

## EUROPE IN A GLOBAL CONTEXT: EUROGEO AND THE ROLE OF GEOGRAPHY AND EUROPEAN GEOGRAPHERS

Rafael de MIGUEL GONZALEZ  
University of Zaragoza & EUROGEO  
[rafaelmq@unizar.es](mailto:rafaelmq@unizar.es)

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### Abstract

EUROGEO is the European Association of Geographers created in 1979, so in 2019 we have celebrated its 40th anniversary. In 2020 geographers celebrate the bicentennial of the foundation of the first Chair of Geography at the University of Berlin. In 2021, the bicentennial creation of the first geographical society in Paris, and in 2022 the centennial of the establishment of the International Geographical Union. Geography is a relative young scientific discipline. For a long a time, there has been a discussion about its scientific status, the diversity of paradigms or national research schools. Despite several voices arguing the end of geography or blurring the lines of the discipline, among other reasons because of the revolution of geospatial information, this paper claims that geography is more important today than ever and geography is fashionable. Geography is essential for education and for environment, but also for society, economics and politics: globalization, sustainable development, climate change and technology are at the forefront of the world and European challenges. So, geographer's international contributions –like EUROGEO does- are also essential to have the better understanding of the present context and to help problem solving and decision-making.

*Keywords: EUROGEO, geography, sustainable development, Europe*

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### 1. GEOGRAPHY IS MORE IMPORTANT TODAY THAN EVER

Geography is usually known as a school subject and field in the sciences that studies the Earth's surface, the spaces and places where relationships between people and environment happen. Geography explores the interactions between physical environment and human societies producing landscapes, distributions, impacts, and spatial patterns from the local and regional to the national and global scale. Geography is the science of “where,” and guides the inquiry process to acquire knowledge about how and why place, space, and environment matter. Geography contributes to raise awareness about the human and cultural diversity on the Earth. Geography studies locations, but also how these develop and change over time. Geography is a scientific discipline that deals with the teaching and learning of the processes of spatial organization of human societies. And Geography is able to face the complexity and diversity of processes, systems, and interconnections between human and natural environments by developing analytical thinking (data, visualization), critical thinking (judgment, assessment) and lateral thinking (creative, problem-solving).

### 2. GEOGRAPHY HAS BEEN ESSENTIAL IN THE PAST

Since early humans sketched three-dimensional paintings in caves (c. 40,000 years BP), primitive maps on mammoth tusks (c.25.000 years BP) and stones (c. 13,000 years BP) during the Upper Paleolithic, or since Ancient Babylonia used accurate surveying techniques and drew maps on clay tables, humans have made spatial representations of where they live and where they roam. From the Babylonian World Map to the foundation of geography by Ancient Greeks and Romans like Eratosthenes, Strabo, Pomponius Mela, and Ptolemy, spatial knowledge became essential for the deployment of Ancient civilizations through trade, territorial conquest, and regional administration, but also to display self-image and self-consciousness of political power.

After Spanish America's discovery and exploration by Columbus, Ponce de León, Núñez de Balboa and others, and after first circumnavigation of the Earth by the Spanish explorer Elcano, geographical knowledge became even more essential for European colonization to other continents. But geographical and territorial expansion was the key motivation for international confrontations between European Kingdoms and Empires (Spanish, British, French, German, Austrian, Russian, Dutch, Portuguese, Turkish...) that have happened almost uninterruptedly since Wars of Religion in the times of Charles V, Holy Roman Emperor (King of Spain, Germany and Italy, Archduke of Austria and Lord of the Netherlands) until World War II. Early Modern and Late Modern periods of History have been particularly prisoners of geography from an European perspective: from right of conquest in America, Asia or Africa (Treaty of Tordesillas, Berlin Conference), to myriad border and territorial disputes because language, religion or culture, to *Pax Napoleonica* or to Hitler's *Lebensraum*, spatial conceptions of Europe and the World have determined the course of Modern History. And even in Contemporary times, from Cold War to geopolitics in current days. Thus, Eurocentric image of the world has remained since the beginning of the first world maps in the sixteenth century (Mercator, Ortelius) to International Meridian Conference (1884) and beyond.

### 3. GEOGRAPHY, A EUROPEAN-BORN SCIENTIFIC DISCIPLINE

If Ancient Geography was born in Classical Greece, Modern Geography was developed first in Germany where Alexander Humboldt and Carl Ritter were from. Both are considered founders of Modern Geography. Humboldt's most known publication, *Kosmos* (1845-1862), laid the groundwork for systematic geography. Ritter attained the first Chair of Geography ever (1820, University of Berlin, just 200 hundred years ago) and his main work *Die Erdkunde* (1822-1859) focused on the connections between phenomena in places.

The chronology of both authors is situated in the middle of the processes of industrial revolution in Europe and of liberal political revolutions, especially that of 1848. The development of industrialization processes led to the need to search for raw materials and markets outside the borders. Meanwhile, the conformation of nation states - like German and Italian unification processes - meant a reinforcement of national identity in European countries. Both transformations - economic and political - in the structures of the countries contributed to the increase in rivalry between European powers - whose balance of power policy resulting from the Congress of Vienna failed with the liberal revolutions of 1830 and 1848-, and to the transformation of colonialism into imperialism. Furthermore, these political and economic changes had a strong social impact on the demographic transition, on the growth of cities and on the acquisition of essential political individual rights such as universal education in recognition of citizenship.

