

Response from the Royal Geographical Society (with IBG)

Royal
Geographical
Society

with IBG

Advancing geography
and geographical learning

● UN-GGIM Integrated Geospatial Information Framework

June 2020

The Society welcomes the committee's attention to establishing enduring capacity development and education programmes so that the value and benefits of integrated geospatial information management is sustained for the longer term. We are delighted to see recognition of the contribution geography and geospatial sciences, independently and together, make in developing the necessary skills and capacity for future high-quality geospatial information management.

In our recommendations below, we draw on our experience as the learned society and professional body for geography in the United Kingdom (with more than 16,000 Fellows and members), working closely with geographers in schools, universities and professional practice. We set standards (for the discipline and individuals), accredit programmes and individuals (notably Chartered Geographer, with a specific stream in GI/GIS), deliver mentoring and training, and profile careers and opportunities. We advocate for the discipline, engage the public through an extensive and broad range of programmes, and are actively engaged in knowledge exchange activities across all our communities.

We have structured our comments around the four elements of the strategic pathway. In particular, we sign-post examples and resources from our work in the UK that may provide ideas and/or support other countries in their work. We feel that additional resources and examples that are tailored to geography and geospatial skills may enhance the pathway. We would be delighted to discuss any of these in further detail.

Awareness

1. We recognise there are many disciplines and professional bodies cultivating and developing this ecosystem of geospatial skills, from data science to engineering, to design and beyond. All these are critical. However, producing and consuming geospatial data intelligently, and interpreting it to unlock economic value and deliver social benefits, does require specialized skills. These **skills are needed not just by technical specialists but also (and critically) by decision-makers and consumer of geospatial data, analysis and insight**. Geography has and will continue to play a key role in the delivery of geospatial and broader geographical skills of interpretation, analysis and visualisation. These skills and competencies need to continue to be cultivated, supported and developed across the education and career pipeline, embracing new technologies and approaches and the ubiquity (and multiple sources) of spatial and geographical information.
2. Geographical and other spatially-focused subject and professional bodies, membership bodies and associations across the world play a key role in awareness raising and demonstrating impact and value of geographic information. They should be a **key element**

of local infrastructure for action plans to draw upon, both in terms of disciplinary and sectoral guidance and enabling contact with communities of local experts.

3. Schemes, such as the RGS-IBG **Geography Ambassadors** scheme (www.rgs.org/Ambassadors), serve to reinforce and communicate the benefits and skills of geography and geospatial to students in schools through practical activities and engagement. The scheme features both undergraduate and professional ambassadors making presentations to schools and is a key pathway to engage young people. In addition, '**I am a geographer**' career profile series (www.rgs.org/lamageographer) highlights the wide range of career paths and opportunities for geographers and geospatial specialists and the applications of this field raising awareness well beyond those directly interested.

Formal education

4. **Foundation skills and awareness of geospatial data and insights must start in the earliest stages of education in schools and be embedded in the curriculum.** Currently, core geospatial skills are delivered in UK schools almost exclusively through geography, where geography is part of the statutory national curriculum in English schools up to Key Stage 3 (up to Year 9, or about 14 years old). Revisions to the curriculum at KS3, GCSE (the 6th most popular GCSE) and A-Level (one of the top ten A-Levels) have enhanced the coverage and demand for data skills generally, and geospatial skills, analysis and applications more generally, in both taught content and assessment. The Geography Ambassadors scheme (see Para 3) encourages broader uptake of geography at GCSE and A-Level stages. Our **Going Places with Geography** (www.rgs.org/GoingPlaces) and **Choose Geography** (www.rgs.org/ChooseGeography) websites reinforce the benefits of studying geography, the skills students can expect to develop, and the wide range of career destinations.
5. Curriculum delivery must be underpinned by **well-trained, experienced and confident teachers with training in geography**, which can be achieved through targeted programmes of subject-specific teacher CPD, exemplar educational resources, networking and mentoring. This can include partnerships with other organisations to build capacity and experience, such as: Esri UK's scheme to offer ArcGIS free to all UK secondary schools, supported by a network of professional 'GeoMentors' to support teachers, and the Society's work with the Nuffield Foundation to deliver events and resources for teachers to support learning and teaching digital skills.
6. Beyond geography, it is important to encourage the **take-up of initiatives to introduce core concepts of spatial data to other subjects** through, for example, mathematics, computer science, design, economics and business studies. The Society has supported networking between subject leaders in specific areas, but these initiatives work best at a large scale, with the involvement of multiple subject bodies/associations, including teacher bodies.
7. At the university level geospatial data and its interpretation needs also to be embedded in appropriate benchmark standards, at undergraduate and master's levels. The Society was instrumental in the establishment of the **Subject Benchmark Statement for Geography**, and coordinated 2014 and 2019 updates for the current version

