



**SWISS WATER
PARTNERSHIP**

Groundwater Paradox: A Challenge for Society

5 Marketplaces



Unlocking the
Potential of
Groundwater
for the poor



Dr Jenny Grönwall, SIWI



Groundwater and the urban poor



- 30 % of urban population in slums; in SSA = 55 %
- Inadequate (piped & public) water services
- **Paradox:** In 2010, 269M urban poor relied on groundwater as 'main' source, but
 - UNKNOWN how many urban poor are GW dependent today
 - What GOVERNANCE solutions are needed

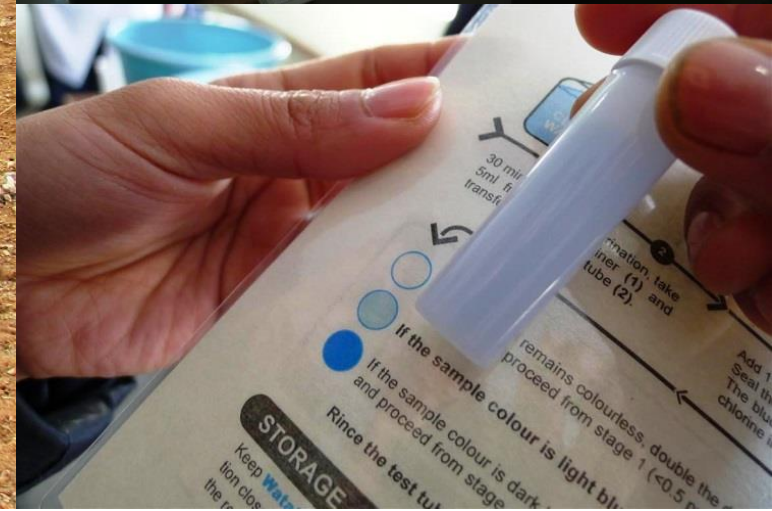


An integrated Water and Sanitation approach in Democratic People's Republic of Korea

