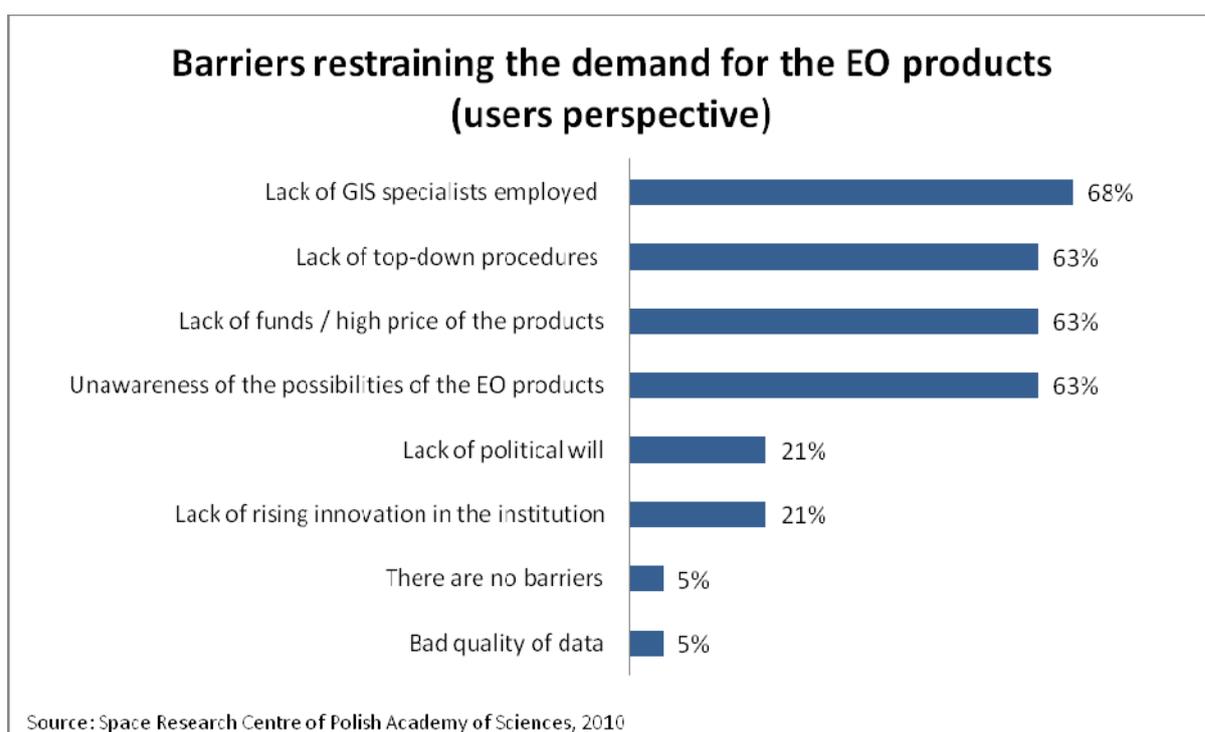
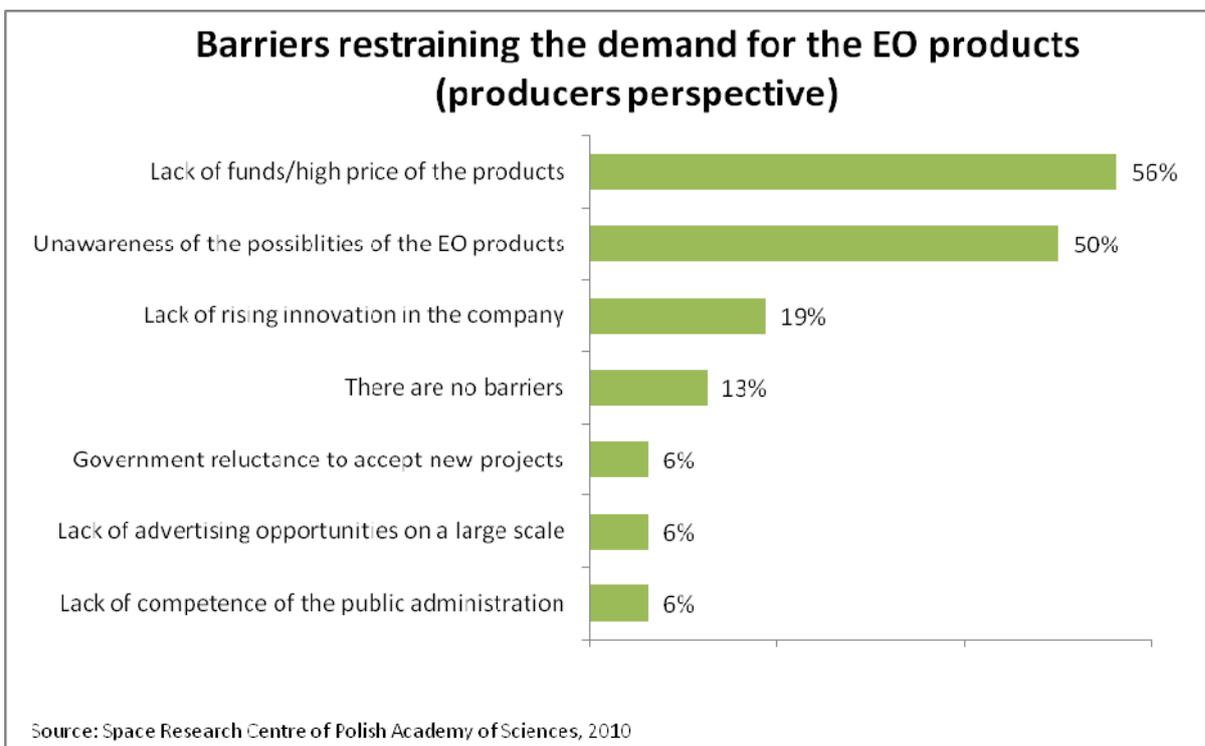
they are usually not translated into decisions and real-life outcomes. The example of Institute of Geodesy and Cartography that cooperates strongly with Central Statistical Office of Poland is one of not many that is successful.