This is the time, during the first half of the 19th century, when Geographical Societies were created as institutions to promote the advancement of geographical science, but also to support the colonial exploration in Africa and Asia as they had a strong support from the mercantile, diplomatic, and military classes. The *Société de Géographie de Paris* was founded in 1821, so

next year two hundred anniversary will be held. Subsequent institutions were created: Geographical Society of Berlin (1828), Geographical Society of London (1830) -later Royal Geographical Society-, Russian Geographical Society (1845), American Geographical Society (1851) -but National Geographic Society in 1888-, Austrian Geographical Society (1856), Italian Geographical Society (1867), Spanish *Real Sociedad Geográfica* (1876), etc. Besides this, by 1850 geography was widely extended as a school subject in primary and secondary education in Germany, Switzerland and France

The results of Franco-Prussian War accelerated the academic institutionalization of geography as scientific discipline and a school subject. Political reasons –national identity reaffirmation- were supplemented by the imperial expansionism, by the advancement of natural and social sciences, and in particular by the new legal status of basic education –and consequently of National geographical curriculum for schools- in the resulting political regimes after 1870, French Third Republic and German Empire, respectively. In 1870, an Act to provide for public Elementary Education in England and Wales was set, followed by the creation of the Geographical Association in 1893). In the United States, education was compulsory in Massachusetts after 1852 and District of Columbia after 1864, but eighteen States between 1870 and 1883. As expressed by Johnston (2018), “*Geography is one of the few academic disciplines, particularly in Europe, to have been established in universities as a result of pressure to produce people who could teach it in schools. As the demand for geographical information increased, more people required a foundation of geographical knowledge. There was also growing recognition of the role geography could play in creating national identities, making people aware of their particular situations through contrasts with environments and peoples elsewhere. Geographical knowledge was important to citizenship, especially if it supposedly showed the superiority of one’s own people and environment*”.

Thus, after many decades of Ritter’s Chair in Berlin, a new Chair of Geography was restored at the University of Leipzig in 1871, attained by Oscar Peschel. In France, Vidal de la Blache became Chair of Geography at the University of Nancy in 1872. First Chair of Geography was created at the University of Amsterdam in 1877, and one decade later the University of Oxford created the first British Chair of Geography (1887). In the United States, William Morris Davis started to teach geography at Harvard University in 1876 (Mamadouh, 2005). In Spain, Amando Melón attained first Chair of Geography in 1921 at the University of Valladolid.

1871 was is an important year for geography, too, as First International Geographical Congress was held in Antwerp. Almost every delegate to this Conference came from European countries, except a small American delegation. Subsequent meetings were held in Europe, too: Paris, 1875; Venice, 1881, Paris, 1889, Berne, 1891, London, 1895, Berlin 1899. First Conference outside Europe was in Washington in 1904. But until 1922 in Brussels, it wasn’t established a permanent organization, the International Geographical Union (IGU). Since then and until today, Europe has held most of the International Geographical Congresses as only 12 out of 34<sup>th</sup> have been held in non-European countries. European geographers have also been the main scholars for the foundation of Geography in the early research stages (Livingstone, 1992; Brogiato, 2005; Claval, 2011, Capel, 2012) like Germans geographers Friedrich Ratzel (determinism) or Alfred Hettner, or French geographers like Paul Vidal de la Blache (regional geography) or Élysée Reclus, or British geographers like Halford Mackinder.

Some American geographers like William Morris David or later Carl Sauer (cultural geography) and Richard Hartshorne –in the second and third decades of 20<sup>th</sup> century- were some scholars who started to foster a geographical production supplementary to Europeans. American geographical bodies were also delayed: not only National Geographic, but also Association of American Geographers and National Council for Geographical Education, founded in 1904 and 1915, respectively. Dissemination of geography in universities and school education worldwide was possible after 1949 and ongoing, in particular thanks to the efforts

and support of UNESCO to geographical education in developing countries. UNESCO believed that Geography was a key school subject for International Understanding (De Miguel, 2020).

#### **4. FROM GEOGRAPHY TO NEO-GEOGRAPHY AND THE VIRTUAL SPACE**

In the following decades after World War II, Geography was also consolidating in higher education, so most of Universities in developed countries had a Department of Geography, undergraduate and graduate programs, research outcomes, etc. Nevertheless, the links between geographers in continental Europe and the English-speaking countries were weakening. It also resulted the loss of leadership for German and French geographers, but an increasingly stronger community of Anglo-American geographers. Currently, some studies quoted by Johnston and Sidaway (2016) show that about 80% of papers published in top journals of geography are written by scholars established in the United States, United Kingdom, Australia, Canada, New Zealand, etc.

