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

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Cooperating Country Report of BGR/Germany

Submitted by

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COORDINATING COMMITTEE FOR GEOSCIENCE PROGRAMMES
IN EAST AND SOUTHEAST ASIA (CCOP)
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ANNUAL COOPERATING COUNTRY REPORT

Country/Organization:	Germany/BGR	Period:	1 July 2016 – 30 June 2017

1. Summary

During 2016 and 2017, the Federal Institute for Geosciences and Natural Resources (BGR) has continued its activities in SE Asia with its local partners.

In the Scientific-Technical Cooperation sector, several projects are ongoing:
- China: BGR continues the cooperation in the areas of Geological Sciences and Techniques with the China Geological Survey (CGS), Ministry of Land and Resources (MLR), PRC, in accordance with the cooperation agreement signed in 1979;
- Indonesia: Best Practice in the Reclamation of Onshore Ex-Tin Mining in Indonesia.

The Technical Cooperation sector comprises five ongoing projects funded by the German Federal Ministry for Economic Cooperation and Development (BMZ):
- In CCOP Member Countries (reg.): "Training Course on Risk-Sensitive Spatial Planning";
- In Indonesia: the project on: "Good Local Governance: Component Mitigation of Georisks";
- In Laos PDR: the project on "Support for Sustainable Development of the Mining Sector";
- In Myanmar: the project on "Sustainable Development of the Mining Sector";
- In Vietnam: the project on "Improvement of Groundwater Protection".

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

CCOP Member Countries (regional)

Disaster Risk Management:
Commissioned and funded by the German Federal Ministry for Economic Cooperation and Development (BMZ) the Federal Institute for Geosciences and Natural Resources (BGR) has performed the first **training course on risk-sensitive spatial planning** during February 20 to March 2, 2017 in Bangkok (Thailand). There were fifteen participants from seven CCOP MCs (Indonesia, Papua New Guinea, Cambodia, Laos, Myanmar, Vietnam and Thailand) represent institutions mandated to support or even to execute profound national risk assessment procedures to natural hazards.

An excursion to the city of Ayutthaya supplemented the nine days' classroom lessons and exercises. In 2011, this UNESCO's world heritage site was severely flooded and the historical center partly damaged. In this workshop, the participants became acquainted with structural flood risk mitigation measures successfully managed by the local government.

In addition to the first one, two other training courses are scheduled to be held in Manila, Quezon City (the Philippines in 09/2017) and finally in Vietnam (03/2018). All courses are organized and practically operated in collaboration with the T/S of CCOP.

The BGR training intervention intends to sustain CCOP member countries in the East and Southeast Asia region in their efforts to implement the Sendai Framework for Disaster Risk Reduction and to achieve the respective country-specific objectives by providing reliable risk exposure information. In this manner, especially the expertise and the performance capabilities of governmental institutions should be reinforced.

People's Republic of China

Sino-German Cooperation in Geosciences between the Federal Ministry for Economic Affairs and Energy (implemented by BGR) and the Ministry of Land and Resources (MLR)

Geo-Information:

Scientific cooperation with the Ministry of Land and Resources (MLR) of the People's Republic of China is realised with departments of the Ministry itself, the China Geological Survey and subordinate institutions. Envisaged activities are in the areas of mineral and energy resources regarding the exchange of mineral resources data and elaboration of a joint report on the global supply and demand of graphite and germanium.

A scientific cooperation in the field of Geo-Information has been implemented with the China Geological Survey (CGS). An exchange workshop in Hannover, Germany, was held in December 2016 with a focus on the realization of big data projects and setting-up projects in the field of the semantic web. A follow up exchange workshop scheduled in autumn this year in China is under consideration.

Engineering Geological Hazard Assessment:
Landslide Hazard & Risk Assessment/Management in Lanzhou, Gansu Province (LHARA)

Since January 2016, the China Geological Survey (CGS) with its affiliated China Institute for Geo-Environmental Monitoring (CIGEM) and the Federal Institute for Geosciences and Natural Resources (BGR) have been jointly implementing a two-year scientific-technical cooperation project called "Landslide Hazard & Risk Assessment/Management in Lanzhou, Gansu Province (LHARA)". Lanzhou city, the capital of the Gansu Province and the surroundings region are in a permanent process of rapid social and economic development and transformation. However, limited land resources require a steadily increasing human intervention making the area highly susceptible for sliding processes of loess sediments associated with growing economic and social risk potentials.