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(<https://www.qaa.ac.uk/docs/qaa/subject-benchmark-statements/subject-benchmark-statement-geography.pdf>). This statement sets out the expected knowledge, skills, understanding and attributes of graduates from undergraduate geography programmes in the UK and may be a valuable exemplar for other countries (it is already drawn upon by some for local university subject-level quality assurance).

8. **Programme accreditation schemes** (www.rgs.org/accreditation), undergraduate and postgraduate (linked to Subject Benchmark Statements), and drawing on expert peer review, recognise that programmes are delivering the necessary knowledge, understanding, skills, techniques and personal/professional attributes that employers across a range of sectors expect of graduate geographers. Employer engagement in setting the standards, and evaluating programmes, is a critical element of such schemes.
9. **Specific pathways for advanced research training enable a smoother research/industry interface**, embedding geospatial awareness and training in interdisciplinary PhD training. Examples include the University of Leeds/Liverpool ESRC DTC or the University of Newcastle/Nottingham EPSRC DTP, which both have embedded university partnerships and placements.

Professional Training

10. We encourage the Committee to make more explicit reference to **the role of subject and professional bodies in supporting and enabling** this element, and **the role of professional accreditations, competency standards and industry certifications** in the opportunities for professional training.
11. Our **Chartered Geographer scheme** (www.rgs.org/CGeog) is an internationally-recognised independent professional accreditation for individuals using geography in the workplace. Chartered Geographers are approved by a process of expert peer-review, on the basis of a portfolio application and reflective statement demonstrating how their geographical skills and knowledge are being professionally applied. They also make a commitment to the continual development of their geographical and other skills through annual CPD. **The Framework of Competencies** for Chartered Geographer (<https://www.rgs.org/professionals/chartered-geographer/framework-of-competencies/>) provides a valuable framework against which individuals can assess their professional competence and impact drawing upon geospatial skills and knowledge, and provides a structure for further development across a career. **The Professional Code of Conduct** (<https://www.rgs.org/professionals/chartered-geographer/code-of-conduct/>) guides responsible practice. Other professional bodies and organisations also offer recognition or accreditation related to geospatial information (RICS; CICES, GISCI's GISP (<https://www.gisci.org/>), with accompanying frameworks that may prove useful.
12. We are also developing a supportive framework towards chartership through our Professional Geographer scheme and collaboration with the Association for Geographic Information's (AGI) Early Careers Network. Both organisations are working to support early career geospatial professionals and provide mentoring, networking opportunities, resources and career advice.

13. Alongside Chartered Geographer, the Society offers a range of **events, activities and initiatives that foster the professional development and networks** of geospatial professionals (www.rgs.org/professionals). Similar activities by other professional bodies could be showcased.
14. Alongside formal education, there are other routes into geospatial careers. In the UK: **apprenticeships also offer opportunities for work-based learning and career development** related to geospatial information, though this is limited at present. Geospatial and mapping science apprenticeships (at Level 3 and Level 6) have been developed to serve the needs of the surveying/geomatics profession. A new apprenticeship at Level 7 is in the process of being proposed, to serve the needs of a broad range of sectors drawing upon spatial data analytics. An occupation proposal will be available shortly and may provide a useful exemplar.
15. In our work with higher education and secondary school educators we have noticed concern about having **sufficient time and resources to stay abreast of state-of-the-art technical skills** required for the rapidly evolving geospatial technical landscape. Action plans that address the priority and resources needed (time, funds, opportunities), and which enables networks for educators to interact with practitioners/professionals will enable faster progress.

Entrepreneurship

16. Through formal and informal training, entrepreneurial skills do need to be developed alongside core geospatial skills. Innovation and business awareness, as well as a myriad of transferable skills, underpin effective geospatial professionals and a forward-looking industry.

We would be delighted to work with you to further develop this strategic pathway, and/or make introductions to Chartered Geographers across a range of sectors and skillsets (from education and curriculum planning to geospatial information management to supporting/enabling networks of knowledge and practice) to support the development of specific action plans.