Marc-André Bünzli, *MSc Earth Sc., MSc Env., FGS*

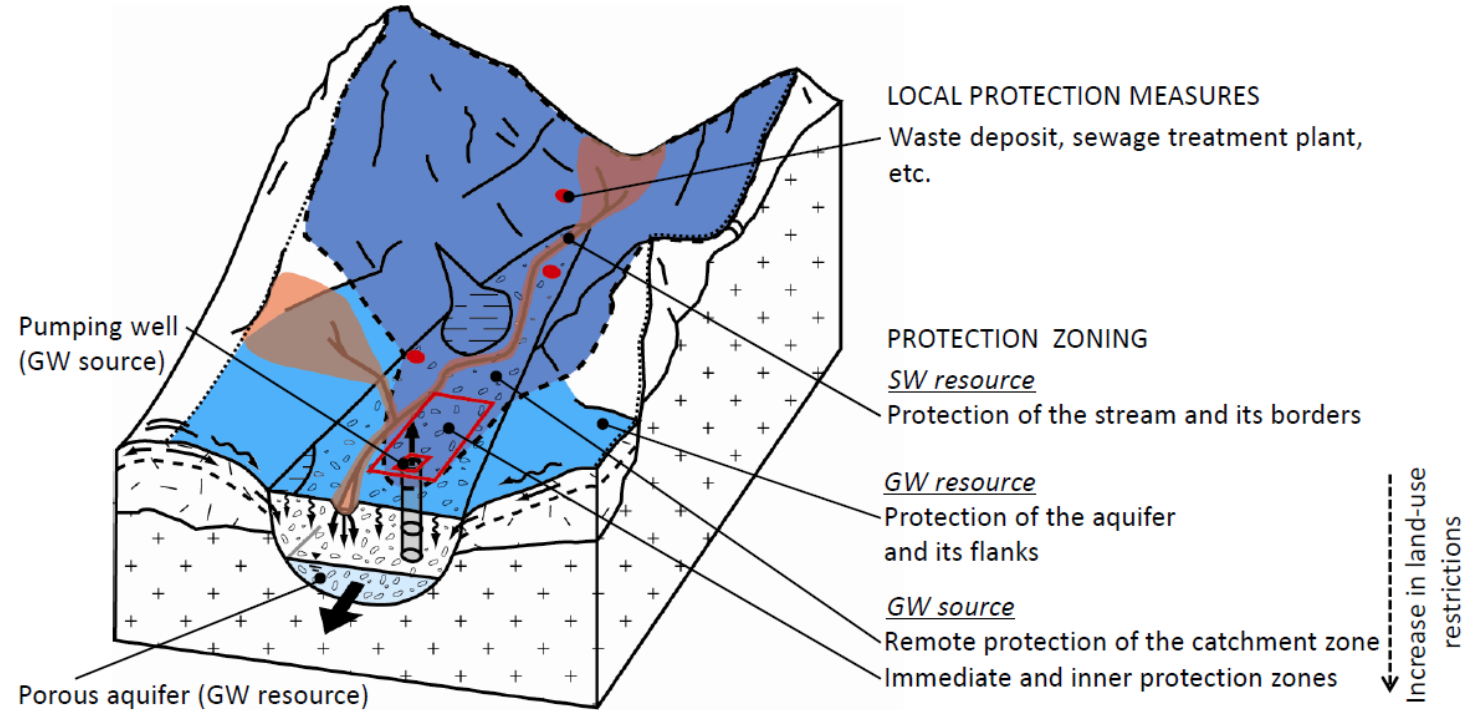
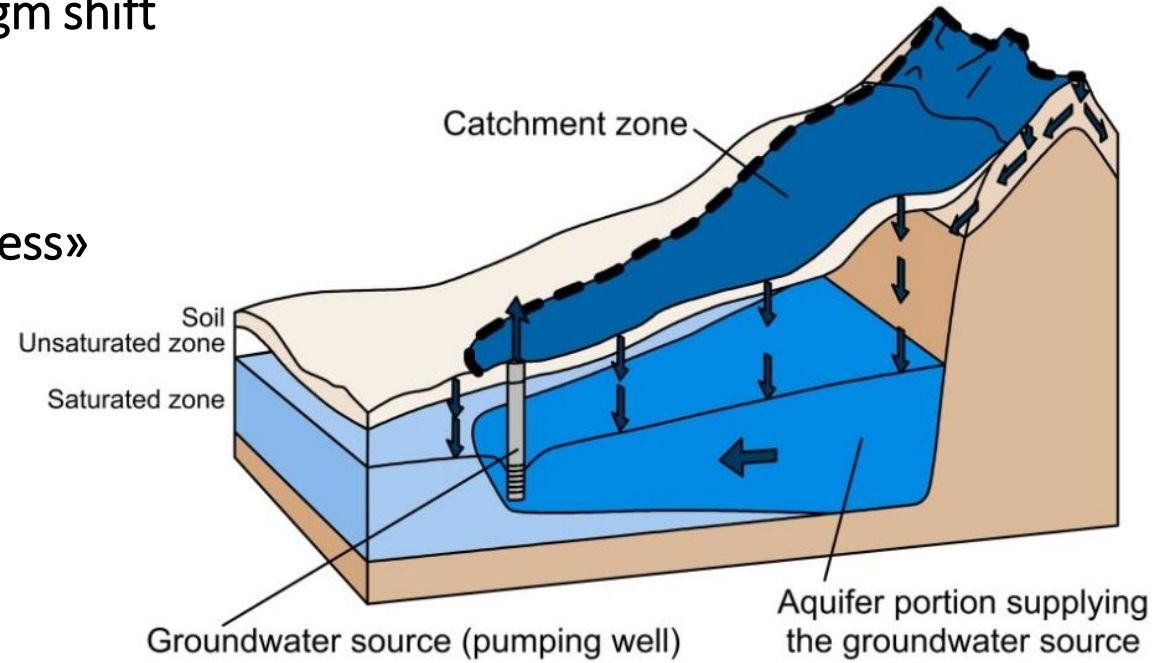
Head SHA WASH Expert Group