This is explained by the fact that Anglo-American geographers took over the new trends for research (Livingstone, 1992; Martin, 2015; Johnston and Sidaway, 2016; Mathewson et al. 2016.). The New Geography -based on the quantitative revolution- advocated for a geographical science characterized by its explanations, spatial laws replicable in other places, generalized statements of observed regularities, cause-and-effect relationships. Kurt Schaefer, from University of Iowa, published a paper in 1953, which led the successful paradigm adopted by most American geographers because deductive reasoning helped geography become more scientifically rigorous for spatial analysis, but also as applied science in environmental policies, in urban and regional planning, or in retail or activity zones location. The next generation of world leading geographers was American (Brian Berry, William Bunge), and rapidly moved to the United Kingdom (Peter Haggett and Richard Chorley). This paradigm has dominated the geographical research production worldwide since 1960, and even today has been reinforced by computational analysis and Geographical Information Systems (GIS) based on geo-data. Critical geographies influenced by social sciences have introduced alternative methods to quantitative geography. They have also been led mostly by American geographers like Yi Fu Tuan -Chinese, but developing his career in the U.S. and Canada- (humanistic geography), Reginald Golledge (behavioral geography) and Edward Soja (postmodern geography), or by British people like Doreen Massey (cultural geography). David Harvey (critical geography), world's most cited academic geographer ever, is British but also has been teaching and researching most of his career in American Universities.

It is question less that French and German geographers don't have the same status than in the early times. Only five European geographers have been recognized by the two main geographical awards, Prix Vautrin Laud and IGU Award: Torsten Hägerstrand (Sweden), Paul Claval (France), Dolores García-Ramón (Spain) in addition to Haggett and Harvey. On the other side, geography is nowadays an international discipline beyond Europe, North America or Commonwealth states: 113 National Committees are contributing to the IGU, with a special emphasis in Latin American or Eastern Asian countries.

Geography is still a school education subject mostly attached to Social Sciences like History, Economy, Social Studies or Citizenship Education, but in some countries Geography is linked to Life Sciences like Biology or Geology. In higher education, geography teachers belong to autonomous Departments of Geography or Colleges of Geosciences, but they are mostly related to Colleges of Arts or to College of Sciences. Wide diversity of methods, interdisciplinary approaches, confronted paradigms and national and regional particularities make sometimes difficult to understand geography as a solely recognizable academic and scientific discipline. Despite its identification by UNESCO nomenclature for fields of science and technology (Code 54), geography is still included in both fields natural sciences and social sciences –when do not

earth sciences-, either in University rankings (ARWU; QS; THE), either in Journal rankings (SSCI; SCI).

But in 2020, geography is everywhere and for everybody, more than ever. This is because of the spread of new geospatial technologies that allow access to geographic information and geographic media resources. Technological applications and user tools are readily available for everyone, from computers to tablets, but in particular in mobile phones. These new tools that offer broad access to geo-information sources have revolutionized the way in which people interact with place, space and environment, about daily activities or movements and about extraordinary events, from local to global scales.

The world of GIS (desktop or web-GIS like ArcGIS Online), virtual globes (Google Earth), digital map and GIS viewers (Google Maps, Open Street Map) and geo-information based smart phone apps (including social media) has dramatically changed the way that people interact (produce, consume, exchange) geographical information. The neologism Neogeography describes the use of geographical information and geo-tools for personal or social activities or by a non-expert group of users. Neogeography and Volunteered Geographic Information (VGI) at the virtual space is possible as the acquisition and compilation of geographic data have become much easier as technology has advanced, thus blurring the distinction between the non-expert amateur and the expert professional geographer (Goodchild, 2009). In other words, geo-information is essential for our contemporary personal, social or professional life.

## **5. GLOBALIZATION AND GEOGRAPHY**

The most evident phenomenon that has characterized the evolution of contemporary civilization has been the increasing interconnection among the different areas of the world. Whether as a consequence of the technological revolution or the processes of internationalization and opening up of national economies or consumption habits in urban societies, whether as a consequence of the new international political order, it is indisputable that these first two decades of the twenty first century are experiencing changes faster than ever before. The world in general, and individual countries in particular, are experiencing social, economic, and environmental challenges with many direct and indirect effects on societies. More than a third of the population across the world lives in poverty, in need of basic essentials such as food, sanitation, shelter, and education. Environmental degradation may already have exceeded the threshold beyond which Earth will lose its ability to sustain its most precious and valuable resources for humankind. Changes in regional and global climate patterns have already impacted many countries with severe weather events, droughts, and floods. Social and cultural problems resulting from globalization, mass migration, refugees, inequality in income distribution, xenophobia, and racial, linguistic, and religious discrimination are endangering peace and coexistence in nearly all countries. Political and military conflicts and terrorist activities have disrupted the social order in and between countries throughout the world. Urban migration and the growth of megacities are causing severe challenges for their inhabitants in terms of subsistence (housing, transportation, supplies).

On the other hand, globalization has had very positive consequences on economical and social development: as Gapminder tool shows, in the last 25 years, all the countries in the world have experimented the highest rates of correlated growth in income and life expectancy. Globalization has created a global market where all the exchanges, trade and transportation are easier for people (including tourism), goods, capitals, services and information, from one place to another in the world. Globalization has contributed to exchanges of ideas and innovation, to international communication and to shared progresses in technology and science. Globalization has also made possible to wider layers of society easier access to education and culture, or

cheaper prices for consumers. A global understanding of the world has also helped to increase international cooperation and to raise awareness (global awareness) about human rights, democracy, freedom and sustainable developments from individuals, communities, companies, governments and international institutions or international forums.

Whichever are the effects of globalization –even the spread of Covid-19 global pandemic and its consequences on global economy-, place, space and environment are today more important than ever because increasing social and economical networking, and because vital interactions, interdependences, and interconnections between countries, regions and urban regions. In this way, we need geographical knowledge and global understanding (De Miguel et al., 2018) more than ever to understand the contemporary world –complex, uncertain and mutable-, but also everyone must achieve geographical skills for personal and professional development, and should develop positive geographical attitudes –like respect to diversity or sustainability- to life in contemporary societies.

