

Volcanic Disaster Prevention and Community Development - How to convert the volcano into a museum -

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Synopsis

One of the most vital issues in developing a community resistant to disasters, is to create an environment where inhabitants are aware of the disaster risks of their own region. We are implementing efforts to utilize an eco-museum concept that regards the whole area as a museum. Through our practices, the following points were found. (a) The concept of an eco-museum is an effective measure for conveying the disaster risks of a region. (b) An eco-museum has the expectations of governments to work as a tool for regional development and disaster prevention. (c) In order to implement an eco-museum, the formation of an organization such as an NPO is necessary. Stable management can be developed through collaborated works with governments.

Keywords: eco-museum, community, education, NPO

1. Introduction

One of the most vital issues in developing a community resistant to disasters, is to create an environment where inhabitants are aware of the disaster risks of their own region. Improvement of the facilities for disaster response is quite effective in mitigating direct damages. On the other hand, improvements of such facilities tends to decrease disaster prevention awareness of local people. With these facilities in place, residents may become complacent, feeling as though they live in an entirely safe environment and forgetting about previous disasters. In the long term and with the disasters being distant memories, stories of disasters are not passed on to younger generations. In the future, the teaching of past disasters will become an important consideration.

The concept of an eco-museum provides local people with an opportunity to learn about their region and ways they can make use of it (Arai, 1995). Under this concept,

the entire region is treated as a new type of museum where different heritages such as nature, culture and industry can be preserved, displayed and knowledge shared with future generations. Inhabitants become curators, passing on their culture and local natural resources to their children (Ishimori 1999, Iwashita 1999). This is just one example of a social education system. Local natural resources and culture are closely related to disasters. Therefore, a clear and scientific method of disseminating such information leads to disaster risks recognition.

The authors are implementing efforts to utilize this concept of an eco-museum in the volcanic disaster prevention of Mt. Sakurajima. This paper introduces in-use examples of these efforts and future issues.

2. Museum activities

We have conducted over 50 events on Mt. Sakurajima through which we have conveyed the

regional features of Mt. Sakurajima to a total number of approximately 3,500 people, ranging from elementary school children to senior citizens. The target demographic for these events can be largely divided into two groups; one for school children, and one for the general public. Our activities include lectures, classes, hands-on seminars, and exhibitions, all of which are related to Mt. Sakurajima. Topics aren't limited simply to volcanoes and disaster coverage but also include a wide variety of areas such as history, culture, industry and tourism of Mt. Sakurajima. There are two reasons why we do not limit the topic to volcanoes or disasters alone. First most, we want to create an atmosphere that attracts the general public and encourages them to attend freely; secondly, there is the need to discover the relationships between each topic so that we can gain a comprehensive understanding of Mt. Sakurajima. Information related to familiar matters or known facts is easy to remember and has a high educational effect. Therefore, we believe it important to develop educational programs that allow participants to enjoy learning about volcanoes. Two examples, conducted in 2004, which are particularly related to disaster preventions, are explained in depth below.

2.1 Exhibition of Picture Postcard of the 1914, Taisho Eruption

To commemorate the 90th anniversary after Mt. Sakurajima's Taisho Eruption in 1914, an exhibition of picture postcard of Taisho Eruption of 1914 was held in January 2004 at the largest community center in Kagoshima City. With the cooperation of an old picture postcards collector, approximately 270 powerful photos (Fig. 1), taken at a time of the 1914 eruption, were exhibited. With a total number of 1,507 visitors, the daily average for attendance was nearly equal to the average number of visitors to nearby Kagoshima Prefectural Museum. However, considering the fact that many elementary and junior high school students visit Kagoshima Prefectural Museum, it can be said that the picture postcard exhibition, targeted toward the general public, was more widely received (Fig. 2). In order to provide sufficient information on volcanic eruptions and disasters, interpreters stayed throughout the event to supplement the information on the postcards. In addition gallery talks were conducted three times a day.

According to the survey results, many visitors learned of the postcard exhibition by happenstance (Fig.

3). And although approximately 10% of the visitors replied that they had no such interest in disaster prevention, nearly 80% answered that their awareness for disaster prevention increased after attending each exhibit (Fig. 4). The exhibition at the community center, where a variety of events and seminars are held, was particularly effective at attracting those who do not have a potential interest in this field.



Fig. 1 Picture postcards of Taisho Eruption (Owned by Susumu Otake).

