



**COORDINATING COMMITTEE FOR GEOSCIENCE PROGRAMMES
IN EAST AND SOUTHEAST ASIA (CCOP)**

53rd CCOP Annual Session
16-19 October 2017
Cebu, Philippines

Cooperating Country Report of UNITED KINGDOM

Submitted by

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(For Agenda Item 4)



**COORDINATING COMMITTEE FOR GEOSCIENCE PROGRAMMES
IN EAST AND SOUTHEAST ASIA (CCOP)**

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ANNUAL COOPERATING COUNTRY REPORT

Country/Organization:	UK/BGS	Period:	1 July 2016 – 30 June 2017
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1. Summary

BGS continues to pursue its research interests globally, funded from its own budgets, research grants or in response to direct commissions from UK and international government agencies.

In 2016 the UK Government announced new funding initiatives to develop and expand international research targeted to the UN Sustainable Development Goals and the 2015 Sendai Framework for Disaster Risk Reduction. As a result, BGS is realigning up to 12% of its annual budget over the next 3 years to focus on new applied research programme entitled “*Geoscience for Sustainable Futures*”. In partnership with developing countries we seek to co-design and develop new projects that will have impact and underpin economic growth and social development. We have implemented three research platforms, one of which focusses on the Resilience of Asian Cities.

At the same time the UK university research effort is also expanding with new opportunities under the Global Challenges Research Fund (GCRF) and Newton Fund grant schemes aiming to link natural and human research.

BGS is already a partner in a number of new research initiatives and is keen to explore partnerships with CCOP members especially in the fields of informatics, energy, resources and urban resilience. We have expertise and developing experience in specialised disciplines, including groundwater, informatics, urban geology, carbon capture and storage (CCS), shale gas, and geohazards (volcanoes, earthquakes, landslides and tsunamis).

A review of recent and current international work by BGS can be found in the publication entitled *BGS Global Geoscience*, to be published in September 2017 (accessible via website <http://www.bgs.ac.uk/downloads/> in due course).

2. Review of current technical activities and geoscience programmes in the CCOP Region (Multilateral or Bilateral)

China

BGS continues to explore and develop linkages with various Chinese academic and government institutions on geological hazards research, remote sensing analysis, earthquake and seismic analysis, low carbon energy supply and shale gas.

Malaysia

BGS is part of a £19m 5-year multi-disciplinary UK research programme on Science for Humanitarian Emergencies & Resilience (SHEAR). This includes partners from Malaysian universities and government. It is aimed at developing research on, hydrological controls on landslide risk as part of multi-hazard risk assessment and real time monitoring of risk, using remote sensing and big data. MOU with Malaysia has been signed and preliminary meetings held.

BGS is also investigating use of INSAR sensors on electricity pylons to monitor and exposure of the power grid to ground movement.

Myanmar

With UK Government support BGS staff had a return visit to Myanmar to establish links with the Geological Survey (MOGE) and Oil & gas Planning Department (MoEE). A follow-up visit to UK to explore links for education and knowledge transfer is planned for 2017.

Philippines

BGS geologists are working with NGOs, government and local universities to explore safer building and self-recovery, our input is into the physical environment related to water supply and hazards.

Singapore

BGS staff continue to work on a contract with the Building and Construction Authority to log borehole cores, interpret seismic data and geological mapping to fieldwork with the aim of confirming and upgrading the lithostratigraphical and tectonic framework. A new geological map and revised 3D sub-surface model is planned for 2018.

South Korea

BGS geologists continue to work with KIGAM in Quaternary mapping and urban geology.

Thailand

BGS hydrogeologist attended UK-SE Asia Newton Fund workshop in Bangkok to explore research opportunities.

Vietnam

BGS signed an MOU with GDGMV and VIGMAR and is developing a research programme for Hanoi City and its wider catchment, including data systems and 3D modelling. BGS hydrogeologists are also involved in groundwater studies for Ho Chi Minh City.

3. Proposed future activities and assistance to CCOP in support to current and future activities

With respect to the new funding initiatives mentioned above BGS is planning to invest >£200,000 pa for the next three years in developing joint research projects and will be seeking local partners to bid into research calls in the following areas:

1. Resilience of SE Asian cities

The development and resilience of cities in SE Asia in the face of competing demands on resources (energy, water, food, etc.) and exposure to multi-hazards (typhoons, earthquakes, volcanic eruptions, landslides, etc.) requires integration of complex datasets and construction of 3D models to inform planning and development.

For example, South Asian cities have some distinct groundwater challenges. In coastal cities, such as Bangkok, controlling subsidence associated with groundwater withdrawal and managing multi-layered aquifers with legacy problems of contamination and saline intrusion are major local issues.

BGS is therefore very keen to discuss with CCOP members and to develop new opportunities in the region. We would like to propose a **thematic workshop** covering some of the following topics:

Urban geological mapping; geohazard mapping; core logging and interpreting borehole evidence; application of remote sensing and geophysical techniques; building 3D water resource models and understanding uncertainty.

Please contact: Dr Martin Smith, mismi@bgs.ac.uk

2. Managing and relating large datasets

The delivery of digital data to attract investment in the water, mineral and energy sectors increasingly relies on open source, smartphone applications, 3D models and web portals. These require geological surveys to have a digital workflow that encompasses data capture and the development of a central database linked to data feeds and visualization tools

Over many years BGS has developed such systems for data capture and formatting and database architecture and release. **We are interested to share our experiences with CCOP members and to explore the capacity building and knowledge exchange.**

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