## 6. THE CONTRIBUTION OF GEOGRAPHY

Geography can contribute to a better life for individuals and communities, if not to a better world. Geography is a vital subject in schools to achieve a meaningful education in personal and social skills. Geography is a vital scientific knowledge to attain a sustainable development of the Earth. Geographical information is vital for our daily needs. And professional geographers are vital for most of the global challenges.

We are living in the era of the geographer, as suggested by the highly cited ecologist Harold Mooney, when the “*formal discipline of geography’s long-standing concern with the changing spatial organization and material character of Earth’s surface and with the reciprocal relationship between humans and the environment are becoming increasingly central to science and society*” (National Research Council, 2010). This quotation has been written in a report prepared by the Committee on Strategic Directions for the Geographical Sciences in the Next Decade, and published by the National Research Council. This report asks about the most important geographical questions that deserve scientific, social and political attention to contribute to understand and respond to a changing planet. There are four strategic directions where geography can provide solutions to avoid impacts and can facilitate understanding for the global challenges: environmental changes, sustainability, spatial reorganization of economy and society, and technological change. The four strategic directions have been developed through eleven questions, which can help us to understand the contribution of geography to global challenges:

- How Are We Changing the Physical Environment of Earth’s Surface?
- How Can We Best Preserve Biological Diversity and Protect Endangered Ecosystems?
- How Are Climate and Other Environmental Changes Affecting the Vulnerabilities of Coupled Human–Environment Systems?
- How and Where Will 10 Billion People Live on Earth?
- How Will We Sustainably Feed Everyone in the Coming Decade and Beyond?
- How Does Where People Live Affect Their Health?
- How Is the Movement of People, Goods, and Ideas Transforming the World?
- How Is Economic Globalization Affecting Inequality?
- How Are Geopolitical Shifts Influencing Peace and Stability?
- How Might We Better Observe, Analyze, and Visualize a Changing World?
- What Are the Societal Implications of Citizen Mapping and Mapping Citizens?

From the European perspective, Geocube project led by the European Association of Geographers (EUROGEO) defined six big issues to underline the importance of geography and to deal with concerns over the way we live and our relations with the world around us (Donert, 2009):

- Living Together
- Earth from all Angles
- Shrinking Planet
- Fascinating Earth
- Exploring our World
- Useful Geographies.

Each one of this comprises six geographical topics, so 54 in total. Later, EUROGEO selected some of them as particularly important for contributing to an innovative learning geography in Europe and for understanding 21<sup>st</sup> century challenges (De Miguel and Donert, 2014): climate change, global warming, sustainable development, conservation of resources, landscape, natural hazards and disasters, renewable sources of energy, national and international migration, slums, urbanization, smart cities, human development, food and water supply, transportation, population pressure, civil rights, etc. All these topics aren't stranger for anybody as every human being is rooted to places, so any impact to them has direct consequences on daily life and subsistence. United Nations has understood the role of geography as 2030 Agenda includes 17 Sustainable Goals, which are mostly spatial challenges involving governments, private sector and stakeholders worldwide. Geography can definitely contribute to peace and prosperity for people and the planet, now and into the future.

## 7. GEOGRAPHY IS AMAZING, EVEN FOR NON-GEOGRAPHERS

In recent years there has been a growing interest in geography, inside and outside the scientific and academic community. At the high school level, Advanced Placement in Human Geography is one of the fastest growing AP courses, and one of the highest enrolled of all AP subjects, in the United States. In 2001, the first year the exam was available, 3,272 students completed the test, but 225,235 in 2019. Only Biology, Calculus, English language and literature, Government, Psychology and US and World History subjects had more students enrolled than Human Geography. In the UK, Geography is one of the increasingly popular subjects in schools, with the public examinations results showing the number of both GCSE and A-level entries. In France, 2019 high school reform (*Baccalaureat*) has increased teaching time of geography and history course, from 150 to 180 minutes per week, as a compulsory subject to all students.

In higher education, despite a general decline in the number of students of geography programs in benefit of professional oriented undergraduate programs like GIS, urban planning or environment, geography is stronger than ever, in particular in the Anglo-American (Johnston and Sidaway, 2016) and beyond. A basic research on Web of Sciences shows that about 2,900 scientific publications in geography and related sciences (environmental studies, economic geography, urban and regional planning) were included on this database. The number of real publications per year is even bigger, as Web of Science only includes most cited journals and books. The last IGU Commission and Task Force Reports confirm the flourishing and vibrant community of geographers worldwide, as well as the number of attendants to Conferences of AAG (about 9,000) and IGU (about 5,000). The origin of geographers in publications and Conference participation is even more diverse in the recent years, in particular geographers coming from Asia and Latin America. So, geography of geographies and geographers is also becoming global.

Geography has also become an essential topic from media, an in particular from digital edition of newspapers, including maps or geographical references to explain the breaking news everyday. Geography by itself is -first time ever- a subject taking part of the lists of non-fiction best-seller books, even without travel, environment or politics. Either written by geographers trying to make geography accessible and understandable for the general public (Hanson, 1997; De Blij, 2012; Dorling and Lee; 2016; Monmonier, 2018; Murphy, 2018) or non-geographers (Kaplan, 2013; Marshall, 2015), geography books sales show that geography is amazing for everyone.