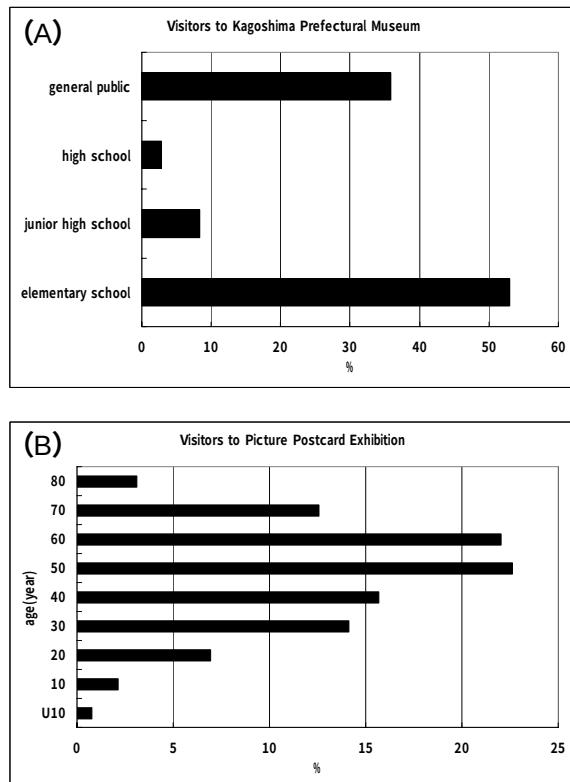


Fig. 2 Visitors distribution of Kagoshima Prefectural Museum and Picture Postcard Exhibition.

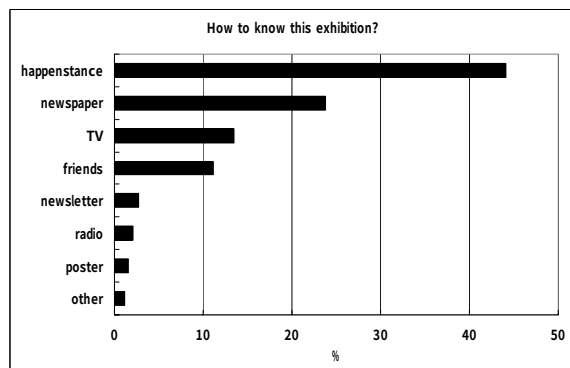


Fig. 3 Result of questionnaire about the publicity.

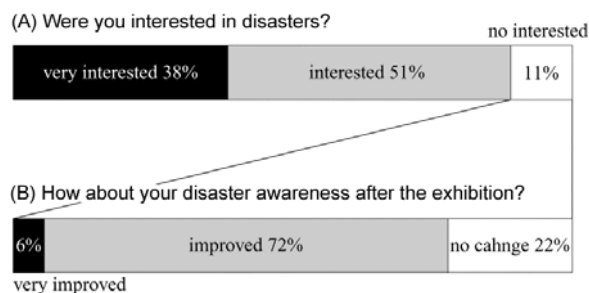


Fig. 4 Result of questionnaire about the awareness.

2.2 Ground Nadir Exploration Tour

In July 2004, we entered the tunnel which is under construction by the Ministry of Land, Infrastructure and Transport with the purpose of a volcanological observation of Mt. Sakurajima (Fig. 5). This allowed participants to actually feel the volcano by looking at rocks from a point 200 meters into the volcano, and at the same time, it was hoped that this would enhance their awareness of disaster prevention. We conducted this event for both schools and the general public, and guided 160 local elementary school children and 100 general public participants. Application for public participation exceeded 4 times the quota, proving that a lot of interest is shown in this event, which cannot be experienced on an ordinary basis.

We also observed a tunnel, dug horizontally, for the installation of volcanological observation equipment. This was a rather simple activity. We entered the tunnel and went to the deepest point (approx. 200 meters), and saw rocks, then returned. However, we were able to add value to this tour by explaining the significance of this tunnel by providing a descriptive overview of the high precision observation equipment used to predict volcanic eruptions.

According to survey results, more than 80% of the participants answered that their awareness of disaster prevention was enhanced. As the saying goes - Seeing is believing, and this event certainly has had great impact. It can be said that the hands-on seminar and demonstration had a very high educational effect.



