

**The “Kizuna Program”  
coordinated with various JICA programs**

JICA also promotes coordination of the “Kizuna Program” with the other programs and projects of JICA with the objective of realizing greater achievement. Below shows some examples of our efforts.



**Malawi**

**Heading towards Rare Earth Development**

Coordination with the Project on Capacity Development in Mining Sector in Malawi

In Malawi, mining industry development is regarded as important, among others, the high potential of rare earth has led to a growing interest for the exploration of it. Though the government of Malawi has been actively promoting the investment of private companies to the mining sector after enacting the mine regulation in 1996, there was still needs to develop the geological mapping for the exploration. JICA have been continuously supporting the development of geological map with the Geological Survey

of Malawi through technical cooperation projects. In addition, by accepting the trainees from geochemical field in the Kizuna Program, we are promoting the development of geological map in conjunction with the trainees and technical cooperation projects. Also, for the rare earth exploration, we have accepted trainees from government agency and private sector, we expect that both research by trainees and result of the technical cooperation project will contribute to the achievement of rare earth exploration.



**Mozambique**

**Aiming at the strengthening of university education system**

Coordination with the Project on Capacity Development in Mineral Resource Sector in Mozambique

Mozambique has abundant mineral resources such as coal and natural gas, titanium and bauxite and future development is expected. However, large-scale developments have not been performed for a long time, and the government agencies do not have appropriate knowledge in promotion and management system. JICA has been implementing the project from June 2014 including the development of human resources of governmental officials and university researchers, the preparation of the curriculum, improving university teaching methods, and the maintenance of the equipment necessary for the research.

In parallel, the “Kizuna Program” is also accepting candidate teachers, and by combining it with the activities of the technical cooperation project, these activities lead to the establishment of the future university education system. In Mozambique, Japanese companies are promoting the mining development, the needs of human resources development are high in the mineral resources industry and it has become an important project to promote smoother mining development.



**Cambodia**

**Aiming at a safe and sustainable mining development**

Coordination with the Project on Capacity Development for Mining Administration in Cambodia

There are a lot of mineral resources in Cambodia and the Cambodian government also attaches great importance to the development of the mining sector. However, the management of mining activities such as exploration, mining development, mineral processing, mine safety, and environmental protection, has not been enough implemented causing problems with safety and environmental surfaces, an institutional strengthening had been sought. JICA has been implementing the technical cooperation project for the development of Mine Safety Law, an inspection system and structure. As part of the capacity building to carry out the inspections, we are planning to conduct the training of ministry

officers through the Kizuna Program. Through these activities, we expect that mine safety system is set, and safe and sustainable mining development in Cambodia will be achieved.



**Strategic partnership agreement on mineral resources sector between Akita University and JICA**

In 2014, a strategic partnership agreement on mineral resources sector was signed between Akita University and JICA. As main cooperation, Akita University accepts Kizuna Program trainees (government officials, university researchers), and other cooperated operations in a wide range of aspects including human resource development in the mining sector, teacher training and curriculum improvement in universities of developing countries are expected. On the other

hand, JICA will support Akita University's initiative for educating international human resources by accepting Akita University students as JICA interns, etc. In addition, both are promoting this partnership in various fields such as the Science and Technology Research Partnership for Sustainable Development (SATREPS), technical cooperation projects in Mozambique etc.

— Japan Brand ODA —

**Human resource development and human network strengthening  
in the mining sector for sustainable mining development**

**The Kizuna Program**



For developing countries with rich mineral resources, compared to the development of other industries, mining development is a powerful growth engine producing outcomes in a short term.

To continue long-term sustainable mining development, the developing countries who has the mineral resources requires a wide range of knowledge and abilities such as legal system development, mineral resources exploration and development, mine safety, mine pollution and environmental measures, and closing of mines. JICA supports sustainable mining development by implementing a long-term training in cooperation with Japanese graduate schools and companies for developing human resources of governments and universities. By developing human resources and the strengthening of human networks, exploration and investment in the developing countries with mineral resources by Japanese companies are boosted, contributing to mining development and at the same time a stable supply of mineral resources.



