



Building capacity of global geoscientific workforce through Japan-ASEAN university network

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The south-east Asian region is among the most complex geologic region in the world. Besides its huge potential of earth resources, this region suffers tremendous damages caused by various geologic hazards. In order to strengthen geoscientific research and educational capability in this region to an international standard, a regional network of geoscientific workforce has been established between Japanese and ASEAN universities as part of the Southeast Asia Engineering Education Development Network (SEED-Net) project. The project was initiated at the Japan-ASEAN Summit Meeting in 1997 and the ASEAN-Plus-Three Summit Meeting in 1999. The SEED-Net project was officially established as an autonomous sub-network of the ASEAN University Network (AUN) in April 2001. The AUN/SEED-Net aimed at promoting human resources development in nine (9) fields of engineering in ASEAN, in which geological engineering is one of these fields. The network consists of 19 leading Member Institutions (selected by the Ministries in charge of higher education of respective countries) from 10 ASEAN countries with a support of 11 leading Japanese Supporting Universities (selected by Japanese Government). The AUN/SEED-Net is mainly supported by the Japanese Government through the Japan International Cooperation Agency (JICA), and partially supported by the ASEAN Foundation.

For the field of geological engineering, the Gadjah Mada University (Indonesia) becomes the host institution for an international Master degree program and Doctoral degree sandwich program since year 2003. The Kyushu University (Japan) becomes

the coordinating university among Japanese supporting universities (e.g., Kyushu University, Kyoto University, and Hokkaido University). The Japanese supporting universities also become the host for a Doctoral degree in Japan program for young ASEAN researchers. The core program is implemented through the establishment of several collaborative research topics in the fields of engineering geology (i.e., erosion in tropical countries and tunneling geotechnology), resources geology (i.e., metallic mineral deposits), and geothermal energy. In the wake of the Sumatra tsunami 26 December 2004 and two big earthquakes at magnitudes of 9.0 and 8.7 that occurred in the last one year, a new collaborative research in geohazards management is currently established. Research projects are mainly done by Master and Doctoral degree students under the joint supervisions of international experts from the host institution, member institutions, and Japanese supporting universities. The project also supports interaction and knowledge transfer programs among researchers through the Japanese professors dispatch program, short term visiting program to Japanese universities and other member institutions, and field-wise seminars that are conducted several times in a year.

Students and researchers are actively involved in regional to global activities and have been able to present their research papers in various international conferences, such as the Society of Economic Geologist (SEG) Congress 2004 in Perth, the World Geothermal Congress (WGC) 2005 in Turkey, and the Society of Geology Applied to Mineral Deposits (SGA) Biennial Meeting 2005 in Beijing. In the SGA Beijing, our students won the best student poster prize. We have also organized two times the International Symposium on Earth Resources and Geological Engineering Education, in which university researchers, students and invited professionals from industry share research outputs and new ideas. A special issue on research achievements from the AUN/SEED-Net project has been published in the international journal of Resource Geology in autumn 2005. Within two years, this project has graduated one Doctor and five Master graduates with international experience, with additional several active Doctoral and Master students are still working on their projects. Based on the core network program that was initiated through SEED-Net, we gradually have enlarged further regional network through creating a mobile student pool for international internships and research activities. These international activities are the first step towards the future plan on a sharing curriculum and the school-on-the-move project. This mobile and networked geoscientific workforce that has been successfully initiated in last few years is expected to grow further to educate a global geoscience student pool.