Swiss Agency for Development and Cooperation



Managing groundwater – a paradigm shift for improved water quality

«Groundwater is to water what unconscious is to consciousness»



Exploring the sector thinking silo with the example of monitoring and protection of groundwater in Switzerland

Michael Sinreich



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Swiss Federal Office for the Environment FOEN



**Swiss Hydrogeological Society
(International Association of Hydrogeologists IAH)**

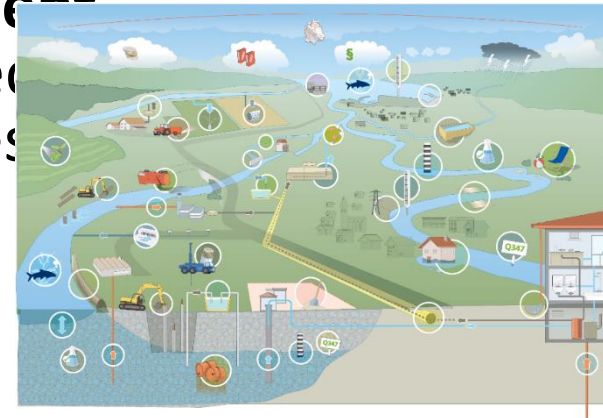
- **Making the invisible visible**

Holistic water resources assessment by complementary groundwater-surface water quality-quantity monitoring



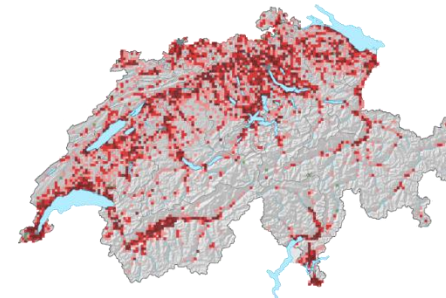
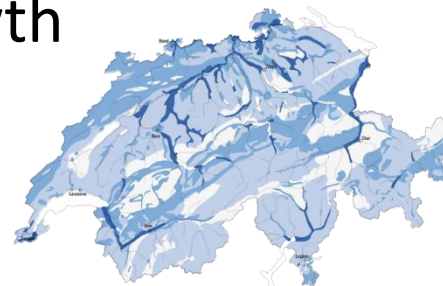
- **Integrated planning and management**

Considering the needs of diverse sectors and their impact on water resources



- **Sustainable development**

Challenge of harmonizing groundwater protection with economic growth



ECHO: Shaping the Future of How the World Looks at Water – Satellites, Remote Sensing, and Hydrologic Modeling –