Unique know-how, experience and technologies originating in Japan and cultivated at international cooperation sites around the world are proving useful in the field in many developing countries. JICA is disseminating these methods and program models that are effective for solving problems to the rest of the world as the Japan Brand of international cooperation and promoting its use.



Of the 17 Sustainable Development Goals (SDGs), strongly associated goals are shown in color.

### Developing countries current situation and challenges related to mining development

Mining development in developing countries is a strong growth strategy as they can obtain results in the short-term compared to other industries. Mining development has a great influence on the society and economy of the country through the establishment of social infrastructure, regional development in remote areas, contributing to the human resource development of engineers and technicians in various fields. However in order to obtain a benefit a lot of funds and technology will be required in finding the mineral resources that remain in the basement. The current situation is that many developing countries are facing a short of funds and technology and the government knowledge also needs to be improved. There are a lot of challenges to be solved such as mining and industrial policies, legal system, enforcement system, basic geological information, infrastructure, political and legal risks, security and conflict risks, and furthermore the recent rise of "resource nationalism", directed to foreign companies entering. In order to achieve sustainable development in the mining sector, assistance from developed countries with a lot of knowledge is required.

### Japan's current situation and challenges related to resources management

Japan is one of the leading mineral resources consuming countries in the world mainly relying on imports from overseas. If Japan critically relies on imports from a limited resources country, the dependent risk is higher on country's policies and it will have a major impact on industrial and economic situation of Japan. As minerals importing country, it is extremely important for mining developing countries to promote mine development, in order to secure sustained and stable importing of mineral resources. Support for sound mining industry development in developing countries is also important for a sustainable development and maintenance of the international economic system. Utilization of Japanese experience and technics in the mining sector for the developing countries can contribute to a stable supply of mineral resources for the international market, and to achieve revitalization and sustainable growth of the mineral resources industry in developing countries.

### The Japanese strengths in the mining sector

Japan carried out a mine development since the Nara period (8th century) and has a history of promoting rapid mining industry modernization during the Meiji era (late 19th century). Once having a lot of mines ranging from 8,000 to 10,000, taking full advantage of mining industry as the engine of modernization, and to overcome the pollution problem related to mining industry, we have been realizing a sophistication of the industry. High technology and administrative experience that Japan has acquired through these processes will be very useful to improve mining development in developing countries. Through the program taking advantage of such strengths of Japan, we would like to contribute to the sustained and stable supply of mineral resources to the international community and Japan by leading an effective mining development in developing countries.



### Kizuna Program

Through human resources development in developing countries with a mineral resource potential, and support for mining development in the country, it is possible to build a good relationship in the mining sector with developing countries, and through it, to contribute in ensuring the stable mineral resources supply. In addition, through the program, we aim to support comprehensive capacity development of government officials, who are in charge of mining administration in the countries, and university teachers and researchers, who foster human resources in the mining sector, by obtaining knowledge of not only technical matter but also on social and economic fields which is required to promote mining industry development.



#### Academic Ability Improvement

On master's and doctoral courses in a Japanese University, acquire the academic degree and also the knowledge about the latest research and technology in the mining sector.

#### Practical Skills Improvement

Obtaining the experience and knowledge of mining business and research through internship program in Japanese companies, government agencies, universities and research institutes.

#### Human network strengthening

Provision of training courses related to mining policies, mining management, and mining contract, etc. Strengthening a network with mining related organizations while achieving capacity development in policy and management sides.

#### Overseas Field Research

Field survey at home country with trainees, supervisor and research partners, in order to acquire geological information for research and to form a network between supervisors/research partners and home country officials.

