The history of University of Miyazaki international activities on the mitigation of arsenic contamination and new project by JICA Partnership Program in Myanmar

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Abstract

Opportunity to start the University of Miyazaki environmental activities is Toroku which is the name of village. Toroku is located in the northern part of Miyazaki prefecture. And there was arsenic mining and furnace for 1920 to 1962. It started as medical examination for arsenicosis patients caused by mining pollution in 1976. Medical doctors at the university supported medical examinations. In addition some professors cooperated to save the villagers and to recovery their human rights. This project has been expanded to the international collaboration with NGO and JICA in Bangladesh as well as India. The University of Miyazaki arsenic mitigation project has a long history.

The University of Miyazaki obtained an opportunity to be active for environmental issue in Myanmar and started the JICA Grass root project "The Project for Promoting Environmental Health in Arsenic Contaminated area in Myanmar" in August 2015. The purpose of this project is promoting the implementation system of the environmental health by collecting and analyzing the basic health data, and taking countermeasures against unsanitary drinking water in the arsenic contaminated areas.

Keywords: Environmental, Arsenic, Health, Drinking water

1. Opportunity to start the environmental activities of University of Miyazaki

Opportunity to start the University of Miyazaki (hereinafter referred to as the "UOM") environmental Activities is Toroku. Toroku is the name of village, located at the northern part of Miyazaki prefecture, and is a beautiful back-country. There was mining of silver, copper, lead and Arsenic. And there was furnace for purification of Arsenic until 1962. Poisonous arsenious acid had been produced by burning arsenopyrite in a primitive furnace. The air, river water and soil of the village in a valley were highly contaminated by arsenic. Concequentry Crops, cattle, horses and people were severely affected by arsenic. Many villagers had died and been sick by the arsenic-affected air, water and food. It started as medical examination for arsenicosis patients caused by mining pollution in 1976. Medical doctors at the university supported medical examinations. In addition some professors cooperated to save the villagers and to recovery their human rights. This project has been expanded to the

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Asian countries. The UOM started the research for arsenic pollution contamination in Asian countries at 1996. And the UOM carried out 2 arsenic mitigation projects in collaboration with Japan International Cooperation Agency (JICA) in India. The names of the project are 1, Integrated Approach for Arsenic Pollution Mitigation in Uttar Pradesh state, India (June 2008 to May 2010) and 2, Execution of Arsenic Mitigation Project for Establishment of Government Initiative System in UP state of India (March 2011 to March 2013). The UOM arsenic mitigation project has a long history.

Under the slogan, "Look at the World, Start with the Community," the UOM will cultivate specialized professionals with humanity, sociality and internationality and dispatch talented human resources into society.

The UOM will also create an interdisciplinary life science that will contribute to the welfare and prosperity of humanity and will engage in scientific activity to preserve the global environment that is the origin of all life. It will actively promote world-class research activities, and foster advanced academic research.

We also started conducting preliminary study on arsenic contamination in Ayeyarwaddy Division together with Department of Medical Research (Lower Myanmar) from April 2013.

2. Background between Myanmar and UOM

Myanmar and Japan had long held the strongest ties among Asian countries and the diplomacy started since November 1954.

Myanmar and UOM communication started in August 2012 and three professors of UOM visited Ministry of Health and Ministry of Veterinary Science in Myanmar. Since the first meetings, both sides of us discussed about the future collaboration in development of medical and veterinary science.

In January 2014, the President of UOM and group attended the 42nd Myanmar Health Research Congress at Department of Medical Research (Lower Myanmar) in Yangon. We hold the joint seminar on Environmental Health and the President of UOM has presented a keynote speech at the seminar.

In April 2014, we concluded Memorandum of Understanding (MOU) between Ministry of Health (MOH) Myanmar and UOM. Four departments from MOH including Department of Traditional Medicine, Department of Medical Sciences, Department of Medical Research (Lower Myanmar) and Department of Medical Research (Upper Myanmar) signed the MOU.

3. Collaboration project between Myanmar, UOM and JICA

3.1 Title and purpose of the project

There are many high arsenic contaminated areas in Myanmar according to a nationwide survey of arsenic contamination in tubewells conducted by the Myanmar government and UNICEF. The survey did not examine residents' health status or any causal relation between the residents' health status and arsenic contamination.

In order to deal with the situation, Ministry of Health of Myanmar is taking comprehensive countermeasures to protect people's health in the country, especially in rural area where people have difficulty getting access to safe drinking water. The UOM, jointly with Ministry of Health of Myanmar, has studied the issue, invited research fellows from the ministry, and discussed the joint project in the field of arsenic mitigation. A comprehensive research project with the JICA, Ministry of Health, Myanmar and UOM will be launched in 2015 as a three-year plan. The title of the project is "The project for promoting environmental health in arsenic contaminated areas in Myanmar." The purpose is to develop implementation system to promote environmental health by collecting and analyzing basic health data and taking countermeasures against unsanitary drinking water in the arsenic contaminated areas.