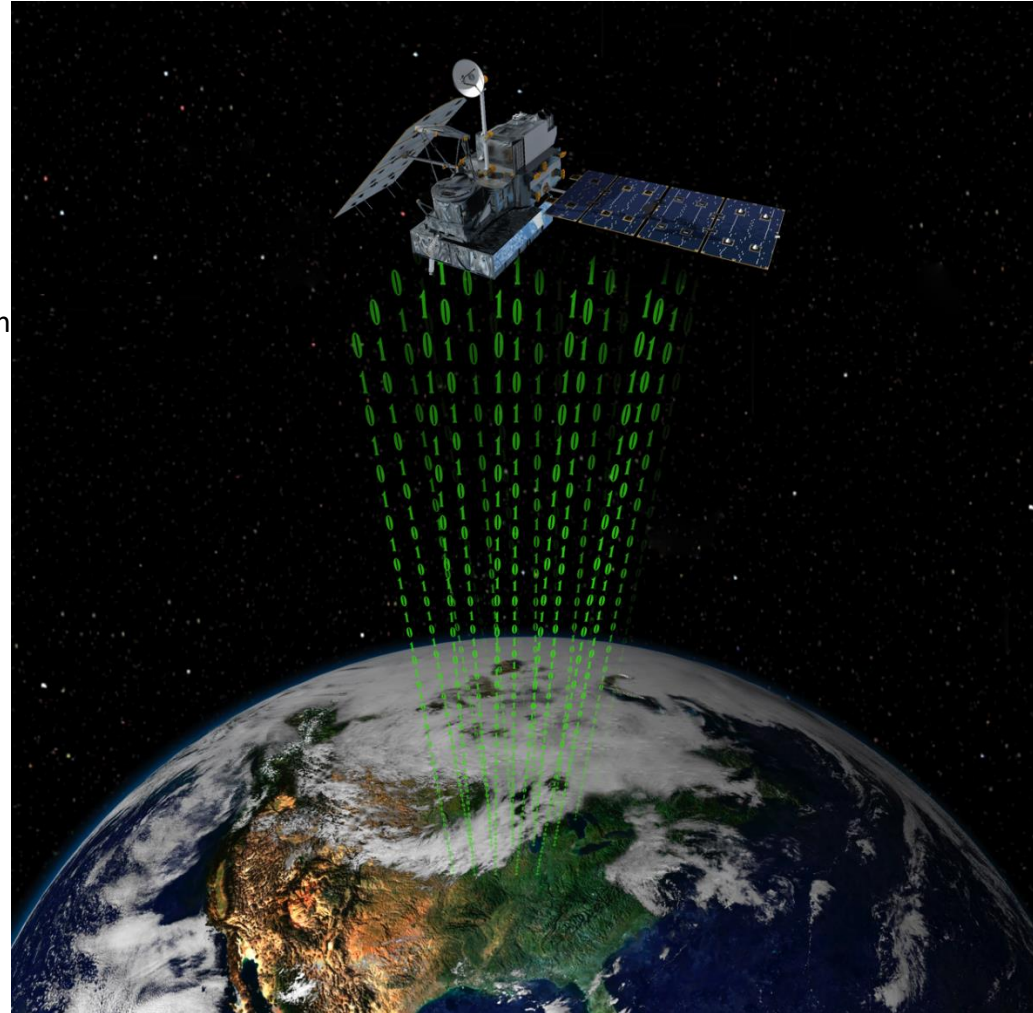
World Water Week // Stockholm, Sweden // August 27, 2017

Jake Longenecker, Robert Walter, and Tim Bechtel

ECHO

Primary Applications

1. Rapid & remote delineation of recharge areas;
2. Groundwater exploration;
3. Watershed protection & resource sustainability;
4. Water conflict avoidance (transboundary);
5. Improved water budgets and global water balance;
6. Aquifer characterization.



