



**COORDINATING COMMITTEE FOR GEOSCIENCE PROGRAMMES  
IN EAST AND SOUTHEAST ASIA (CCOP)**

---

**48<sup>th</sup> CCOP Annual Session**  
4-8 November 2012  
Langawi, Malaysia

# **Cooperating Country Report of FINLAND**

**Submitted by**

**ESKO KORKIAKOSKI (Lao PDR)**  
**PHILIPP SCHMIDT-THOMÉ (Vietnam)**  
**JUKKA LAUKKANEN (Mongolia)**

**Geological Survey of Finland**

**(For Agenda Item 4)**



**COORDINATING COMMITTEE FOR GEOSCIENCE PROGRAMMES  
IN EAST AND SOUTHEAST ASIA (CCOP)**

CCOP Building, 75/10 Rama VI Road, Phayathai, Ratchathewi, Bangkok 10400, Thailand

Tel: +66 (0) 2644 5468, Fax: +66 (0) 2644 5429, E-mail: ccopts@ccop.or.th, Website: www.ccop.or.th

## ANNUAL COOPERATING COUNTRY REPORT

<b>Country/Organization:</b>	<b>FINLAND</b>	<b>Period:</b>	<b>1 July 2010 – 30 June 2012</b>
------------------------------	----------------	----------------	-----------------------------------

### 1. Summary

During the reporting period the Geological Survey of Finland undertook the following activities in the CCOP Region:

1. The Lao-Finnish Minerals Sector Institutional project (completed Dec 2011)
2. Mining Cadastre System project in Lao PDR (on going)
3. Climate change adaptation project in Vietnam (VIETADAPT) (on going)
4. Mineral processing in Mongolia (on going)
5. A Memorandum of Understanding with the China Geological Survey
6. Visiting Fellowship at the South East Asia Disaster Prevention Institute (SEADPRI)

### 2. Review of current technical activities and geoscience programmes in the CCOP Region (Multilateral or Bilateral)

#### 2.1 Lao-Finnish Minerals Sector Institutional Project “LAOFIMIN”

The overall objective of the LAOFIMIN project was to support the minerals sector development as a fundamental driver of the Lao’s economy. This was done by strengthening the capacities of Mines and Geology Departments in the governance of national mineral resources in a sustainable and economically viable manner and using geoinformation as a decision making tool and for the promotion of minerals investments.

The project was implemented by GTK with the Department of Mines (DOM) and the Department Geology (DGEO) of the Ministry of Energy and Mines as local partners. The duration of the project was 26 months (Sep. 2009- Nov. 2011) and included 25 working months by GTK experts. The total budget was of ca. 500 000 € It was financed by the Ministry of Foreign Affairs of Finland.

The project was successfully completed and consisted of four components:

#### 1) Geoinformation and data management

- Available spatial geodata sets were compiled into a geographically uniform and easy-to-use Lao GeoDataBase
- Available geological maps were unified into ArcGIS format (partly digitized)
- Selected staff members have capacities to use ArcGIS programme efficiently

## 2) **Training in GIS-aided geological mapping**

- Field training, geological mapping using GIS, satellite image interpretation

## 3) **Mine Closure**

- Two guidebooks were prepared: (1) Handbook for Mine Closure and (2) the Principles of Mine Environmental and Social Monitoring

## 4) **Promotion of minerals investment**

- Instructions of administrative procedures related to minerals sector development and licenses were compiled into leaflets and updated MEM websites
- A promotional leaflet, “Mining in Laos PDR”, was prepared and published
- The Lao PDR was incorporated into the international OneGeology portal, which is a worldwide compilation (currently 117 countries) of 1:1M scale geological maps providing countrywide geological maps through the internet to the public (<http://portal.onegeology.org> or <http://www.onegeology.org>). The GTK server provides this service for Lao PDR

## **2.2 The Mining Cadastre System project in Lao PDR**

The Mining Cadastre System project in Lao PDR is a natural continuation of the LAOFIMIN project. It started in October 2011 and will continue for two years. Objectives of the project are to strengthen the cadastral organization and build a new cadastral system for the management of map data and to assess the current cadastre system in order to propose a uniform grid system to be used in Lao PDR. The implemented Lao Mining Cadastre System (MCS) is based on the Block system using a 200 m x 200 m grid (Cadastral Units -CUs), and is used to reserve areas for new concessions. The use of spatially a fixed CU grid prevents overlapping license areas. The project takes into consideration the revised Mining Laws, and the licensing practices in order to improve the coding system by assigning the unique identifier for each individual license or application. As a result, the new spatial database (MCS), based on the new coding system, has been prepared.

During the project the existing prospecting, exploration and mining licenses have been transferred into uniform coordinate units and combined with the Lao GeoDataBase (Lao GDB) prepared by the LAOFIMIN project. They both are using the international ITRF96 coordinate system due to its compatibility with the WGS84 coordinate system and GPS. The spatial accuracy of the licenses on the cadastral **block system** based on fixed CUs is verified.

The contract for the project between the Lao Ministry of Energy and Mines and GTK was signed on 15th of June, 2011. GTK, being active in Lao PDR for other Finnish funded projects, was selected as a consultant to the Mining Cadastre project using so called ”Single Source Selection”. It is funded by the World Bank and the value of the contract is about USD 200 000, excluding the hardware and software purchased under a separate WB budget.

The contract includes 7 working months for the GTK experts and includes collaboration with the Department of Mines (DOM) from the Ministry of Energy and Mines (MEM) and the Department of Geology and Minerals (DGM) from the new Ministry of Natural Resources and Environment (MONRE). As a result of the revised administrative restructuring the granting of mineral rights in the Lao PDR was split last year into two parts. The prospecting, exploration and pre-feasibility licenses are granted by DGM while permit for the detailed feasibility study and the mining license are processed by DOM.