## 8. GEOGRAPHY AND EUROPEAN CHALLENGES

How Geography can contribute to build the European project? Aforementioned challenges for the global world are particularly meaningful in Europe, in the large geographical definition: the continent divided from Asia by Ural Mountains, Ural River, Caspian Sea, Caucasus Mountains, Black Sea and Turkish Straits, this is fifty sovereign states. Council of Europe has forty-seven state members and the European Union twenty-seven. According to the International Monetary Fund, the European Union was in 2019 the second territory in the world by nominal Gross Domestic Product, after the United States, but the third by Gross Domestic Product based on purchasing power parity (GDP PPP), after China and the United States. Four European countries are in the top eight: Germany, United Kingdom, France and Italy. Fortune Global 500 ranks three European companies in the top ten global corporations worldwide, but 132 in the top 500, belonging to those four countries, but also to Russia, Spain, Switzerland, Netherlands, etc. In three European countries are registered the airlines in the top six ranking of annual number of passengers.

Despite it is the fourth continent in the world in terms of population or Europe or the fifth in terms of surface –even smaller than Antarctica-, Europe is important in the world because of its economic power. And also, because Europe's political, military and cultural power. History is one important explanation as European countries have colonized the whole world except strong Empires or far and mountainous countries in Asia (Turkey, Arabia, Iran, Afghanistan, China, Thailand, Japan, Korea, Mongolia, Nepal and Bhutan). So, Europe has had the biggest cultural influence ever, as European laws have ruled almost all the countries in the world, so influenced the European/Western way of life abroad the continent. Four European languages (Spanish, English, Portuguese and Russian) are among the top seven by number of native speakers or three European languages are among the top five by number of total speakers (English, Spanish and French). Three European countries are permanent members of the United Nations Security Council and 28 out of 30 NATO members are Europeans. Otherwise, European countries have been the most impacted by Covid-19 in terms of infected and deaths, apart from the United States

Accordingly, Europe plays an important role in the global context, and in particular the European Union as the biggest transnational institution. Two of the main challenges of the European Union to become a one and only voice in the world –as they are the United States, China or Russia- are the political cohesion among the State members and the reinforcement of the European citizenship. President of the European Council has declared that the Union needs to be a Confident Global Leader as “*world is changing at lightning speed... and how we respond to these changes will define influence Europe's future*”. European Commission has defined six top priorities, among the two aforementioned -a stronger Europe in the world and a push for the European democracy and citizenship-, but another four: a European Green Deal by being the first climate-neutral continent, a economy that works for people, an action for digital age and the protection of European way of life. Maybe this should be updated with a seventh priority concerning the health, social and economic impact of Covid-19.

Global challenges need global approaches, so European priorities face to spatial and global approaches. At this point, geography can play an increasingly important role in enabling spatial analysis and spatial citizenship, empowering governments, companies, individuals and stakeholders to decision making about European challenges from the local to global scale issues. Well-trained geographers offer geospatial skills in diverse areas such as hazard management, environment and sustainability, local and regional development, land use planning, cultural heritage, retailing, tourism, security and utilities. As a result, geographers are much sought after in the European workplace. In detail, geography can contribute to the six priorities of the European Agenda, based on EUROGEO background:

- European Green Deal: climate change and circular economy research education and proposal of measures. Geographical outcomes (projects, publications, meetings and conferences) address these issues and specific initiatives have engaged and advised stakeholders on, for example, the importance of understanding the Ocean and in developing modern sustainable digital agriculture.
- Economy that works for people, relating especially to developing and sharing innovative practices to encourage lifelong education and employment of those most at risk and the development of spatial thinking skills and the uses of geoinformation. Geographers are also specialist in local and regional development, and regional imbalances reduction policies.
- Europe fit for the digital age. Geographers have been European leaders in the promotion and implementation of digital earth technologies, training different target groups, implementing cutting-edge technologies, developing involvement in the Digital Skills and Jobs initiative, and dissemination the access and use of Cloud-based technologies or open data.
- Protecting our European way of life, by promoting European citizenship in geographical and sustaining European values and cultural heritage.
- Stronger Europe in the world: EUROGEO has consultative at the United Nations and is usually the only geographical voice –from Europe representing geographers all over the world- in some bodies like UNEP, UN-Habitat, Commission on Social Development, NGO Committee, etc. EUROGEO has participatory status at the Council of Europe, too. Beside this, political geographers have contributed to the research of a European agenda in geopolitics.
- New push for European democracy: geographers have led the way in promoting innovative ways to engage and empower young people in democratic processes through geospatial technologies and open data.

## **9. WHAT CAN EUROPEAN GEOGRAPHERS DO TO FOSTER SUSTAINABLE DEVELOPMENT?**

Geography is an essential contribution to the achievement of United Nations Agenda 2030 and Sustainable Development Goals (SDG), as indicated by several recent papers (Georgeson and Maslin, 2018; Liverman, 2018; Nightingale, 2018; Sultana, 2018; Fu, 2020). Despite the transversal approach of SDG's, geography is the most important school subject for Education for Sustainable Development Goals (Chang, Kidman and Wi, 2020; Meadows, 2020), and in particular for European education (Sprenger and Nienaber, 2017; De Miguel, Koutsopoulos and Donert, 2019; De Lázaro, Borderías and Morales, 2020; Jeronen, 2020).