## 6. The market perspective

- While there is no problem with human resources capacity in the EO sector concerning data acquiring and processing, there is a big problem of the potential users with the awareness and skills of using EO data. Well educated human resources on the side of producers and not enough knowledge of the end users result in the gap between these two groups and not enough demand for the EO products.
- The EO community is not integrated enough and there is no one that could represent the common voice of the community. The absence of one integrated source for EO data on the market leads to the situation that analyses are very often doubled (no efficiency).
- The companies that deal with data processing are usually not big (5-30 employees) and do not spend much money on marketing campaigns. Moreover, satellite based services and products do not belong to the core business of these companies.
- There is a negative example of the listed company Techmex, a provider of advanced solutions in geoinformatics based on satellite technology, as well as its Satellite Centre for Regional Operations (SCOR), an operator of the American satellite Ikonos. The company was the biggest in the sector (over 250 employees) and went bankrupt in November 2009 due to a combination of bad management and lack of demand for their services. This case led to a common thinking that EO technologies cannot be a profitable business opportunity.
- Lack of convincing examples of how useful remote sensing techniques could be and of clear cost-to-benefit analyses that show that they can offer better and more efficient solutions than the traditional methods in many cases. There is a common opinion that satellite products are much more expensive than traditional ones.



Only 5% of users that indicated ‘high price’ as a disadvantage in the graph result from the fact, that the crisis management centres that participated in the survey got the EO based maps for free during the floods in May and June 2010 within the GMES-Safer project. It is easy to estimate that under normal circumstances ‘high price’ would be the first chosen disadvantage of satellite maps.



