Asia-Africa Science Platform Program at Misasa

Misasa, 4 October, 2005

Dear Colleagues,

We are pleased to inform you that ***Asia-Africa Science Platform Program (AASPP)*** is being undertaken at the Institute for Study of the Earth's Interior (ISEI), Okayama University at Misasa. The Program, sponsored by Japan Society for the Promotion of Science, has started in September 2005 and will continue until March 2008. The following is the overview of the Program and Subject Objectives.

1. Objective of the Program

This program is designed to create high potential research hubs in selected fields within the African region in our case, while fostering the next generation of leading researchers. It does this by establishing sustainable collaborative relations among core universities and research institutes in Japan and some African countries. Under the program, these "core institutions" will collaborate in research fields of special importance or significance to Africa and that is deemed to be of high priority within Japan.

2. Core institutions

Japan: Institute for Study of the earth's Interior, Okayama University, Misasa
Cameroon: The Institute for Geological and Mining Research, MINRESI, Yaounde
Ethiopia: Mekelle University, Mekelle
Tanzania: University of Dar es Salaam, Dar es Salaam

3. Title of the Subject

Geochemistry of the Lake Nyos gas disaster, Cameroon Volcanic Line-Rift Valley volcanoes and the underlying mantle

4. Objectives of the subject

In West and East Africa there exist a few volcanic crater lakes that contain a tremendous amount of dissolved carbon dioxide and other gases. At Lakes Nyos and Monoun (Cameroon) the catastrophic release of such gases resulted in gas disasters in mid-80s that claimed the lives of approximately 1800 people. These lakes are located along the Cameroon Volcanic Line (CVL). Lake Kivu along the Great Rift Valley at the border between Rwanda and D.R. Congo is also enriched in dissolved gases, and a gas explosion similar to that in Cameroon is feared. Carbon dioxide dissolved in these lakes is of magmatic origin. Mt. Cameroon, located in the middle of CVL, is an active volcano with several eruptions in the last 100 years. Magmatism in the Great Rift Valley is said to have common features with that of CVL from the geophysical/geochemical point of view. Magmas for these volcanoes are derived from partial melting of underlying mantle. During

the program we try to deepen the geochemical understanding how magmatic gases reach the surface of the Earth and to understand magma genesis from the mantle through detailed chemical and isotopic analyses of selected samples, and to characterize the underlying mantle. These studies will be undertaken as the collaborative work between the institutions participating in the program.

5. Coordinators of the Program

Japan

Chief coordinator: Minoru Kusakabe, Professor of Geochemistry, Institute for Study of the Earth's Interior, Okayama University

Sub-Coordinators: Eizo Nakamura, Professor of Geochemistry, Institute for Study of the Earth's Interior, Okayama University

Hiroshi Satake, Professor of Geochemistry, Department of Environmental Sciences, Toyama University

Takeshi Ohba, Associate Professor of Geochemistry, Volcanic Fluid Research Center, Tokyo Institute of Technology.

Cameroon

Coordinator: Joseph V. Hell, Director, The Institute for Geological and Mining Research

Sub-Coordinators:Vincent Ngako, Head of Research, The Institute for Geological and Mining Research

Ethiopia

Coordinator: Tarekegn Tadesse, Program Manager of Institutional University Cooperation Makelle University

Sub-Coordinators: Dessie Nedaw, Professor, Department of Applied Geology, Melelle University

Tanzania

Coordinator: Makenya Abraham Honoratus Maboko, Professor of Geology, University of Dar es Salaam

Sub-Coordinators: Dr. Crispin Kinabo, Professor of Geology, University of Dar es Salaam.

6. Exchange Plan

6-1 Coordinators' Meeting

The coordinators and sub-coordinators will meet at the Institute for Study of the Earth's Interior, Okayama University, Misasa, on 6-7 October 2006. The meeting is intended for all the participants to reach the common understanding of AASPP. Research plans for the Program and guidelines for exchanging young scientists will be discussed. Discussion will be extended how to sustain the collaboration after the support from the Japan Society of Promotion of Science has terminated.

6-2 Collaboration

1. Geochemistry of gassy lakes in Cameroon.

Minoru Kusakabe and his associates have been working on this issue for long. Artificial degassing of Lakes Nyos and Monoun is going on, resulting in the rapid changes in the lakes' chemical and physical structures. It is very important to keep monitoring the lakes, especially by Cameroonian scientists. To this end, participation of young and motivated Cameroonian scientists in this work is essential. They will attend the field survey

scheduled in January 2006 and cooperate with the Japanese team. Sample collection, chemical and isotopic analyses, and interpretation of the data including the past ones will be done. This collaboration aims at the goal that the young Cameroonian scientists can continue the monitoring by themselves and investigate the lakes independent of the help by foreigners.

2. Geochemistry of volcanic rocks from CVL volcanoes
It is essential to understand why and how gases of magmatic origin can reach the surface of the Earth to produce highly gas-rich lakes as mentioned above. To this end, detailed geochemical study of magmatism along the Cameroon Volcanic Line is indispensable. Young Cameroonian geochemists/volcanologists will be invited to the Institute for Study of the Earth's Interior, Okayama University to perform such studies. Collaboration with young Japanese scientists is also planned. This is extremely important for the field survey. The timing of initiation and selection of young scientists of this subject are decided during the Coordinators' meeting.

3. Geochemistry of volcanic rocks from the Great Rift Valley volcanoes
Magmas in this region are believed to be genetically related to those for the Cameroon Volcanic Line volcanoes. In this sense the subject is intimately related to subject 2 above. Detailed geochemical study of magmatism along the Great Rift Valley will be undertaken in collaboration with young Ethiopian and Tanzanian geochemists/volcanologists. They will be invited to the Institute for Study of the Earth's Interior, Okayama University for chemical and isotopic analyses of the samples using high-quality facilities installed at ISEI. The timing of initiation and selection of young scientists of this subject will be decided during the Coordinators' meeting.

6-3 Scientific Seminar
The scientific seminar devoted for this Program is currently scheduled on 27-28 February 2006 at Misasa, Japan. The subjects to be discussed will be naturally related to those planned in the collaboration scheme. Some young scientists from Cameroon, Ethiopia and Tanzania will attend the seminar. A student from Ghana may also attend. All geochemists working for the Institute for Study of the Earth's Interior, Okayama University will actively participate in the seminar, and some of them will present their achievement. Some Japanese geochemists in the related fields are also invited to the seminar. To deepen the understanding of the proposed research subjects, some experts from US and Europe working in the field of geochemistry close to the planned research subjects will be invited. See "First Cicular" for detailed information of the seminar.

Sponsors
Institute for Study of the Earth's Interior, Okayama University (ISEI)
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Contact Address
Professor Minoru Kusakabe
Institute for Study of the Earth's Interior, Okayama University
Misasa, Tottori-ken 682-0193, Japan
Tel: +81-858-43-3737 (MK's office), 1215 (institute)
Fax: +81-858-43-3737, 3450
e-mail: kusakabe@misasa.okayama-u.ac.jp