But we think that it is rather the opposite: Sustainable Development Goals extend a spatial concern about the main challenges facing the world today: ecological, economic, social and political. In the first case, physical geography has traditionally been devoted to research into

the biosphere and hydrosphere. In the remaining three, human geography has studied people's places and how different societies –settled over the geographical space, politically organized-develop productive activities, as well as their impact on the environment. In this way we believe that each and every one of the -apparently novel- Sustainable Development Goal is intellectually indebted to the different fields of study of geography, scientifically consolidated over decades, as shown in the following table:

**Table 1.** Relationships between geography and SDG's

SUSTAINABLE DEVELOPMENT GOALS	GEOGRAPHICAL STUDY
SDG 1. NO POVERTY	SOCIAL AND ECONOMIC GEOGRAPHY
SDG 2. ZERO HUNGER	SOCIAL AND RURAL GEOGRAPHY
SDG 3. GOOD HEALTH AND WELL-BEING	SOCIAL GEOGRAPHY
SDG 4. QUALITY EDUCATION	SOCIAL GEOGRAPHY
SDG 5. GENDER EQUALITY	SOCIAL GEOGRAPHY
SDG 6. CLEAN WATER AND SANITATION	HYDROGEOGRAPHY
SDG 7. AFFORDABLE AND CLEAN ENERGY	INDUSTRIAL GEOGRAPHY
SDG 8. DECENT WORK AND ECONOMIC GROWTH	ECONOMIC GEOGRAPHY
SDG 9. INDUSTRY, INNOVATION AND INFRASTRUCTURE	TRANSPORT AND ECONOMIC GEOGRAPHY
SDG 10. REDUCES INEQUALITIES	REGIONAL GEOGRAPHY
SDG 11. SUSTAINABLE CITIES AND COMMUNITIES	URBAN GEOGRAPHY
SDG 12. RESPONSIBLE CONSUMPTION AND PRODUCTION	ECONOMIC GEOGRAPHY
SDG 13. CLIMATE ACTION	CLIMATOLOGY
SDG 14. LIFE BELOW WATER	BIOGEOGRAPHY AND HIDROGEOGRAPHY
SDG 15. LIFE ON LAND	BIOGEOGRAPHY
SDG 16. PEACE, JUSTICE AND STRONG INSTITUTIONS	POLITICAL GEOGRAPHY
SDG 17. PARTNERSHIPS FOR THE GOALS	POLITICAL GEOGRAPHY

The European Union has included SDG's as one of its flagship initiatives, has presented a reflection paper on a "More sustainable Europe by 2030" and also has declared during the 2019 United Nations High-Level Political Forum for Sustainable Development that "*the European Union and its Member States are at the forefront of adopting the 2030 Agenda*". In that reflection paper, some of the European Commission policy highlights have been related to SDG's, so some geographical issues are the core of the European Union agenda for 2030, like European Pillar of Social Rights (social geography), EU Youth Strategy (social geography), Investment plan for Europe (economic geography), Horizon 2020 research and innovation program (geographical and interdisciplinary research), Clean planet long-term vision (environment), EU action plan for nature (environment), Urban agenda for the EU (urban geography and urban planning), and EU cohesion policy (regional geography and regional planning), among others.

To monitor, analyze and visualize sustainable development and spatial effects of the European Union policies on the countries, regions and municipalities, the European Commission has also deployed several initiatives and tools like Eurostat, GISCO (Geographical Information System of the Commission), ESPON (European Spatial Planning Observatory Network), the European Forum for Geography and Statistics, Copernicus (Satellite Earth Observation program) or the INSPIRE (Infrastructure for Spatial Data) Directive. In all of them,

geography is a key discipline to understand spatial changes and geographers contribute decisively to their success.

Despite the implementation of the European Higher Education Area (EHEA) to foster – among all the EU Member States- the convergence in higher education policies, mobility, recognition of credits or employability, despite the European Qualifications Framework, and despite the Skills Agenda for Europe, the recognition of professional qualifications and regulated profession belongs to Member States. Directive 2005/36/EC of the European Parliament and of the Council only affects to some health, education or engineering professions, but not to geographers.

In the United States, geographers can be qualified -apart from teaching geography in any education level- as urban planning professionals at the American Institute of Certified Planners (AICP) or as GIS professionals (GISP) at GIS Certificate Institute, USGIF or ESRI. Besides certification, American Association of Geographers has developed the Enhancing Departments and Graduate Education in Geography (EDGE) project (Solem, Foote and Monk, 2013) to develop a theoretical framework of workforce needs and expectations in professional geography. AAG job center website shows –in non academic functions- a wide diversity of geography profiles for careers in business, government and NGO's in both profiles but in others like environment, landscape, community development, spatial analysis, remote sensing, weather, hazards and emergency planning, tourism, edition, etc. In Europe, professional status of geographers is different from one country to another: Chartered Geographer in the United Kingdom (Royal Geographical Society of Geography, with the Institute of British Geographers), *Colegio de Geógrafos* in Spain (professional body), *Deutscher Verband für Angewandte Geographie* in Germany (professional association for applied geography), *Formalizzazione di figure professionali nell'ambito della GIScience* in Italy (regulation of skills for GIS professionals), etc. In France, there is no official certification or body for geographers, but graduate students can join government as civil servants in regional planning (*aménagement du territoire*), local development, urban planning, GIS and environment (Pichon et al., 2017).

