



MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT
**Vietnam Institute of Geosciences and Mineral Resources
(VIGMR)**



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Representative of VIGMR to Sentinel Asia
Awaji , Japan, November 1st ,2018



INTRODUCTION TO VIGMR

COOPERATION and CONTRIBUTION in FRAMEWORKS OF SENTINEL ASIA





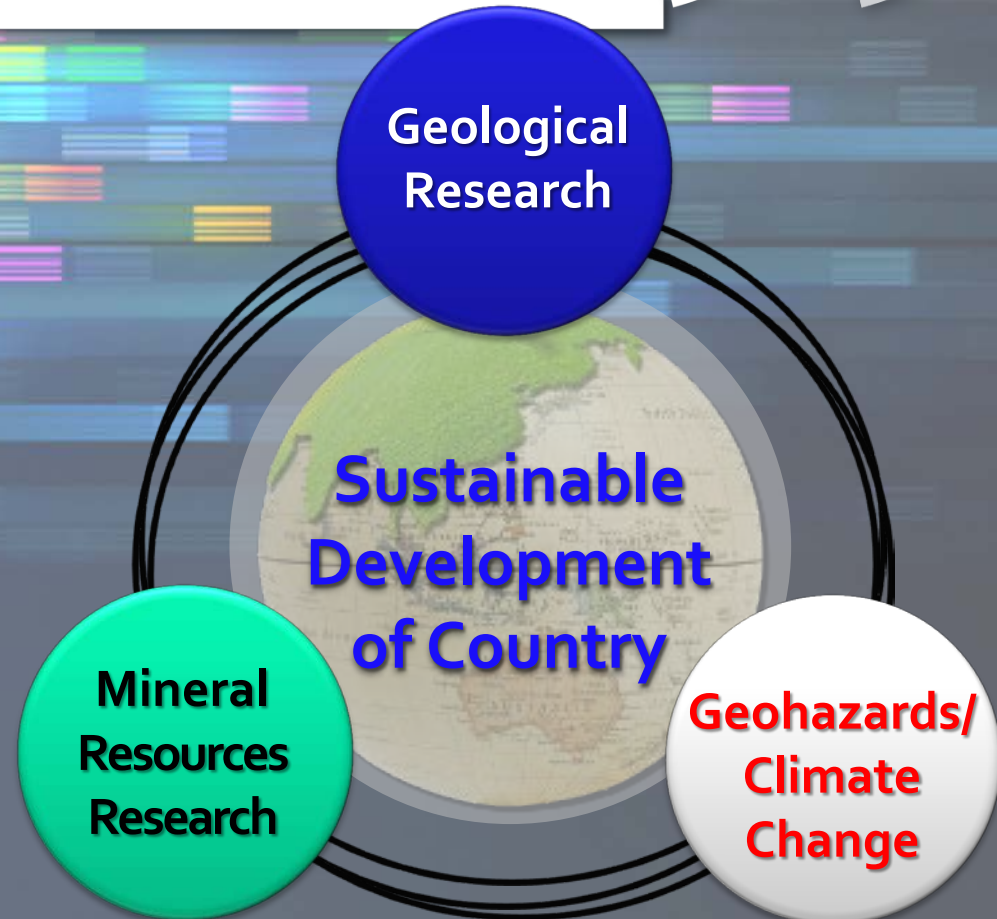
INTRODUCTION TO VIGMR



VIETNAM INSTITUTE OF GEOSCIENCES AND MINERAL RESOURCES

Vision & Mandate

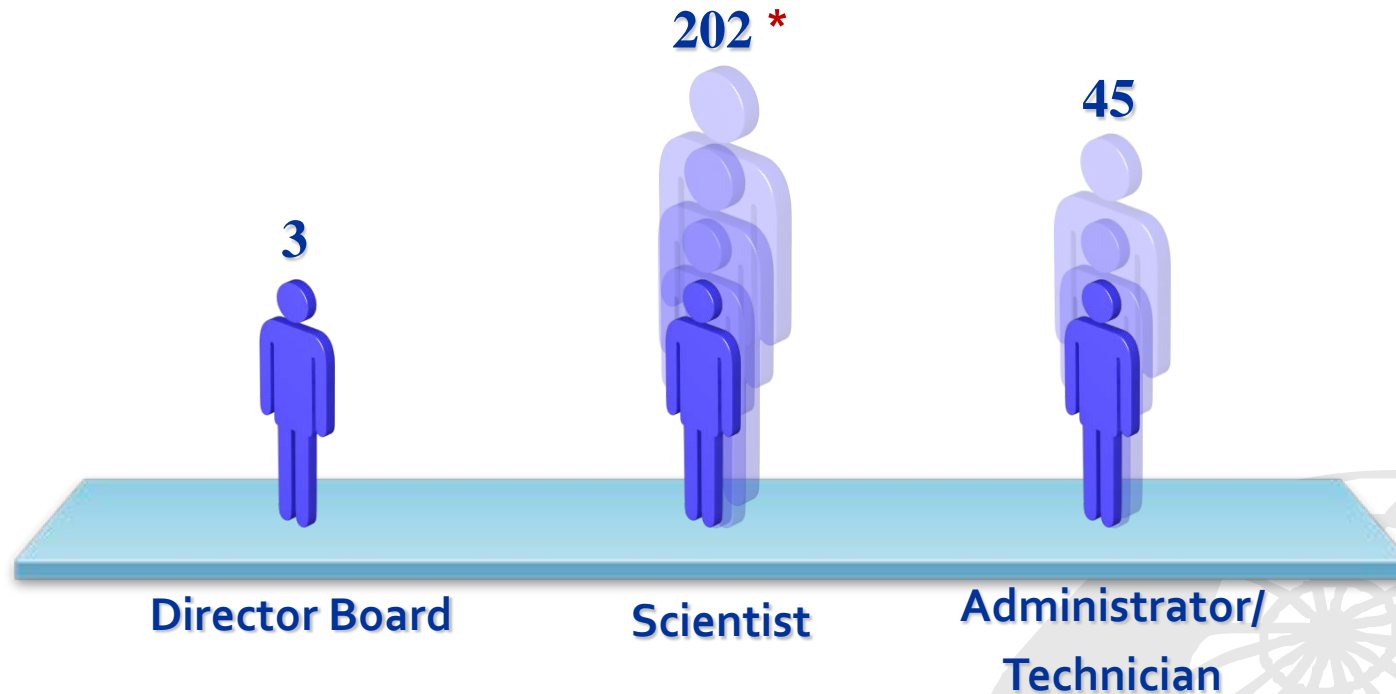
Innovation & Inspiration for Growth:
A **Leading Institute** for Geosciences and
Mineral Resources Research in Vietnam





- **1965:** established as Geological Research Union No. 45 under Department of Geology and Minerals of Vietnam.
- **1976:** Approved by Council of Ministers of Vietnam to become a research institution in the field of Geology and Mineral Resources.
- **1996:** **VIGMR** was approved by the Prime Minister to be a National Institute under the Ministry of Industry.
- **2002:** **VIGMR** was a basic research institution under the Ministry of Natural Resources and Environment (MONRE).
- **At present:** **VIGMR** is one of 41 national research institutes, which is approved by Prime Minister, fully funded by Government.

