

IGS (International Geoscience Services) Ltd: Who we are and what we do

Antony Benham
Chief Operations Officer
IGS Ltd

abenham@igsint.com

www.igsint.com



Disclaimer

This presentation includes forward looking statements. All statements other than statements of historical fact included in this presentation regarding the business, financial condition, results of operations of the Company, or any Company and certain plans, objectives, assumptions, expectations or beliefs with respect to these items and statements regarding other future events or prospects, are forward looking statements. Should one or more of the risks or uncertainties associated with such forward looking statements materialise, or should assumptions underlying such forward looking statements prove incorrect, actual results may vary materially from those described herein. Neither the Company nor any Company assume any obligation to update or correct the information contained in this presentation, whether as a result of new information, future events or otherwise.

Structure

- Brief history of IGS
- What is important to exploration companies?
- Type of work IGS undertakes
- Where our funding comes from
- Current projects
- Previous projects
- Forward look
- Why IGS is successful
- IGS Xplore and prospectivity analysis
- Experience so far and future outlook

Brief history of IGS

- IGS is an independent commercial geoscience consultancy spun-out from the British Geological Survey (BGS)
- IGS registered in Dec 2010, started trading in June 2011
- Traded under name of BGS International (BGSI) until February 2015, then reverted to IGS
- Licensed name provided by NERC (Natural Environmental Research Council), the 'parent' body of BGS

What is important to exploration companies?



Investment and
Fiscal stability

Geodata and technical
availability

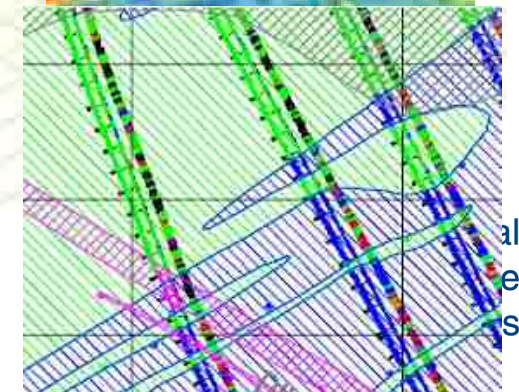
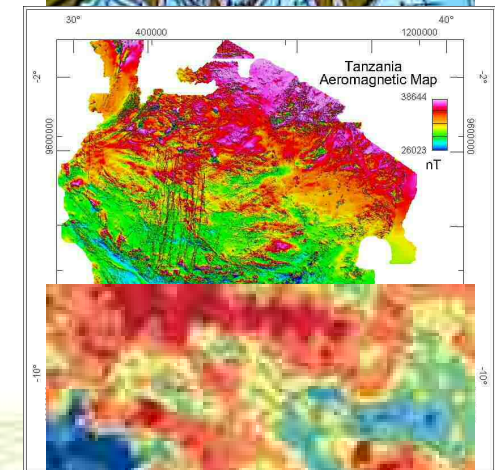
Legislative stability

What is important to exploration companies?

- Investment and Fiscal stability
 - Monies invested in a country and project are safe, easy to access with a clear taxation and royalty regime
- Legislative security
 - Security of exploration and mining license tenure is vital to encourage longer term investment in the country; mining cadastre system
- Geodata and technical availability
 - Modern, high-quality, digitally available geodata will have a significant if not dramatic effect on improving returns on exploration investment.
 - also puts the Government on an equal negotiating level (avoids “asymmetrical advantages”)

Geodata and its value

- Geodata includes:
 - Geological mapping as detailed as possible (at least 1:250,000 or better)
 - Geophysical surveying (Magnetics, Radiomagnetics, Gravity, Electromagnetics, etc)
 - Geochemical surveying (as many elements as possible in as much detail as possible)
 - Borehole data (if available)
 - **Ideally available in the right format!**



Types of work IGS undertakes (1)

- Geodata acquisition and interpretation
 - Geological, geophysical and geochemical surveying, usually at a regional scale but detailed work possible
- QA/QC of geodata acquisition/interpretation
 - As above, but checking quality of other people's work
- Capacity building
 - Training local staff typically within government institutions to build knowledge and capability

Types of work IGS undertakes (2)

- Institutional reform
 - Advising geological surveys and ministries of mines/minerals of structural level reform and departmental work programmes
- Mineral promotion
 - Including production of literature/CDs/websites to help promote a country's mineral resources
 - Work includes prospectivity analysis undertaken in Xplore