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## IV. Conclusions and recommendations

The Polish market for the EO sector is still small but with good potential for successful development. When analyzing the business model of the EO products and services, we can draw some conclusions concerning the Polish situation:

1. The capabilities in the phase of EO data distribution and product/service delivery are sufficient and of good quality. There are enough companies and human resources that can satisfy the current and not yet high demand. The companies are developing in the EO field but it is a progressive, not very fast process. The example of the company Techmex has shown that too rapid development without sufficient demand, can lead to the failure of the company. On the side of the human resources, it is also important to remember that the graduating students in the field choose mostly different specializations than remote sensing, even though they could easily work with satellite data processing when the demand for it is sufficient.
2. The not yet sufficient demand on the side of the clients is caused by several reasons and next steps to improve the situation are:
  - The potential users are not aware of the possibilities that EO based tools can give. Education of the public administration (how to use the software and how to interpret the data) is necessary, as well as presentation of the success stories that can be translated into Polish market with a cost-benefit analysis. The example of the floods in Poland in May and June 2010, when EO data were used by many institutions, should be presented to the potential users as much as possible. The meetings with the users should be organized not only officially by the ministries or at the conferences but they should be also more informal and with an individual approach to the user.
  - The organizational barriers (bureaucracy, lack of innovation, lack of efficient cooperation between public administration and R&D and scientific units) should be moderated by creating an official unit dealing with GMES programme (GMES Committee) that could be the facilitator for the users. Ministry of Science and Higher Education with SRC PAS, Institute of Geodesy and Cartography and Institute for Ecology of Industrial Areas are on a good track to make this a reality.
  - A web portal that could integrate the EO data, products and educational materials in one source should be created.



## APPENDIX 1

*Survey among the companies and institutions in the sector (originally in Polish).*

### GEONetCab Survey

#### **The analysis of using satellite imagery for the purpose of earth observation in Poland**

We would like to ask you to complete the survey that comes from The GEO Network for Capacity Building (GEONetCab) project. The project is being implemented by Space Research Centre of The Polish Academy of Science within The Seventh Framework Programme of The European Commission.

**The GEONetCab project is aimed at conducting research on the end users and suppliers community of earth observation (EO) data, testing the chance of developing the EO industry sector in Poland and identifying any problems that can occur during realization of these aims.**

Please answer the following questions as it will help us to analyse the general trends in the EO field.

This survey is intended to be used for scientific purposes only. The completion of the survey would take you less than 15 minutes. Without your help this research project will not succeed.

Thank you for your time and help.

COMPANY PROFILE		
Company name, year of establishment		
Address, phone number, email address, webpage		
Ownership type	1. private	
	2. co-operative	
	3. public	
Capital country of origin	1. Polish	
	2. foreign capital	
	3. mixed capital	
Legal and organization form	1. Joint stock company	
	2. Limited liability company (Ltd)	
	3. Partnership	
	4. Private company	
	4. Other (indicate):	



Number of employees	
Number of employees in R&D	
R&D contribution in all costs ( %)	
Export contribution in general sale (w %)	
<b>Operating field</b> (mark <b>X</b> when applicable for your company)	
Remote sensing (data acquisition and processing)	
Photogrammetry	
GIS (systems, software, data)	
Cartography	
Satellite navigation / Satellite communication	
Space technology and exploration	
Other (indicate):	
<b>Product portfolio</b> – Please indicate what data, products, or software your company offers and what generate the biggest income	
Do you plan to increase your product portfolio? If so, please indicate the new field of work or new product.	
<b>Customers</b> – please mark <b>X</b> , if applicable for you	
1. Public administration	
2. Non-governmental organization	
3. Individual persons	
4. Private company	
5. Other	