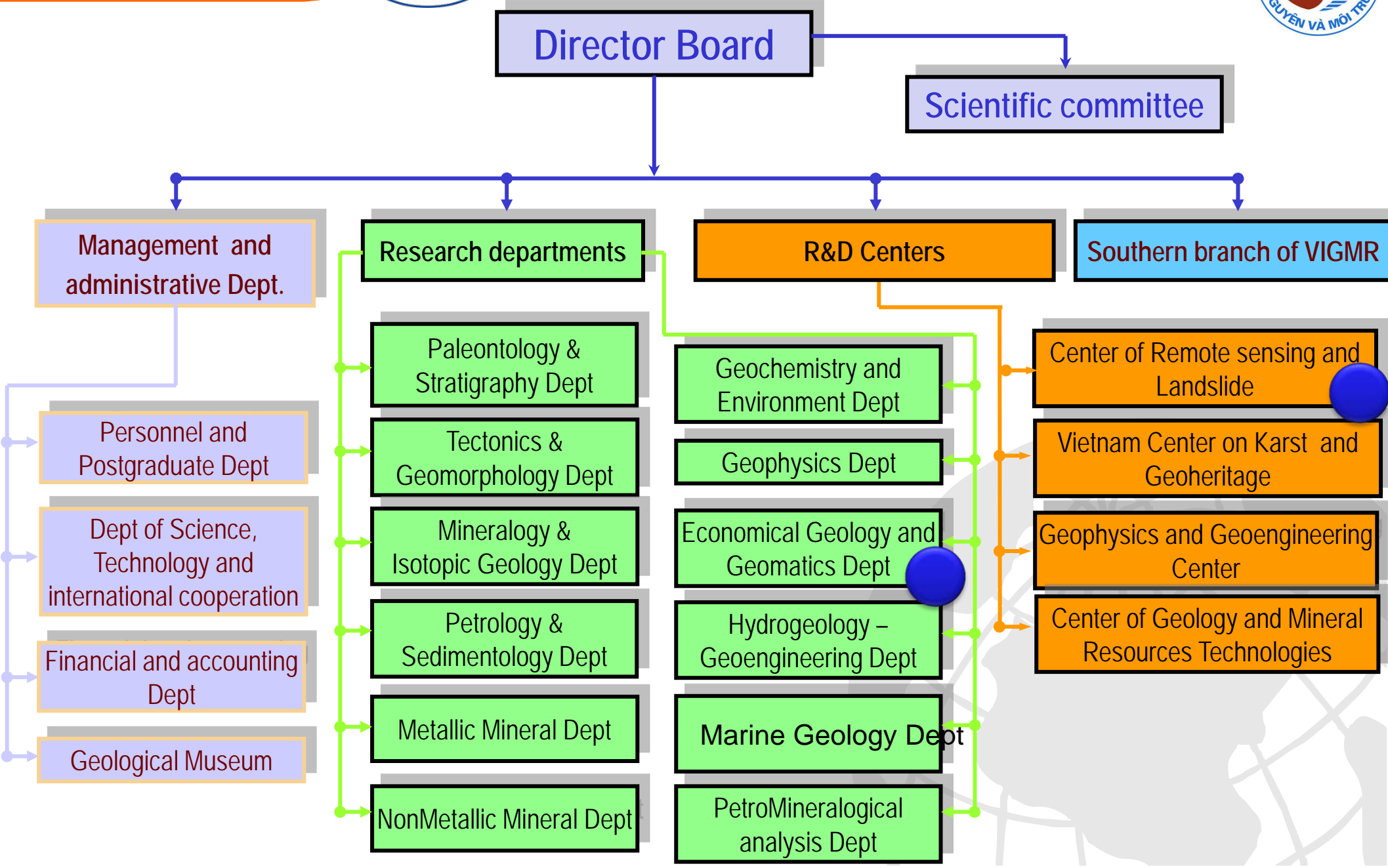
Development of VIGMR's human resources



* Prof : 01, Ph.D: 22, M.Sc: 62, B.Sc: 118



Organization





Functions and Mission



To conduct scientific research and development: on geology, mineral resources, **geo-hazards**, underground water, marine geology, **environmental geology**, urban geology, medical geology, geotechnics and geoheritage;

To organize on-the-job and postgraduate training on geology and mineral resources;

Application and transfer of technology, provide consultancy for Government in the field of geology and mineral resources;

To create the national standards, scientific foundation & geoscientific database, etc. to invest, & develop strategy and plan for socio-economic development of the country and regions.

VIGMR's International cooperation

VIGMR has close scientific relationships and cooperation with international organizations

IGCP
UNESCO
UNDP
CCOP
ESCAP
JAMSTEC, ICL
NGI
GEUS
CAS
SENDAI Partnerships.

Scientists from universities & other countries in geological cooperation programs, exchanging experiences on scientific researches and training activities

Australia
Austria
Belgium
Canada
Cambodia
China
France
Germany
Italy
Japan
Laos
Malaysia
Poland
Russia
Thailand
USA, etc.



Cooperation with JAMSTEC on Marine Geology



Cooperation with KIGAM: HUB-CENTER for joint research and training



**Cooperation with BGS: Preparing project proposal
“Megacity-catchment trade-offs for sustainable growth”**

11 SUSTAINABLE CITIES AND COMMUNITIES



Coastal Community Resilience in Vietnam

- Organize capacity building program for those who are involved in Coastal hazard vulnerability reduction and coastal zone development in order to improve the understanding of agencies at sub-national and national levels to address coastal hazard vulnerability during development planning.
- Promote risk-wise behavior of the population of selected vulnerable coastal urban areas by implementing pilot interventions in terms of DRR measures that enhances the community knowledge on effective response to disasters, preparedness and risk reduction measures.
- Promote policy changes for mainstreaming DRR in to development practice for coastal hazard impact reduction and environmental and natural resource protection.
- Improve dissemination and use by at-risk communities of coastal hazard (such as tsunami, cyclones, coastal flooding etc.) early warning (EW) for coastal hazards.