Where our funding comes from

- World Bank-funded loans through national governments e.g. Cameroon
- Overseas aid development agencies e.g. DFID
- National government-funded projects e.g. Sudan
- Other consultancies/companies SRK Exploration



Department
for International
Development



UKaid
from the British people



e.g.

exploration

 international
geoscience
services

Selection of past projects

Country	Client & scope of work	Dates	Comments
Botswana	Ministry of Minerals, Energy & Water – Institutional reform of geological survey	2011	Partnership with CGS
Sudan	Ministry of Minerals – Institutional reform	2013-2015	Project stopped prior to completion (Jan 2014) due to Ministerial changes
Tanzania (1)	World Bank – Geological mapping and geochemical exploration and upgrading laboratory facilities	2013-2015	Partnership with CGS, Uni. Dar-es-Salaam, Uni. Bergen, MINTEK
Tanzania (2)	World Bank – Supervision of high-resolution airborne survey	2012-2013	
Sierra Leone	National Minerals Agency (SRK Ex) – Geochemistry training course	March 2016	Partnership with SRK Exploration

Selection of current projects

Country	Client & scope of work	Dates	Comments
Cameroon	World Bank - Supervision of geological mapping and Geodata management for Survey	2015–2018	\$950k in partnership with CGS
Afghanistan	UK Aid/DFID training & capacity building – Mineral promotion, Environmental & Geotechnical labs	2014 - ends Sept 2017	IGS working as part of £10.5M Extractive Sector Support Programme (ESSP)
Lao PDR	World Bank - Mapping & mineral deposit evaluation	2016-2018	\$1.7M in partnership with GTK & PGW
DR Congo	World Bank - Ministry Mines – Geological mapping	2013-2018	€7.16M in partnership with BRGM & Geocoff
India	Ministry & Geological Survey of India. Supervision of high resolution airborne geophysical survey for 1 st phase	2017-2018	c.\$1.55M contract. India is implementing 813 000 km ² high-resolution airborne program. Further phases to be released

Forward look

Country	Client & scope of work	Dates	Comments
Mozambique	World Bank – Geological mapping	2018-2020?	Partnership with BRGM, PGW & Gondwana
India	Ministry & Geological Survey of India – Supervision of Phase 2 of airborne survey	2018-2020?	
Nigeria	World Bank – Geological mapping, airborne geophysics etc	2018-2021?	Partnerships currently being discussed
Central Asia	Central governments	2018?	Ongoing discussions with various partners

Why IGS is successful

- IGS has done comparatively well despite difficult economic conditions in the industry
- Understanding of the methodology of World Bank-funded projects
- Well networked in terms of clients, World Bank, senior officials in national Governments & associates world wide
- Ability to form winning partnerships
- Lower overhead and rates, less risk sensitive & adaptable
- Good personal reputations with decades of experience – Managing Director ex-CGS with >25 years experience, Technical Director ex-BGS with 40 years experience, senior staff all ex-geological survey plus industry experience

Challenges and mitigation measures

- Large World Bank projects are infrequent and take a long time to be awarded
 - Seeking to diversify income with alternative funders e.g. national governments
- Programmes often beset by delays
 - Good communication with World Bank to understand likelihood of length of delays
- Income stream erratic
 - Establishment of payment scheduling during contract negotiations
- Dealing with local Project Management Units (PMUs) presents own challenges
 - Important to have good relations with local PMU, but can revert to World Bank if required
- Local participation requirement for some projects
 - IGS can establish local companies/partnerships where required e.g. IDPEX in India
- Diminishing pool of experienced geologists
 - IGS has recruited early-stage career mapping geologists to build up experience and is likely to recruit geophysicist in future

Example of challenges



"A team of 16 geologists will oversee Implementation of the project while officials from the UK-based International Geoscience Services (IGS)...will act as independent Supervisors on behalf of the Mining ministry"

