Role of Thailand's Department of Mineral Resources on Cross-Border Geological Survey and Mineral Investigation

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DMR. Establishment

- 1st of January, 1891 by King Chulalongkorn the Great
- Firstly involved mainly in tin mining
- Later cover all geologic functions
- Last reorganized on 3rd October 2002
We provide professional knowledge-based geosciences services to the community through geoscientific information and advice towards wisely use of geological resources, public awareness in understanding the earth and its environment, minimum loss of life from natural disasters and enhancement of our people quality of life.
DMR. Activities

- Geological exploration and research
- Mineral resources management
- Paleontological exploration and research
- Geotourism promotion
- Geophysical and geotechnical surveys
- Geological resources policy and planning
- International geological cooperation
The First Geological map of Thailand scale 1:2,500,000 (1939)
Brown et al. (1951) “Geologic Reconnaissance of the Mineral Deposits of Thailand”
Thai-German Cooperation mapping Project during 1975 to 1982,

- 7 quadrangles; Nan, Chiang Rai, Phayao, Chiang Dao, Chiang Mai, Li and Thong Pha Phum

Thai geologist since 1970 to 1980 - 39 quadrangles

+ INDIAN 1975
Geological Map of Northern Thailand 1:250,000
Compiled by F. Baum and L. Hahn

FIRST DETAIL GEOLOGIC MAP
Geological map of Thailand
scale 1:2,500,000
1984 (2527)
1:2,500,000 MAP (1994)
Metallic Minerals

Potential Area for Minerals, Dimension Stones, Industrial Rocks, Coal, and Petroleum

- Antimony
- Asbestos, Chromite, Magnesite, Nickel, Talc
- Barite, Fluorite
- Copper, Iron
- Feldspar, Quartz
- Tin, Tungsten, and Heavy Minerals: Limonite, Leucoxene, Monazite, Columbite-Tantalite, Rutile, Xenotime, and Zircon
- Lead, Zinc
- Manganese
- Mineral areas declared under mineral acts
Non Metallic Minerals

Potential area for minerals, dimension stones, industrial rocks, coal, and petroleum:

- Ball Clay, Bentonite, Dicklite, Kaolin, Illite, Pyrophyllite
- Potash Salt: Camallite
- Gems
- Gypsum
- Perlite
- Rock Salt Basin
- Salt Dome
- Silica Sand
<table>
<thead>
<tr>
<th>Year</th>
<th>Product +Import</th>
<th>Export</th>
<th>Use</th>
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<td>2010</td>
<td>1,803.7</td>
<td>247.1</td>
<td>1,399.1</td>
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<td>2011</td>
<td>1,701.2</td>
<td>222.1</td>
<td>1,446.9</td>
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<td>2012</td>
<td>1,066</td>
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Unit: thousand barrels of oil equivalents per day

Source: www.dmf.go.th
Current Activities on International cooperation

Bi-lateral international cooperation:

Neighboring countries
1. Malaysia
2. Lao People's Democratic Republic
3. Republic of the Union of Myanmar
4. Socialist Republic of Vietnam

Other countries
1. Japan
2. People's Republic of China
3. Australia
4. Korea
5. The United Republic of Tanzania
Current Activities on International cooperation

Multilateral international cooperation

1. Coordinating Committee for Geoscience Programmes in East and Southeast Asia: CCOP
3. International Cartographic Conference: ICC
4. UNECE Expert Group Resources Classification
The On-going collaboration areas between Thailand and Neighbouring Countries

1. The geological correlation between Thailand and Malaysia (2003-present)

2. The stratigraphy correlation between Thailand and Laos (TICA 2012-2016)


THE MALAYSIA - THAILAND BORDER JOINT GEOLOGICAL SURVEY PROJECT (MT-JGS)

Geo-Scientific Cooperation between
Department of Mineral Resources (DMR), Thailand
Minerals and Geoscience Department Malaysia (JMG)

Under the Joint Malaysia-Thailand commission
TRANSECT AREA 6

No. Transect areas (from W to E)
6 Langkawi-Tarutao
4 Bukit Batu Puteh-Satun
1 Gubir-Sadao
3 Pengkalan Hulu-Betong
5 Belum-Hala
2 Batu Melintang-Sungai Kolok
THE MALAYSIA - THAILAND BORDER JOINT GEOLOGICAL SURVEY PROJECT (MT-JGS)

Geo-Scientific Cooperation between Department of Mineral Resources (DMR), Thailand Minerals and Geoscience Department Malaysia (JMG)

- Geological Map of the transect area no.1-6 with GIS (year 2003-2013)
- Report of Geology and Mineral Resources no 1-6
- Technical report on the stratigraphic correlation of rock unit
- Technical report on the litho and biostratigraphic of radiolaria chert
- Technical report on geoconservation and geotourism of the Langkawi- Tarutao Islands
Output: Geology

THE MALAYSIA - THAILAND BORDER JOINT GEOLOGICAL SURVEY PROJECT (MT-JGS) year 2010-2011

Belum – Hala Transect: granite
Output: Database

THE MALAYSIA - THAILAND BORDER JOINT GEOLOGICAL SURVEY PROJECT (MT-JGS) year 2001-2013

At least 15 Guidebooks and 100 outcrop stations of rock unit, fossils, minerals, geosites, hazards were done.
The stratigraphy correlation between Thailand and Laos (2012-2016)

Cooperative study areas
“on the job training”

1. 2012: Mukdahan-Savannakhet-Khammouan areas
2. 2013-2014: Nongkhai-Vientiane- Bori Khamxay areas
3. 2015-2016: Loei-Vangviang areas
The geology and mineral potential maps of Thai-Lao Trans-boundary area (2012)
Thai-Lao Cooperation Project for Sustainable Development of Geological Resources

Project Outputs in year 2012-2016

1. Workshops on Geology and Mineral Resources in Thailand
2. Geological map and geological resources data and report
3. Development of geological Laboratory and Museum in Lao PDR
4. GIS database/ rock unit correlation/researches
5. Geotourism/Geotrail/Mineral Assessment
6. Technical Conference on Geology and Mineral Resources

Outputs
Cross-Border Collaboration on Geological Information of Cambodia-Laos-Myanmar-Thailand-Vietnam

Background information

- Geological Map of Mainland SE-Asia
- One Geology
- CCOP-ASEAN Harmonized Geology Project
examples of discontinuous geological boundaries
CLMTV Cross-border Activity Plan

Duration: 2015-2019 (5 years)

Scope:  +Kickoff Meeting

+ Working Group Activity
  - Workshop
  - Training Course
  - Remote Sensing Data Interpretation
  - Field Investigations (Bi-lateral / Multi-lateral)
  - Sample Analysis
  - Sample Exchange
  - Geological Information System

+ Annual Committee Meeting
+ International Symposium
THANKS YOU