13 CLIMATE ACTION





11 SUSTAINABLE CITIES
AND COMMUNITIES



Regional **Capacity Enhancement** for **Landslide** Impact Mitigation (RECLAIM)

Share, enhance and develop best practices for early warning of landslides for sustainable development in areas affected by landslides in the 10 target countries

1. Assess and recommend ways to address critical factors responsible for destabilization of slopes and trigger landslide events
2. Collecting and documenting good practices for early warning of landslides in participating countries to help replication within the region
3. Introduce and develop existing and new concepts pertaining to establishment of precipitation thresholds values for landslides in different geological materials.
4. Provide input to local and regional multi-hazard platforms for early warning and propose suitable mitigation measures in areas that require immediate attention.

13 CLIMATE
ACTION





11 SUSTAINABLE CITIES
AND COMMUNITIES



Community Based Landslide Mitigation

- project is the first of its kind being undertaken in our CCOP region, aiming to working on the risk of landslide in countries, to share experiences and support each other making our countries more resilient to the threats of landslide based on the development and extension of Land Watch Network.

13 CLIMATE
ACTION



11 SUSTAINABLE CITIES
AND COMMUNITIES



Monitoring Land subsidence in Ca Mau province, Vietnam

- Establishing a monitoring system to verify the rate of ongoing subsidence;
- To initiate further geologic mapping to better understand the geotechnical properties of the main geologic units affecting the subsidence;
- Provide recommendations to significantly reduce, or preferably completely stop all ongoing groundwater pumping.

13 CLIMATE
ACTION



Geohazards: Investigation, assessment, and warning zonation for landslides in the mountainous regions of Vietnam (~ USD 30 millions, 2012-2020) .

Objectives

The establishment of a **standard national database** on landslides, and generation of **landslide hazard maps** at scales of 1:50,000 and 1:10,000 for 37 mountainous provinces

The design of an **Early Warning System** for landslides, and implementing that in a number of landslides prone areas

Developing **community based Landslide mitigation network** in the whole country

Responsible for Landslide and Debris flow forecast on National TV when there is tropical typhoons or heavy rainfalls.

International cooperation for capacity building and technology transfer

On-going project



Landslide inventory

Landslide hazard happened on 14/9/2004 in Sùng Hoàng village, Phìn Ngan commune, Bát Xát district, Lào Cai province. It caused 24 people deaths, 4 houses collapsed. **30.000 m³ soil**

On-going project



Landslide hazard happened on 7/9/2012 in mineral mining in Trống Pá Sang village, La Pán Tẩn commune, Mù Cang Chải district, Yên Bái province. It caused 20 people deaths.

On-going project



Landslide occurred at Km46+450 of national road 4D in Sin Chải village, Giang Ma commune, Tam Đường district, Lai Châu province on 2/7/2013 .

About 30.000m³ soil collapsed and caused traffic block in several days.



Landslide occurred at Km34 of National road 21A on 9/7/2013.

It caused traffic block in several days.

APPLICATION OF RS IN LANDSLIDE STUDIES

Optical RS data:

- Provide valuable information: land cover, fault zone, and fractured zones
- Occurrence of landslide, changes in land cover,

Radar data:

- Occurrence of landslide, changes in elevation
- Soil moisture

➤ **LANDSLIDE SUSCEPTIBILITY MAPING**





COOPERATION and CONTRIBUTION in FRAMEWORKS OF SENTINEL ASIA



COOPERATION and CONTRIBUTION to SENTINEL ASIA



- **Existing international cooperation on landslide and geohazards:**
 - ICL (Japan), NGI (Norway), BGS (England), ITC (Holland), NTU (Taiwan), DMR (Thailand), ADPC
- **VIGMR is willing to be DAN (requirements)**
 - Share experiences with other countries
 - Open to new cooperation
- **Areas of cooperation**
 - New technologies (48-hour rainfall forecast, high resolution RS image)
 - Robust algorithm for landslide hazards mapping
 - Capacity building
- **Land subsidence in Mekong Delta (hidden hazards)**





THANK YOU

FOR YOUR ATTENTION!