

# **The Mentally Considerate Approach for Educational Methods Immediately after the Sediment-related Disasters on a Basis of Local Historical Experience**

## **- The Case Study of Environmental Educational Programs in Kumamoto Earthquake 2016 -**

Reiko MACHIDA<sup>1\*</sup>, Miu KITAZATO<sup>2</sup>, Teruaki IRIE<sup>1</sup>, Junya MACHIDA<sup>3</sup>  
and Naomasa HONDA<sup>1</sup>

<sup>1</sup> Department of Regional Regeneration Science, Tokyo University of Agriculture, Japan

<sup>2</sup> Department of Landscape Architecture Science, Tokyo University of Agriculture, Japan

<sup>3</sup> Environment Design Institute, Japan

\*Corresponding author. E-mail: r3machid@nodai.ac.jp

## **INTRODUCTION**

The Disaster Risk Education plays important roles to take over the memory of the disaster and to provide the preparation for future disasters. The education methods for sediment-related disaster utilizes the scientist simulation model, the hydraulic apparatus and field seminar (Yamada, 2006). Besides, importance of the local wisdoms of elderly generations is re-realized through the experience of Great East Japan Earthquake in 2011. On the other hand, the Education Psychology studies reported that the children who experienced a disaster have effect of serious psychology stress in the daily life (Fujimori, 2011). The Education immediately after the disasters is required to care psychological stresses for children. The Kumamoto Earthquake struck the Aso Area of Kumamoto Prefecture on April, 14 and April 16 in 2016, killing at least 20 people. The vast grasslands of Aso Area, historically managed by local agricultural activities such as controlled burning, mowing and pasturage for centuries, has suffered from the sediment-related disasters caused by torrential rainfalls in Northern Kyushu in 2013. The local residents overcame shortly after the disaster by the cooperation in local community, which have evolved historical land use management.

This study aims to propose the method of mentally considerate education immediately after the sediment-related disasters on a basis on local historical experience based on Kumamoto Earthquake 2016 cases.

## **METHODS**

### **1. Investigation of the damage situation of sediment-related disaster in Kumamoto Earthquake**

A wide variety of research materials were used, including academic journals of sediment-related disaster and the survey result of sediment-related disaster by Ministry of Land, Infrastructure, Transport and Tourism and the local newspapers (KUMANICHI). And it conducted the field survey (June, September, October in 2016, February, March in 2017).

### **2. The development of the method of mentally-considerate education immediately after the sediment-related disasters based on local historical experience**

The education programs, based on the disaster situation, were planned in cooperation with the locals and the elementary and junior high school teachers. The education programs were carried out

in two Minami-Aso Elementary School, and a Minami-Aso Junior High School by scientist, locals and NPO, teachers. After the education programs, it carried out a questionnaire survey to 43 the elementary students, 13 junior high school students and 3 teachers.

## **RESULTS**

### **1. The damage situation for sediment-related disaster in Kumamoto Earthquake**

As a result, the first research clarified the characteristics of the Sediment disaster caused by Kumamoto Earthquake. The particular multiplex Sediment disaster occurred in Aso area such as the large-scale slope failures (e.g., Tateno), the landslides and slope failures in the low-pitched slope(e.g., Ko-you), and the debris flow occurrences (e.g., Cho-yo). The earthquake (The A magnitude-7.3) caused by the multiplex sediment disaster in the mountain slope. Together with the torrential rainfalls (19-25 June, 2016) expanded the sediment disaster damages in Mt.Yomine, Tateno and Nagano in Minami-Aso Village.

### **2. The mentally considerate approach for educational program immediately after the sediment-related disasters based on local historical experience**

This education program proposes the five learning objectives.

- a) Instead of facing the reality of the recovery from the disaster of Kumamoto Earthquake, it aims to turn children's attention to the values of local community and local historical experience.
- b) It promotes the friendship of elementary students and junior high school students through the recreational program.
- c) It provides children the opportunity to experience the local historical wisdom of disaster management through field seminars.
- d) It introduces the reconstruction assistance for Kumamoto Earthquake from Tokyo citizen.
- e) It provides junior high school students with the problem to debate on the restoration of grasslands by locals and NPOs after the torrential rainfalls in Northern Kyushu in 2013, and the visions of local community in the future.

As the results of the education programs, through the learning of the local historical experience in the National Park and Geo-Park, children became to realize the place-attachments of the locals community.

## **CONCLUSIONS**

This educational method successfully involved local children in the recovery process by the learning of the regional characteristics and local historical experience. The results of questionnaire survey shows that this method local obtained consent from teachers and children, for a large number of answers contain positive thought and request for next venue of this program, showing the possibility of developing mentally thoughtful education for disaster recovery.

## **REFERNCES**

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