Acquiring also the knowledge of Japan on environmental technology and industrial diversification

#### Expectations on the excellent mining industry human resources graduates

**Akira Sato**, General Manager, Raw Materials Development, Raw Materials Div.-I, Nippon Steel & Sumitomo Metal Co., Ltd.

Our company has developed a coal mining project in Mozambique, but we find that the number of personnel who has enough technology and experience is limited. Mining business is a long initiative requiring time but I have great expectations regarding this "Kizuna Program" that focuses on human resource development which is in the same way an effort that will take time. We are aware of that it takes a long time to overcome these human resource challenges, and we should tackle the challenge as Team Japan, I will do all I can cooperate by letting kizuna trainees come to visit our company etc. I cannot stop wishing that many promising persons will come to Japan, become experts, stand to back the future of their motherland, and feel Japan as their second home country through the program.



#### As a bridge between homeland and Japan

Graduate School of Engineering and Resource Science, Akita University  
Research Theme: Petroleum Reservoir Characteristics  
**Mr. Purevdorj Khurelkhuu (Mongolia)**

I am satisfied not only by the classes at the university, but also by the extensive programs such as short-term programs and overseas field study. As a geologist I used to only look at the acquisition of technical mastery, however, by taking a short-term program I am now also able to have a perspective on how to proceed mining development. Also during field survey it is possible to carry out investigations while asking guidance to the supervisor and I can improve practical ability of many aspects. Through this program I want to build relationships with Japanese officials, and after returning homeland I want to take advantage of these technologies, experience, and network for mining development of my country.

#### The Strengths of Japan

- The advanced technique and knowledge on exploration stage by using remote sensing technology with high satellite image technology
- The system and technology on the mine safety and security enhanced by longtime experience of mining activities and operations
- The experience and technology to overcome mine pollution generated from a variety of mines
- The industry diversification policy and experience promoting the expansion and development of the mining industry to other industries
- The experience and know-how accumulated resulting from the closure of the numerous owned mines (industrial transformation, mine pollution prevention)

#### "Kizuna Program" Target

Governmental Officials  
University Teachers and Researchers

After Returning Home  
Working as a contact person of the related organizations of Japan

Governmental Officials  
Implementation of transparent and fair mining administration

University Teachers and Researchers  
human resources development in line with the trend of mining industry

#### A support of the mining sector creating bonds with Japan

Minister of Natural Resources, Energy and Mining, Republic of Malawi,  
**Hon. Bright Msaka, SC**



Mining sector is one of the most important sector in Malawi, the government of Malawi would like to develop the sector more. To achieve the development, human resource development is important. Support this human development, we are welcomed "JICA's Training Program for Human Resources Development in the Mining Sector", and we are expected that developing the practical ability will be covered under the training program, as entering the private company is needed to develop the mining sector. We are also expecting that the tie between Malawi and Japan will be strengthened through this training program.

#### Mining research in Japan for future bonds

Kyushu University, Faculty of Engineering  
Department of Earth Resources  
System Engineering  
Professor  
**Koichiro Watanabe**



Mining is an important study and an essential fields that supports the industrial nation of Japan. There were many coal mines in the Kyushu region, based on such circumstance Kyushu University have been studying on the mining sector for a long time. We are glad to be able to use our University knowledge accumulated up to now through the "Kizuna Program". In the joint research program that we have recently started with Hokkaido University we both take advantage of our knowledge and I believe that we are able to provide the opportunity of developing the comprehensive capacity on the mining sector. Talented students in developing countries are becoming a good stimulus to Japanese students. And by mutually enhancing each other, and we look forward to building our future relationships.

Photo : Kyushu University

#### Sharing Japan's experience to the world, through an international cooperation making also Japanese mining industry active

- Deployment of sustainable mining by using Japanese environmental technology
- Development of the mining industry and country itself thorough mining development
- Securement of stable supply of mineral resources (supply sources diversification)
- Sustainable and stable mineral resources supply to the international market
- Activation of Japan's mining industry and sustainable growth of manufacturing industry