ECHO

Unique Applications

1. Hostile zones;
2. Protected & religious sites;
3. Remote and inaccessible areas.
4. Water-scarce regions.

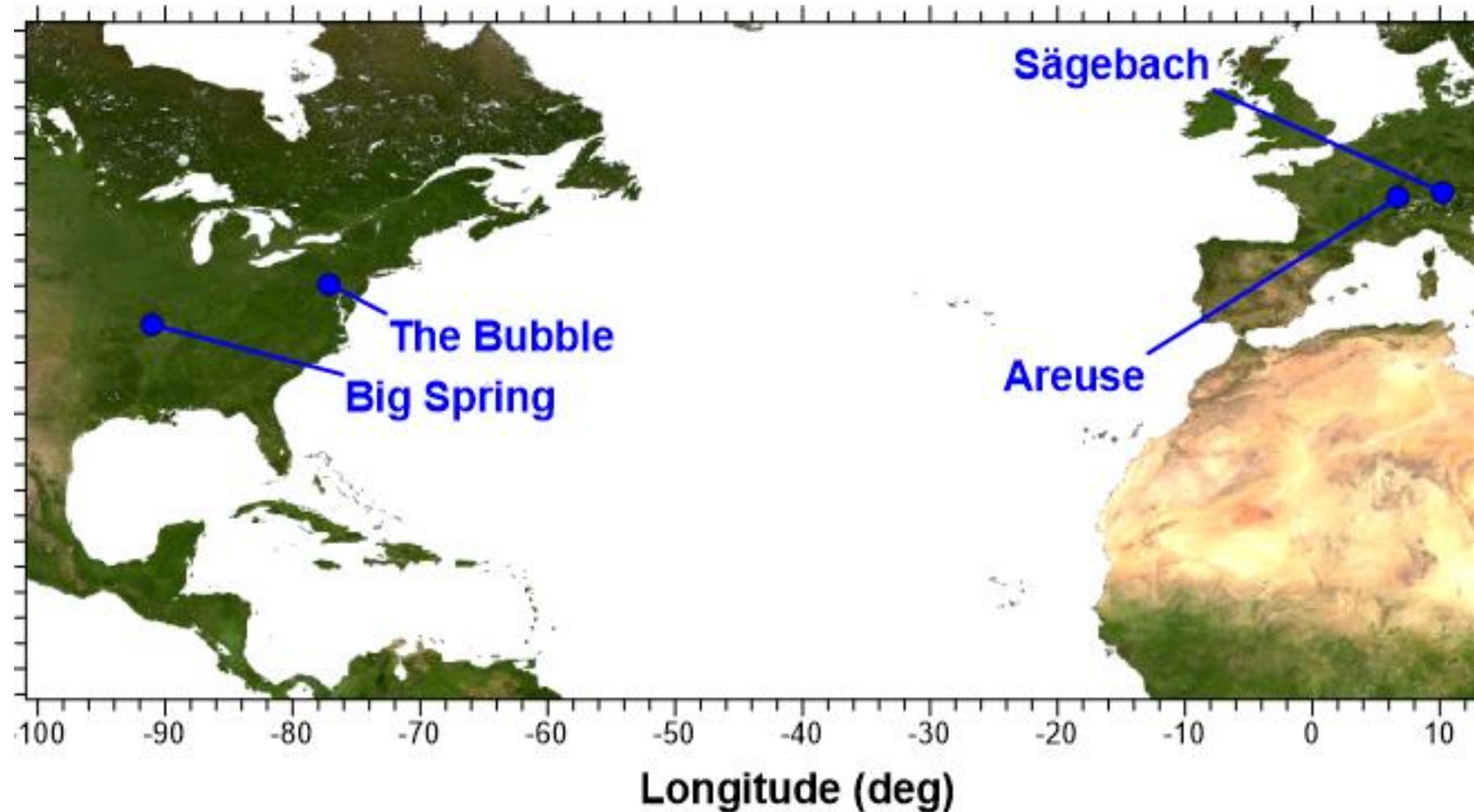


POWER7



Karlsruher Institut für Technologie

ECHO Program Validation and Testing Locations



See: Longenecker, J., T. Bechtel, Z. Chen, N. Goldscheider, T. Liesch, and R. Walter (2017), Correlating Global Precipitation Measurement satellite data with karst spring hydrographs for rapid catchment delineation, *Geophys. Res. Lett.*, 44, 4926–4932, doi:10.1002/2017GL073790

