PRESS RELEASE

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Quality not quantity is the greatest threat to Asia's most important source of groundwater

Scientists from the British Geological Survey (BGS) have published a new paper in *Nature Geoscience* mapping out the quantity and quality of the world's most important aquifer.

The area surrounding the Indus, Brahmaputra and Ganges Rivers, known as the Indo-Gangetic Basin), accounts for 25% of global groundwater abstraction, supporting the livelihoods and agricultural activities of more than 750 million people in Pakistan, India, Nepal and Bangladesh. Most of the groundwater is used to irrigate food crops, such as rice and sugar cane, but it is also used for drinking water especially for the cities of Delhi, Dhaka and Lahore.

For several years satellite measurements have found that groundwater levels are generally declining across the region as groundwater abstraction for agriculture increases. However, this current study, published online this week in Nature Geoscience, looked in much closer detail at how groundwater quality and quantity varies and found that the greatest threat to groundwater in the region is more likely to be from water quality problems than widespread depletion. The BGS led study, funded by the Department for International Development (DFID), reveals that over 60% of the accessible groundwater is no longer drinkable or usable for irrigation due to high concentrations of arsenic or salt.

Professor Alan MacDonald, principal hydrogeologist at the BGS explains the importance of this new research: "This study highlights the importance of monitoring groundwater quality as well as quantity. These detailed measurements reveal how groundwater levels can be rising as well as falling in the area and also the scale of the problems posed by poor water quality"

The study involved researchers from the UK (British Geological Survey, University College London and the overseas Development Institute), in addition to Pakistan, India, Nepal, Bangladesh and the USA.

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Notes for Editors

The following are available for interview:

- Prof Alan MacDonald, British Geological Survey

A full version of the published paper can be found at:

http://dx.doi.org/10.1038/ngeo2791

For additional information go to: www.bgs.ac.uk

The British Geological Survey

The British Geological Survey (BGS), a component body of the Natural Environment Research Council (NERC), is the nation's principal supplier of objective, impartial and up-to-date geological expertise and information for decision making for governmental, commercial and individual users. The BGS maintains and develops the nation's understanding of its geology to improve policy making, enhance national wealth and reduce risk. It also collaborates with the national and international scientific community in carrying out research in strategic areas, including energy and natural resources, our vulnerability to environmental change and hazards, and our general knowledge of the Earth system. More about the BGS can be found at www.bgs.ac.uk.

The Natural Environment Research Council

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