

# IM4DC

## Action Research Report

### SUMMARY

**Researcher:**

David Pullar

**School/Centre:**

Geography, Planning and Environmental Management

**University/Institutions:**

The University of Queensland

**Key themes:**

Governance and regulation  
Community and environmental sustainability

**Key countries:**

Africa

**Completion:**

September 2015

**Research aims:**

This project aimed to assist geoscience agencies in developing countries, to build computer management applications with geographical information system (GIS) technology for streamlining mining approvals and exploration reporting. The project addressed spatial information aspects of the mining approval process for:

- mining permits, tenures and land rights
- harmonisation to ensure transparency and fairness
- approaches to rapidly move from paper-based systems to digital GIS
- incorporating assessment services on land uses and environmental issues
- modelling linkages between exploration reporting and regional geoscience information

**For further information on this action research:**

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*Research paper:* Pullar (in preparation). An implementation model for managing mining interests with permits using standards for land administration.

*Online tutorial:* Training workshop on temporal data management of mining rights with PostgreSQL.

[http://www.gpem.uq.edu.au/rsrc-web/files/GSDI13\\_Workshop\\_Permits.pdf](http://www.gpem.uq.edu.au/rsrc-web/files/GSDI13_Workshop_Permits.pdf)

## A Geoscience Information Model for Improving the Efficiency and Transparency of the Mining Approvals Process in North Africa

There is growing interest in developing countries in managing mineral interests in a more effective and transparent way. A key component to achieving this is having a standardised data model for mineral rights to follow that may be readily implemented with database technology. The ISO standard for the Land Administration Domain Model (LADM), which is designed for administering forms of land ownership and land use rights throughout the world, is well suited to managing mineral rights. However, further consideration needs to be given to the temporal processing of mineral rights which are more in line with the concept of a permitted activity.

This research developed the requirements for a mineral rights system and implemented this with open source geospatial software. The implementation, and associated links to a tutorial, demonstrate key functions, such as managing mineral permits, processing workflows for reporting and sharing data on the Internet as web maps. The pilot was used within training programs in Africa for managers responsible for mineral resources. The workshop materials are available for download from the website <http://www.gpem.uq.edu.au/cser-tools>. It is hoped that by explaining the principles and demonstrating how to implement a mineral rights system it will accelerate their adoption and lead to a transparent licensing system.