The on-going project aims at improving the understanding of the timely evolution of changing landslide susceptibility particularly of loess sediments between 2002 and 2016 by applying well-established statistical and physically based approaches. Based on the findings, this approach should make it possible to practically adapt the future land use planning and manage-

ment as an integral part of Disaster Risk Reduction measures. Therefore, the responsible government authorities of the city of Lanzhou and Gansu province have been an integral partner for target-oriented discussions since the beginning of the collaboration.

Taking into account the scientific findings of the landslide hazard assessment that have been achieved so far both partners agreed upon to initiate a second LHARA project phase running from year 2018 – 2021. This phase will mainly focus on the vulnerability and risk exposure assessment.

Geo-Environment:
Investigations for the final disposal of radioactive waste

Within the frame of the Memorandum of Understanding between BGR and BRIUG (Beijing Research Institute of Uranium Geology) signed in 2015, the work is continually focused on the methodological study of site characterisations, especially the Chinese Beishan site and the study of geotechnical barrier system.

As a highlight during the report period, the third Chinese-German workshop on Radioactive Waste Disposal is organised jointly by BRIUG, BGR and PTKA (German Project Management Agency) in May 15-19, 2017 in Jiayuguan, China. There were about 20 German experts from all leading organisations involved in the repository research program and 100 Chinese colleagues have participated the workshop and visited the first underground facility located in the Chinese Beishan site.

Indonesia

Geo-Environment:
Good Local Governance: Component Mitigation of Georisks

The Technical Cooperation project "Mitigation of Georisks" between the Indonesian Geological Agency of Indonesia (GAI) and BGR started in 2002. The project was implemented as a component of a programme on civil society and inter-municipal co-operation for strengthening good local governance. The Mitigation of Georisks Project ended in June 2017. Its objective was to strengthen the service provision in the sector of natural disaster risk management through consultancy in the fields of landslide hazard assessment, seismic microzonation, risk assessment and georisk-sensitive spatial planning. After many fruitful years of cooperation with GAI and numerous local partners, the results of that work are now being implemented in the training curricula of the Human Resources and Training Institution (BADIKLAT) of the Ministry for Energy and Mineral Resources.

Geothermal Energy:
Supporting the utilization of geothermal energy in remote regions of Indonesia

A Technical Cooperation project supporting the utilization of geothermal energy in remote regions of Indonesia will be funded by the Federal Ministry for Economic Cooperation and Development and is envisaged to start in 2018. The project supports the long-term goal of the Indonesian government to increase the electrification rate in remote regions of Indonesia and to simultaneously reduce greenhouse gas emissions by promoting the utilization of Indone-

sia's geothermal potential. The projects objective is to promote geothermal prospection for geothermal sites with small-scale geothermal energy potential (<10 MW). State actors, such as the Ministry for Energy and Mineral Resources as well as the subordinate Geological Agency shall be supported in providing reliable data on the geothermal resources that helps to minimize the financial risks for investors during exploration. Improved knowledge regarding the geothermal energy potential of the country can be used e.g. by state-owned PLN to increase the electrification rate in remote regions of Indonesia.

Geo-Resources:
Best Practice in the Reclamation of Onshore Ex-Tin Mining in Indonesia

Indonesia is one of the largest tin producers and exporters in the world, while Germany is one of the largest consumers of tin. Most of Indonesian tin production originates from the islands of Bangka and Belitung with a wide range of social, environmental and economic impacts. While mining generates important economic benefits in the region, negative impacts need to be managed as well. Tailings material generated from tin mining and processing activities cover 50-70% of ex-mined land on Bangka.

To initiate cooperation exchange on the issue, BGR – through its Mining and Sustainability Unit - organized a workshop together with representatives from the Ministry of Energy and Mineral Resources (ESDM), the Province of Bangka and Belitung and different experts from Indonesia in late 2015. The intention was to exchange knowledge about reclamation, both technical and social. BGR and local Indonesian partners finalized the understanding on engaging in best practice reclamation in an MOU in early 2017 regarding two major areas: first, a pilot actual land rehabilitation measure and second, the compilation of a best practice manual. Local expertise is included through experts from Universities of Bogor and Bandung. Consequently, a suitable site for reclamation was selected and is now investigated socially and technically by different Indonesian stakeholders as of August 2017. By the end of 2017, the start of the actual land rehabilitation is to be expected, followed by continuous monitoring and a first conceptualized draft of the best practice manual.