3.2 Project area, population and period

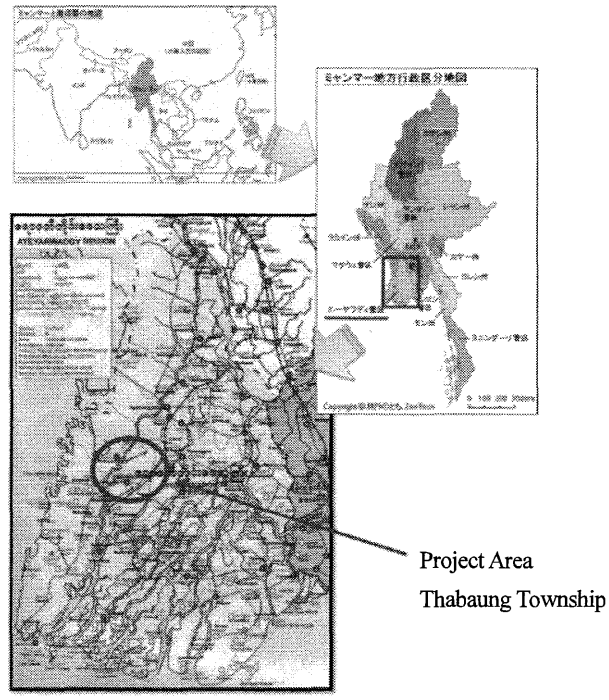

Figure 1 Location of the project area.

The nationwide survey of arsenic contamination in tube wells conducted by Myanmar government and UNICEF discovered that high level of arsenic contamination were concentrated in the Ayeyarwaddy Division, where severe arsenic contaminations of 350-2,915 ppb (WHO baseline for arsenic concentration in drinking water at the level of 10 ppb). We selected Thabaung Township as the target area of this project. Target group is 7 villages (Htanzinhla, Dale-et, Shannkwin, Latechaung, Konetangyi, Thayattaw, Yaylegyi) at rural area in Thabaung Township, about 5000 population in highly arsenic contaminated villages. But, implementation for the safe water supply at 1 or 2 villages. The project will be carried out from August 2015 to July 2018 (3 years).

3.3 Framework and Activity of the project

The framework for the project is three main parts (1. Medical Part. 2. Water supply part. 3. Resident's awareness part.) of activities.

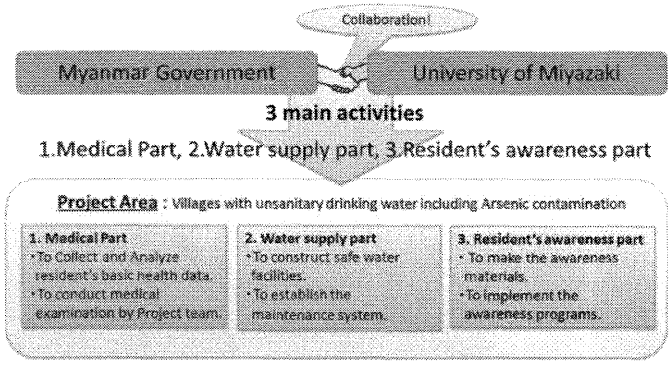

Figure 2 Framework of the project

1. Medical Part

Activities for collect and analyze basic data and information on residents' environmental health at the project site.

1-1. To collect and organize the existing health data.

1-2. To conduct hearing survey (on living environment condition and basic health condition of residents).

1-3. To conduct medical examination by DMR(LM) doctors and UOM experts.

1-4. To analyze the data collected from activities 1-1 to 1-3.

1-5. To prepare the guideline of environmental sanitation epidemiology survey.

2. Water supply part

Activities for develop an appropriate example to install and maintain the safe drinking water facilities adjusted to local conditions.

2-1. To conduct the survey of the water quality for all water source in the project site.

2-2. To develop safe drinking water supply facilities system adjusted to local conditions.

2-3. To select the place of safe drinking water supply facilities.

2-4. To construct safe drinking water supply facilities.

2-5. To develop the maintenance system.

2-6.To prepare the manual for construction and maintenance of safe drinking water supply facilities

3. Resident's awareness part

Activities for improve residents' awareness of safe drinking water

3-1. To conduct the baseline survey.

3-2. To develop educational materials for raising public awareness of safe drinking water

3-3. To conduct the programs for raising public awareness of safe drinking water.

3-4. To conduct the evaluation survey.

3.4 Project implementation

The project will begin in collaboration with the Department of Medical Research (DMR) and Department of Health (DOH), Ministry of Health, Department of Rural Development (DRD), Ministry of Livestock, Fisheries and Rural Development and UOM, Faculty of Medicine and Faculty of Engineering. To supervise and coordinate the project progress, the joint Coordination Committee will be organized with Director General (DMR) and expert from UOM as co-chairman. For the practical consultation and sharing the project implementation status, the sub-joint coordination committee will be organized with representative person from DMR, DOH, DRR and UOM.

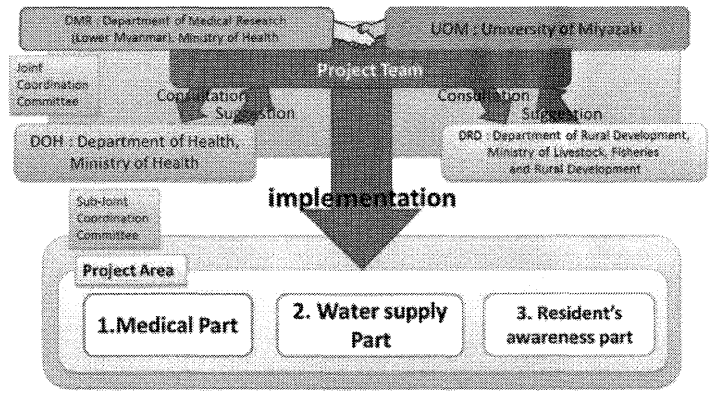

Figure 3 Project implementation structure

4. REFERENCES

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