<http://onlinelibrary.wiley.com/doi/10.1002/2017GL073790/epdf>



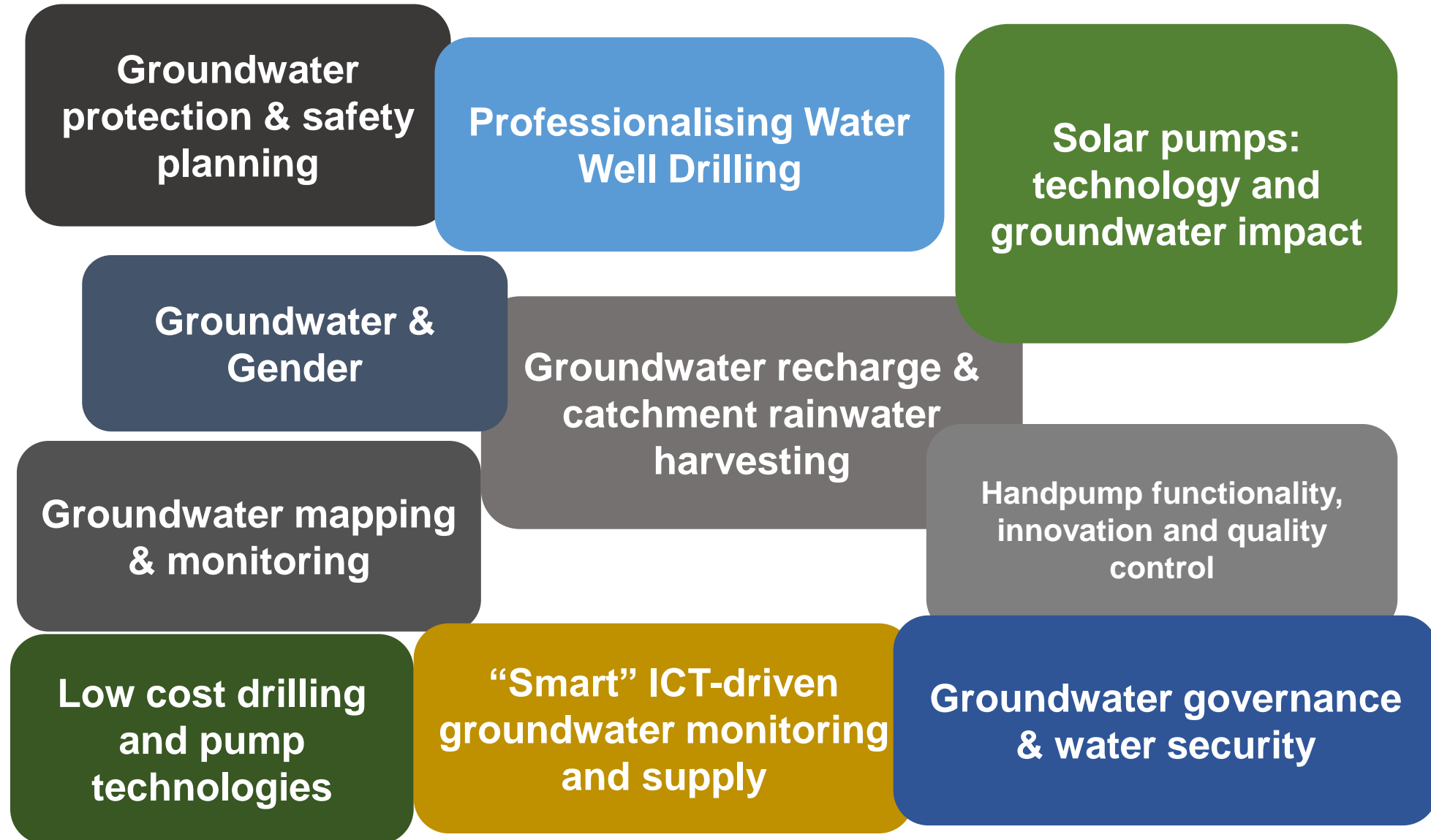
Sustainable Groundwater Development for Universal Rural Water Access: RWSN Strategy for 2018-2020

Sean Furey MSc. FRGS

Directeur Adjoint / Deputy Director, RWSN

skat Swiss Resource Centre and
Consultancies for Development

Priority Areas for 2018-2020?





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Thank you!!!