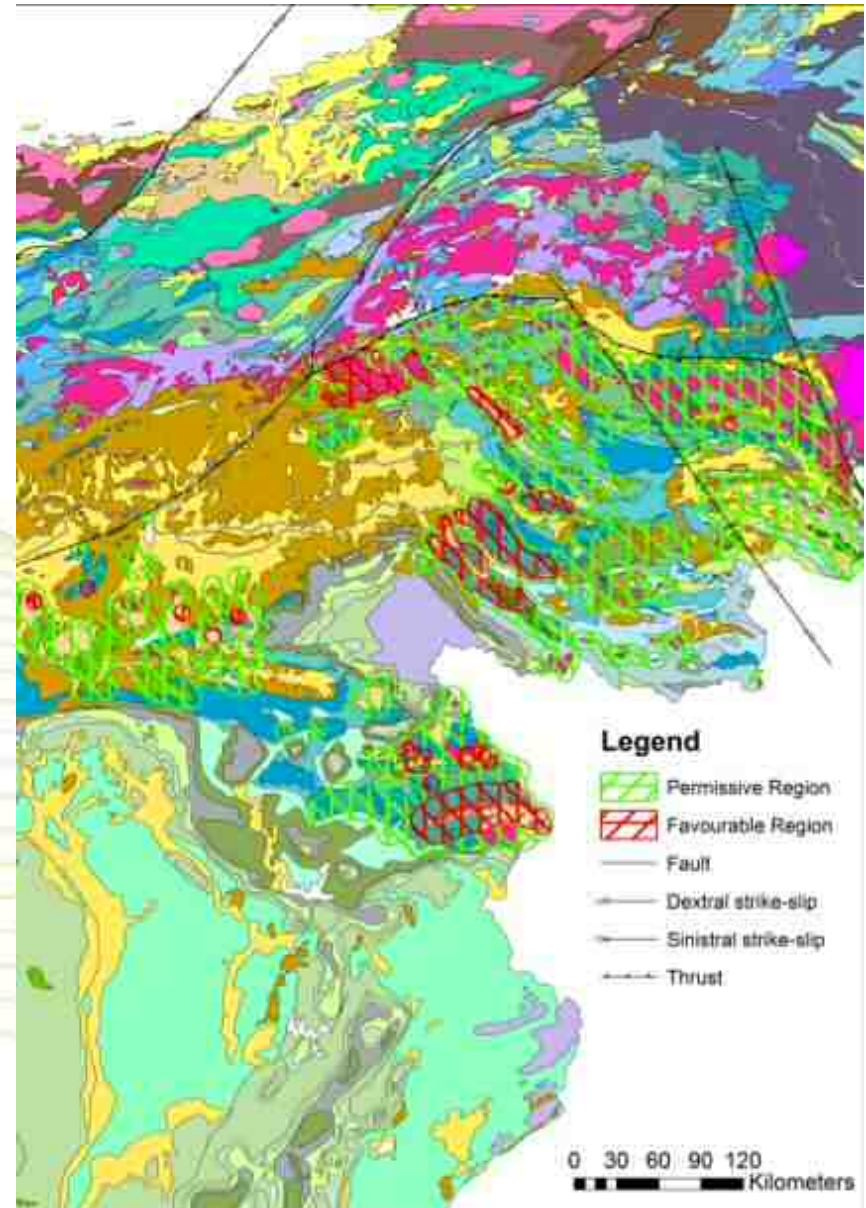
<http://www.businessdailyafrica.com/economy/Govt-inks-Sh7bn-China-loan-for-airborne-mineral-survey/3946234-4079136-4wdafnz/>



IGS Xplore and prospectivity analysis 1

What is Xplore?

- A tool developed by IGS to undertake mineral prospectivity analysis for many different mineral deposit model types



IGS Xplore and prospectivity analysis 2

What is different about Xplore?

- Other prospectivity analysis tools are GIS-based using mathematical weightings
- Xplore uses semantic technology for greater transparency of results
- Semantic technology used in many other professions
- Xplore results defensible and based on peer-reviewed models

Why develop IGS Xplore?

- Xplore started in 2014
- Intention to utilise data generated from WB projects to add value to this data
- Provide regular income to IGS
- Give IGS some IP to develop into future ventures

Experience so far and future outlook

- Critically acclaimed with recommendations from other consultancies and software providers
- Regional prospectivity maps produced for various parts of the world – ready to buy and download
- IGS now integrating Xplore as part of our core services
- Targeting national governments and ministries for prospectivity work

Thank you for your attention

Antony Benham
Chief Operations Officer
IGS (International Geoscience Services) Ltd
abenham@igsint.com

www.igsint.com