## 2.3 VIETADAPT project

VIETADAPT - Development and implementation of climate change adaptation measures in coastal areas of Vietnam

Project duration: October 2011- December 2013

Financial frame: 500 000€

Financed by: Finish Ministry of Foreign Affairs (ICI Funds)

### Overall VIETADAPT objective

- To contribute to the Vietnamese Climate Change Adaptation Strategy by developing adaptation measures in local planning procedures.

Background:

- The coastal areas of Vietnam are developing strongly and growing in population
- Sea level rise is expected to lead to salinisation of groundwater aquifers
- Other climate change impacts might severely affect humans and ecosystems in the coastal areas.

### Activities

- Communication and dissemination of climate change adaptation in science-stakeholder cooperation
- Applying model predictions for coastal and off-shore planning
- Applying models and predictions to ensure drinking water supply
- Developing climate change and socio-economic scenarios for local climate change adaptation
- It is intended to hold workshops in combination with the CCOP annual meeting on the building of scenario workshops for climate change adaptation

### Partners:

- The Geological Survey of Finland (GTK)
- The Vietnam Institute of Meteorology, Hydrology and Environment (IMHEN)
- The Vietnamese Centre for Water Resources Planning and Investigation (CWRPI)

Subcontractor:

- The Finnish Environment Institute (SYKE)
- Associated partner (for regional dissemination and overall support): South East Asia Disaster Prevention Institute (SEADPRI)

A Vietnamese delegation visited the final BaltCICA conference in January 2012 in Helsinki, Finland. The background of the project is largely based on achievements of the BaltCICA and by participating in the conference the Vietnamese partners had the chance to hold discussions directly with key scientists and decision makers. In addition, several workshops and training sessions were held.

In April 2012 a first scenario workshops to identify climate change impacts and related vulnerabilities were held in Thanh Hoa and Vung Tau in Vietnam. The results of these workshops will be processed to identify potential adaptation options.

In September 2012 four young Vietnamese scientists participated in several training courses

on groundwater modeling, and use of ArcGIS at the Geological Survey of Finland in Espoo.

Further activities in 2012 comprise a workshop adjacent to the CCOP Annual Session in Langkawi, Malaysia.

## **2.4 Improvement of Mineral Processing Services of Central Geological Laboratory, Mongolia ” CHINGGISS PROCESS”**

### **Background**

- An overall need was recognised: to produce research information for the mineral sector of Mongolia - to be utilised in technical-economical evaluation of ore resources
- A need for better service capacity at the Central Geological laboratory (CGL) was identified particularly in the area of Mineral processing
- The project idea was proposed by CGL to the Ministry for Foreign Affairs of Finland

### **Purpose**

- The main purpose was to improve the service capacity of the Mineral Processing laboratory of CGL
- Training of personnel
- Purchase of new equipment
- Overall, the purpose was to enhance the general service capacity of CGL by training in issues like governance, administration, information management, quality systems and reporting
- The project would also enhance cooperation and networking of CGL, and make the services of CGL better known
- Project scope: To develop methods and technologies for extracting valuable metals and minerals from their ores

### **Project setup**

- So-called ICI-project (Institutional Cooperation Instrument) between the Central Geological Laboratory (CGL) of Mongolia and the Geological Survey of Finland (GTK)
- Project is financed by the Ministry for Foreign Affairs of Finland
- Project duration is +1.5 years: Dec 2009 – Sept 2011
- Budget 500 000 EURO
- Training periods in Finland and in Mongolia

## **2.5 Development of research services for REE-ores at Central Geological Laboratory (CGL), Mongolia "CHINGISS PROCESS II"**

### **Background**

- The CHINGISS PROCESS II project is a clear continuation for the CHINGISS PROCESS project described above.
- During the first collaborative project, a need for further development of research services was presented by CGL, and also identified by GTK's experts, focusing on the characterization and processing of REE ores. The high-tech elements, the Rare Earth Elements among them, are expected to be increasingly important in the future. Mongolia has a high potential for deposits of strategic minerals, REEs being a good example.
- The CHINGISS PROCESS II project would strengthen the knowledge and capabilities of both institutes (CGL and GTK) in the areas of REE's geology, mineralogy and processing.

### **Purpose**

- The main purpose was to improve the service capacity of the Mineral Processing laboratory of CGL
- Training of personnel
- Purchase of new equipment
- Another purpose was to enhance the general service capacity of CGL by training in issues like governance, administration, information management and reporting
- The project would also enhance cooperation and networking of CGL, and make the CGL services better known
- Mineral processing : methods and technologies for extracting REE-minerals

### **Project setup**

- So-called ICI-project (Institutional Cooperation Instrument) between the Central Geological Laboratory (CGL) of Mongolia and the Geological Survey of Finland (GTK)
- Project is financed by the Ministry for Foreign Affairs of Finland
- Project duration is 2.5 years: July 2012 – December 2014
- Budget 500 000 EUROS
- Training periods in Finland and in Mongolia

### **Implementation**

- Two field trips to REE deposits in Mongolia has just been completed by Mongolian and Finnish geologists
- Mineral processing studies have been started
- The purchase of equipment has been started

### **3. Proposed future activities and assistance to CCOP in support of current and future activities**

Hold workshops on scenario building for climate change adaptation as a joint science-stakeholder approach. The workshops are to be held in close connection with the CCOP annual meetings. To this end special funds have been reserved under the VIETADAPT project