Fig. 5 Situation of the on-site study tour "Ground Nadir Exploration Tour"

3. Fostering of curators

In the concept of an eco-museum, it is quite important that local citizens play a role as curators. In an attempt to foster local citizen involvement as curators, and with the cooperation of the education board, we have been holding a lifelong learning seminars series called, "Seminars for Tourism Volunteers" targeted towards the general public. This workshop teaches about the local area and how to utilize such information for tourism promotion and community building. Mt. Sakurajima is a tourist destination and its most attractive point is being an active volcano. This means, in order to consider the tourism of Mt. Sakurajima, it is necessary to learn about volcanoes. Through our seminars, we teach people about the characteristics of volcanic Mt. Sakurajima, and how we can make the most out of those features. Although the number of participants may be as small as 10, participants do offer volunteer support at various events. It is hoped that in the future, they will serve as "volcano interpreters." If these curators can convey the attractiveness of Mt. Sakurajima from the perspective of volcanoes and disasters to local children and tourists, this would serve as an extremely effective disaster prevention education system.

4. Results

As the result of our hard efforts, the concept of an eco-museum is becoming more widely recognized by governments, and has been catching attention as a measure for community development. In particular, community development based on the application of the eco-museum has been considered in various bodies or committees sponsored by the Ministry of Land, Infrastructure and Transport. These include "The Council to Consider Mt. Sakurajima's Future", "The Review Committee of Road Landscape in the Furusato District, Mt. Sakurajima", "The Review Committee of the Basic Plan for Sakurajima Volcano Sago Environment Management", and others.

For example, in the Review Committee of Road Landscape in the Furusato District, the plan was revised after reviewing our comments. We stated that during the road expansion work, there is a possibility that the cross sections of the lava which was poured out during the Edo

Period may be exposed. After we pointed out that keeping the cross sections exposed would have an educational and tourism benefit, the original plan to cover the slope with vegetation was changed to keep the exposed surface of the lava cross section, and install a signboard. This is just one example of applying the eco-museum concept in a specific context .

5. Issues

In order to operate an eco-museum, strong management organization and fund raising become inevitable. In order to allay this problem, we are now in preparation for establishing an NPO (Non-Profit Organization), as the main body to implement the activities of the Sakurajima eco-museum. This NPO is scheduled to be approved in March 2005. We are now considering the use of consigned project works related to community development and/or "designated administration systems" for funding. The designated administration system allows shifting the consignment of public facilities management from public organizations such as foundations and public corporations, to private companies or NPOs. On Mt. Sakurajima, there is the Sakurajima International Volcanic Sabo Center, managed by the Ministry of Land, Infrastructure and Transport; and the Sakurajima Visitor Center, managed by the Kagoshima Prefectural Government. These facilities have common problems such as few visitors, no interpreters, no special events or plans, and/or a lack of collaboration with local community. There is a great potential for an NPO with steady achievements to be nominated as "designated administrator" and conduct the consigned management of these facilities. By using these organizations as financial source, and if we are able to establish the Sakurajima Eco-Museum thus strengthening the collaboration between existing facilities and the local community, this would provide a leading-edge example of building a community resistant to disaster under private sector initiative.

However, this collaboration project with the government may not continue forever. Therefore, it is of inevitable necessity to gain profits by implementing our own projects. As a measure to raise funds by utilizing the know-how of an eco-museum, eco-tour guiding for tourists may be a possibility. The most important future issue is to create a system for stable management.

6. Summary

We have conducted museum activities by applying the concept of an eco-museum where the whole region is regarded as a museum and actual things are preserved, exhibited and explained on the site. We have accumulated the activities aiming at building a community resistant to disasters. Through our activities the following points became more succinct.

(a) The concept of an eco-museum is an effective measure for conveying the disaster risks of a region.

(b) An eco-museum has the expectations of governments to work as a tool for regional development and disaster prevention.

(c) In order to implement an eco-museum, the formation of an organization such as an NPO is necessary. Stable management can be developed through collaborated works with governments

(d) The issue of the future eco-museum would be that of raising fund through museum activities. Coordination

with tourism industry resources should also be considered.

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火山防災とまちづくり —火山をまるごと博物館とする方法—

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要 旨

「災害に強いまちづくり」を行う上で最も重要な課題の一つは、住民が地域の災害リスクを認知できるような環境を整えることだろう。本研究では、地域をまるごと博物館と考えるエコミュージアムのコンセプトを桜島で適用・実践し、その防災効果について検討した。これまで実践の結果、エコミュージアムのコンセプトは防災教育を持続的に行う社会教育システムの一つとして機能することが分かった。また、まちづくりや地域振興の方法の一つとして行政にも注目されつつあり、今後はエコミュージアムのコンセプトを適用した都市計画が策定されるであろう。エコミュージアムの運営は地域住民が主体となる必要があり、NPOなどの存在が重要である。今後はNPO等の組織づくりと運営のための財源確保が重要な課題である。

キーワード: エコミュージアム, まちづくり, 教育, NPO