One way or another, geographers contribute decisively to the definition, implementation, monitoring and assessment of European policies seeking sustainable development, but also to other key challenges for the future of Europe, like European citizenship after Brexit, demographic decline or increasing regional imbalances or autonomous European geopolitics facing United States, China or Russia. Geography is a powerful and useful knowledge for governments, companies and society in general. Top European universities are offering geography degrees as they have realized that training geographers is important due to their combination of transferrable skills including analytical reasoning, problem-solving and critical thinking. A few years ago, Times Higher Education published a debate about geography's amalgam of a wide range of subject matter and methodologies as strength or as weakness - *Geography's place in the world*-. Five scholars expressed controversial opinions about the status of geography, but all of them have agreed that geographical approach is the best one for taking on globalization and sustainability, because it's a discipline based on the principles of diversity, interconnection, complexity and continuous evolution, just the features of the current context.

## 10. HOW ARE GEOGRAPHERS TRAINED IN EUROPE?

Five scholars aforementioned also agree that applied geography has an employability rate higher than the average of graduates for qualified professions, not only because the geospatial revolution. EHEA has brought a common structure of undergraduate and graduate programs in

all European countries, usually three academic years (180 European Credits (ECTS) for Bachelors and one or two years (60 or 120 ECTS) for Masters, although there are some countries like Spain whose Bachelors last four academic years (240 ECTS). EHEA has given the opportunity -to all European Departments of geography at Universities- to review and update their syllabus, not only based on the body of geographical knowledge arising from research and scientific consolidation, but taking into account geographical skills and employability.

Thus, Bachelors in Geography across Europe usually have, more or less, the same structure: Human Geography, Physical Geography, Geographical skills and methods, Spatial challenges and applied geography. In Masters level, European geographers usually follow professional specialization in Education –as teaching geography in schools is still the main professional opportunity for geographers-, or in GIS, environmental management, urban and regional planning, globalization, sustainable development, climate change, water resources, international relations, tourism, etc.

In the United States, GIS plays an important role for the geographers training, but in the United Kingdom such pressures are less, and cultural geography is more important (Johnson, 2018). Moreover, geography in southern countries like France, Spain or Italy is still taught under the influence of regional geography, while in northern countries (Germany, Netherlands, Scandinavian countries) or eastern countries, physical geography and environmental studies are prevailing in geography programs. On the one hand, there are some strong national communities of geographers, with diverse organizational structures and diverse status of academic geography (Vandermotten, 2004). This is in part because the recognition of geography in school education as an independent school subject or as a subject taught jointly to History (Butt, 2006; Milson et al., 2012; De Miguel and Donert, 2014; De Miguel et al., 2018). On the other hand, Erasmus program is fostering international student's and teacher's mobility. And international cooperation in research and publications is increasing, as we can check in EUROGEO or IGU Conferences, year after year. European research programs like Socrates/Comenius/Erasmus+, European Research Council or Framework programs (currently Horizon 2020) are decisively contributing to transnational collaborations among European geographers.

After the signature of Bologna Declaration by the European Ministers of Education –as the first milestone and guiding document for the implementation of the EHEA-, one of this pioneer research projects and European network for geography in higher education was *HERODOT*. This project was leaded by EUROGEO and it was, between 2003 and 2009, a partnership of more than 200 organizations interested in improving the quality of learning and teaching geography and in promoting the significance of geography as a discipline. *HERODOT* adopted the methodology of the European Tuning project: academics considering how higher education geography should be taught, and what geographers should do. *HERODOT* emerged out of an awareness of the need for graduates in the workplace, and the relevance of key skills to employers, resulting in the preparation of relevant curriculum changes in an enlarging Europe.

The network therefore published a report (Donert, 2007) called *Aspects of the State of Geography in European Higher Education*. It proposed some guidelines to help departments of geography design the new training system for European geographers and to enhance curriculum developments under the Bologna Process. Through this network, it was found that the EHEA was a great opportunity to revamp higher education in geography. It also showed that the challenges defined were very similar in different European countries: to promote the quality and innovation of geography education through active methodologies, turning student learning into the central focus of courses; to intensify connections between school and university geography, and also to strengthen links between geography departments and professional associations; to ensure the training of geographers as professionals for new fields of activity

and jobs; to improve skills acquisition for ICT and GIS, and to increase interdisciplinary but also specialization, in undergraduate and postgraduate programs. All these suggestions have been incorporated in the syllabus and in the real training of geography in most European higher education institutions, as well as *Geography of Europe itself* as an independent course, in order to have better knowledge of the European spatial dynamics and to raise awareness of European citizenship among geographers.

This report also included a section that reflects the results of a survey: Physical and human geography, environment and cartography were the courses mostly taught in European geography departments of higher education, with an average rate higher than 82% GIS and remote sensing were placed in a mid rank: 73 and 62%, respectively. On the contrary, applied geography was taught only in 48%, and professional training in 34%. It means that before EHEA, higher education was focused on academic geography, theoretical geography combined with “conventional” teaching methods and techniques of geography, mainly cartography. But nowadays, Geography teaching in European higher education is more interdisciplinary, it has a lot of connections to social challenges – as in the U.S. has been asked for training geographers responding to strategic directions (National Research Council, 2010)- and to professional opportunities for geographers (internships, bachelor and master dissertations, fellowships), as well as placing big importance on professional competences and skills for geospatial technologies (De Miguel and De Lázaro, 2016).

