

## Information management system on geogenic contaminants

# Groundwater Assessment Platform (GAP): Online GIS platform to assist management of naturally contaminated groundwater



### Region

Global; West Africa and South Asia

### Partners

Eawag

### Background information

Globally, it is estimated that over 300 million people drink groundwater contaminated with arsenic or fluoride. This project contributes to awareness creation and improves capacities to plan and manage mitigation strategies.

### Project objectives

- A sustainably established knowledge hub for geogenic contamination of drinking water
- Active use of the knowledge hub.
- Long term sustainability of the knowledge hub

### Beneficiaries

Government agencies, NGOs, national/local water professionals, local population

### Costs

CHF 1,428,717

### Duration

04.2014 – 12.2017

### Contact

Global Programme Water  
water@eda.admin.ch

Over 300 million people worldwide are exposed to elevated concentrations of arsenic or fluoride in groundwater supplies (geogenic contaminants), which can over time lead to detrimental health effects. The Groundwater Assessment Platform (GAP) is an online open-source data and information portal that provides decision makers with an interactive knowledge hub and source of expertise for analysis and recommendations for action. To date, the platform has been accessed by users and interested parties from 114 countries.

Groundwater is generally seen as a safe alternative to drinking untreated, microbially contaminated surface water. However, around 10% of wells are contaminated with arsenic and fluoride that leach into the groundwater from aquifer rocks and sediments. This causes severe health effects, particularly for those who may already be malnourished. Ingestion of excess arsenic over long periods can result in various forms of cancer amongst other conditions, while high levels of fluoride are responsible for the development of dental and crippling skeletal fluorosis.

Developing countries are at high risk of elevated arsenic or fluoride concentrations but have little capacity to systematically collect, store and analyze data or have access to a convenient means of sharing information on drinking water quality based on a sound regulatory framework. These gaps and the resulting mitigation strategies for geogenic contaminants in groundwater have provided the basis for EAWAG to develop an online platform for wider use outside the research community.

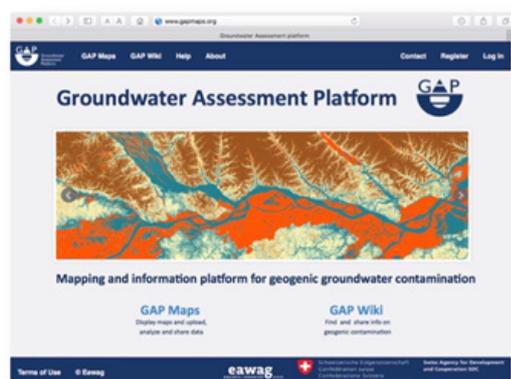
Central to GAP, but not limited to with regard to water quality, are arsenic and fluoride hazard maps and tools to predict where geogenic contaminants may occur for areas that have not yet been comprehensively tested. GAP allows users to:

- browse available data;
- upload and perform data analysis in their own protected workspace;
- share water quality data and maps with other users, and
- exchange information on mitigation activities.

An integral part of GAP is to increase the capacity of potential users through coaching workshops and online webinars. One outcome of this capacity building is the development of case studies using GAP, for example, in Burkina Faso to assist with issues of natural arsenic occurrence due to mineralized zones in bedrock, in India to promote information exchange related to high incidences of reported fluorosis and in Pakistan where naturally occurring elevated arsenic concentrations are being analyzed for their relationship to other geospatial data sets.

There is a goal to achieve long-term sustainability and global reach through active collaboration with international organizations such as WHO, UNICEF, UNEP, UNESCO and other strategic partners. With such partnerships, we hope to collectively work toward the following vision: **To assist communities, national and international institutions, civil society and research organizations in having access to maps, data and relevant information to enable all people and the environment to have an equitable access to safe groundwater (SDG6).**

Additional information:  
[www.gapmaps.org](http://www.gapmaps.org)



- Mapping
- Modeling
- Sharing
- Wiki