Laos PDR

Geo-Resources:
Support for a Sustainable Development of the Mining Sector

Started in June 2011 the Lao-German long-term project "Support for a Sustainable Development of the Mining Sector" supports the Department of Mines (DOM) and the Departments of Energy and Mines (PDEMs) in selected provinces. During the first phase of three years, the project enabled the DOM and PDEMs to fulfil their tasks in the fields of granting licenses, mining project assessments and mines inspection (mine safety, labour/health and environmental protection). The project contributes technical consultancy, trainings, equipment and international long– and short-term consultants. During the second project phase (two years) the project has been intensifying the improvement of the qualification of mine inspectors at central and provincial levels, and applying the methodological and technical approaches developed in the first phase. The ongoing final project phase lasts until 09/2019 and focuses on a roll out of the elaborated methodological and technical approaches of the mining inspectorate to all provinces of mining relevance. The project carries on to institutionally strengthening the DOM as a leading authority implementing the national mining strategy. The policy dialogue

and inter-institutional cooperation will be promoted in order to improve the political and institutional conditions for the long-term implementation of the mining supervision.

Myanmar

Geo-Resources:
Sustainable Development of the Mining Sector

Myanmar`s diverse natural resources represent a huge economical potential and, with the opening of the nation's economy, are increasingly attracting both domestic and foreign investors. Compared to international standards the Myanmar mining sector is currently characterized by a majority of small and medium mining operations with only very few large scale mines. Mining operations are not adequately controlled with regard to occupational health and safety and environmental aspects.

The BGR-DOM Project "Sustainable Development of the Mining Sector in Myanmar" is a module integrated in the technical cooperation programme "Sustainable Economic Development of Myanmar" commissioned by the German Federal Ministry for Economic Cooperation and Development (BMZ). Project partner is the Department of Mines (DOM), which is responsible for the national guidance and supervision of the mining sector in Myanmar. For the project, BGR has seconded two long-term technical advisors to the Ministry of Natural Resources and Environmental Conservation (MONREC) in Naypyitaw since March 2016. The project's aim is to improve the quality of mining supervision with respect to safety, social and environmental aspects. The implementation includes drafting of supervision procedures and guidelines, the strengthening of staff capacity involved in mining, and improved collaboration of relevant stakeholders in the mining sector. In 2016 and 2017, the project has provided several multi-day training courses on Myanmar mining supervision-relevant topics such as ground control and slope stability, mine ventilation, small-scale gold mining practice and waste and tailings management. Inspection equipment is being procured and trained with according to the needs of the project partner. As of June 2017, the project's current first phase is projected to run until March 2019, with the partners planning to discuss further extensions and new objectives in a joint evaluation mission towards the end of 2017/beginning of 2018.

Singapore

Geo-Resources:
Exploration License with the International Seabed Authority – Expert Training

A trainee from Singapore joined cruise INDEX 2016 in January-February 2016. The training program by the International Seabed Authority (ISA) is compulsory for all license holders and involves 10 trainees from developing countries in a five-year term. Training includes the pre-cruise preparation, the participation in the cruise itself and a post-cruise meeting (4-6 weeks) at the institute of the license holder. The nomination follows the guidelines by the ISA and is in agreement with the license holder. The training program includes all scientific and organisational work on the research vessel as well as in the labs of BGR. The trainee stayed at BGR in May 2017 for a duration of six weeks and visited different labs and institutions in.

Vietnam

Geo-Environment:
Improvement of Groundwater Protection (Groundwater Management in Coastal Areas)

The aim of the project carried out by the Ministry of Natural Resources and Environment (MONRE) and its subordinate National Centre for Water Resources Planning and Investigation, (NAWAPI) in cooperation with the Federal Institute for Geosciences and Natural Resources (BGR) is the improvement of groundwater protection in Vietnam. Cooperation has commenced in 2009. Based on enhanced investigation, modelling, planning and management of groundwater resources exercised first in pilot areas, integrated water resources management should improve the quantity and quality of the groundwater as a main source for drinking water. Great importance is accorded to the establishment of groundwater protection areas and the embedding of protection aspects in regional planning. The current engagement, which will last until 12/2019, shifted its focus on Groundwater Management in Coastal Areas, with regard to the approach of an Integrated Coastal Zone Management. One of the key challenges addressed is the issue of salt-water intrusions to the aquifer system due to overexploitation of the resources.

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

Upcoming scheduled activities are:

CCOP/BGR Training Course on Risk-Sensitive Spatial Planning:
- 09/2017 in Manila, Quezon City, the Philippines
- 03/2018 in Vietnam (venue tbc).