Some European Commission funded projects leaded or participated by EUROGEO, after *HERODOT*, have also contributed to a better geography training from the European perspective and values. *Digital-Earth.eu* has promoted innovation and best practices in the implementation of geo-media as a digital learning environment for school learning and teaching (De Miguel, 2012). The project has encouraged the sharing of innovative practices and it has published guidance for curriculum and training. *Spatial Citizenship (SPACIT)* has defined the role that each and every citizen should accept. In order to fully participate in society, a spatially literate person should be able to critically reflect on spatial representations, communicate with the aid of maps and other geospatial representations. *GeoSkills Plus* project has been a project aiming to match labor market needs with geospatial education offer in Europe. Geo Skills Plus has exchanged best practices in Europe and it has also identified the gaps between the supply of geospatial jobs and the demand for qualified graduates in different European countries, and set up ways to bridge the gap. *GI-Learner, Developing a learning line on GIScience in education*, developed a geospatial thinking learning line for secondary schools, so that integration of geospatial thinking can take place (Zwartjes, 2018). After defining a list of ten spatial thinking competencies, lesson materials related to the curriculum were produced, thus facilitating the implementation in education on short term. To measure the impact of the learning lines on spatial thinking, a self-assessment test was therefore developed. *YouthMetre*, has established an innovative geospatial data tool, with the potential to improve and/or transform youth policies and practices. YouthMetre is established to support the engagement of young people –non geographers- in developing relevant youth initiatives in Europe addressing the European Union Youth Strategy, using e-participation as an instrument to foster young people’s empowerment and active participation in democratic life. *D3, Developing Digital Data Literacy*, is a project that has as main objective to promote the use of digital technologies and open data tools in learning and teaching increasing the capacity of learning and teaching to integrate democratic engagement considerations into educational plans and strategies. Last, *MYGEO* aims at strengthening the link between academia and the labor market by developing methods and tools for teaching and learning through the use of Geographic Information Systems (GIS) in higher education.

## 11. A NEW DECADE FOR EUROGEO AND FOR GEOGRAPHY IN THE WORLD

The vitality of European geographers proves that geography in Europe, as elsewhere, matters more than ever to propose, understand, and analyze solutions to the challenges posed by globalization. Some challenges are common to all—sustainable development, climate change, demographic and urban changes, energy, water, and food supply—but others are specifically European. The continent has been protagonist of the History until the first half of 21st century. European Union has been the most important outcome of international understanding, in particular after the two world wars of 20th century. After the immense destruction of lives and goods, the following 75 years have been featured by economic growth, social cohesion, territorial integration and extension of liberal democracy based on the respect of freedoms: privacy, property, thought, expression, political or religious beliefs, trade, movement, and personal, economic, intellectual and cultural initiatives. And this is how it must to be in the future, despite the challenges of globalization.

Europe is at a crossroad because of new populism and nationalism, the post Covid-19 economic crisis, and a lack of leadership. Geopolitics and geo-economics may be Europe's two main particular challenges, as it confronts other global powers. It has often been said that the best way to predict the future is to prepare it. Geography can help. Geographers have the necessary data, skills, understanding and thinking to give meaning to complex interconnections between politics, economy, society, culture, and the environment. In 2020 geographers celebrate the bicentennial of the foundation of the first Chair of Geography at the University of Berlin. Next year another bicentennial will be celebrated: the creation of the first geographical society in Paris. In 2022, a conference in Paris will commemorate one hundred years since the establishment of the International Geographical Union. In Europe and from Europe, geographers from all around the world, have an outstanding opportunity to explain how geography will become even more necessary and useful for society in the next decades, but specially in the next one. IGU Strategy for 2015-2022 has included EUROGEO as a key association for leading international geographical and environmental research, indeed.

Decade 2020-2030 will focus on the attainment of sustainable development goals, so geographical issues will be placed at the center of any debate. At the end of the decade, EUROGEO will celebrate its Golden Jubilee (De Lázaro, 2013). Until now, we have organized twenty-nine conferences; we have networked thousands and thousands of geographers from Europe and beyond, and also almost two hundred of Departments of Geography and other geographical organizations; we have successfully run more than fifty European projects; we have consolidated two recognized publications (*Key Challenges in Geography* Book Series and this *European Journal of Geography*). EUROGEO is proud of the work done along these forty years, under the Presidency of Henk Meijer (1979-2002), and in particular under the Presidency of Karl Donert (2002-2019).

But EUROGEO is still more engaged than ever to preparing geographers for aforementioned challenges, to disseminate geography to geographers (professionals, researchers, and educators from primary and secondary to University levels) and to general public through newsletters, social media and activities like field trips. And EUROGEO will be lobbying for geography in Europe and beyond at the United Nations, at the European Union institutions, at the Council of Europe, at the International Geographical Union, and other national and international bodies. In this decade, we will be strengthening our commitments with geographical and geospatial education, digital and data literacy, sustainable development, European values and citizenship, or another geographical topics, as we want to contribute to a better future. In the twenty-first century, global trends will intensify, but places, spaces, and environments will remain still more diverse than ever and geography more essential than ever.

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