<b>Customers</b> – please indicate which products are sold the most often and which were well implemented by your customers		
What do you think are the most important barriers that restrain the demand for your products by potential customers? Please indicate three of them.	1. Customers' unawareness of possibilities of EO products	
	2. Insufficient financial resources / high price of products	
	3. Lack of technological innovation	
	4. Other (indicate):	
	5. No barriers	
What do you think constitute the biggest barriers for development of the EO sector in Poland?	1. Economic	
	2. Technological	
	3. Social	
	4. Legal	
	5. Political	
	6. Other (indicate):	
Would you be interested to participate in GEONetCab project that promotes the EO technology? If so, please indicate contact person:	<b>YES</b>	<b>NO</b>



## APPENDIX 2

*Survey among the crisis management centres involved in rescue activities during the floods in Poland in May and June 2010 (originally in Polish).*

### GEONetCab Survey

#### Experiences of using satellite based products during the floods in Poland in May and June 2010

We would like to ask you to complete the survey that comes from The GEO Network for Capacity Building (GEONetCab) project. The project is being implemented by Space Research Centre of The Polish Academy of Science within The Seventh Framework Programme of The European Commission.

**The GEONetCab project is aimed at conducting research on the end users and suppliers community of Earth Observation (EO) data, testing the chance of developing the EO industry sector in Poland and identifying any problems that can occur during realization of these aims.**

Please answer the following questions as it will help us to analyse the general trends in the EO field.

This survey is intended to be used for scientific purposes only. The completion of the survey would take you less than 15 minutes. Without your help this research project will not succeed.

Thank you for your time and help.

INSTITUTION'S PROFILE	
1. Full name and department	
2. Address, phone, e-mail, www	
3. Ownership type	a. public
	b. private
	c. co-operative
	d. NGO
4. Contact person for experiences with the spatial data during the floods (name, surname, e-mail, phone):	
5. Number of employees	
6. Number of GIS specialist employed	



7. What kind of spatial data are used in your institution on the daily basis (e.g. paper maps, digital maps...)?

8. Do you use the satellite images? If yes, what kind of and what do you use it for?

**EXPERIENCES FROM THE ACTIVITIES DURING THE FLOODS IN 2010**

9. Please describe shortly the responsibilities of your institution during the flood in May and June 2010.

10. What kind of spatial data were used at your institution during the flood?

11. What was the reason for using using satellite maps? (*please mark X*)

a. Lack of other maps during the intervention.

b. Completing the existing available data

c. Shortening the time of decision making (full picture of the problem)

d. Increasing innovation at the institution

e. Othe institutions/people were recommending using these data

f. Other (please indicate)



<b>12. What did you use the satellite maps for (e.g. which intervention phase, in what kind of decisions)?</b>	
<b>13. Did satellite maps affect/change the decisions during the activities during the floods? If yes, in what way?</b>	
<b>14. Which advantages of satellite maps can you indicate?</b>	
a. Short time of delivery	
b. High reference precision (accuracy of data)	
c. Easy interpretation of the map	
d. Possibility to integrate the maps with Google Earth software and other crisis management systems	
e. Free access	
f. Other (please indicate):	
<b>15. Which disadvantages of satellite maps can you indicate?</b>	
a. Long time of delivery	
b. Low reference precision (inaccuracy of data compared with the in situ methods)	
c. Difficult interpretation of the map	
d. High price	
e. Other (please indicate):	
<b>16. What should be changed in the products in order to meet your expectations?</b>	



<b>17. Is your institution willing to use the satellite based products in the future?</b>	Yes	
	No (please explain)	
<b>18. Is the institution able to pay for the products?</b>	Yes	
	No	
<b>19. What do you think are the most important barriers that restrain the demand for the EO based products?</b>	a. Unawareness of possibilities of satellite based products	
	b. Insufficient financial resources / high price of products	
	c. Lack of innovation in the institution	
	d. Lack of GIS specialists employed	
	e. Lack of top-down procedures	
	f. Lack of political will	
	g. Bad quality of data	
	h. There are no barriers	
	i. Other (please indicate) :	
<b>20. Comments, opinions</b>		