

Value provision and sustainability of long-established disaster heritage facilities: A comparative case study in Japan

Atsutoshi Oshima (Utsunomiya University, Japan)

INTRODUCTION

Japan is a disaster-prone society that has repeatedly faced diverse natural hazards, including earthquakes, tsunamis, volcanic eruptions, and torrential rainfall. In this context, disaster heritage facilities have been developed throughout the country to pass on memories of disasters and their lessons to future generations. Since the Great East Japan Earthquake of 2011, these facilities have expanded and have come to be positioned as disaster heritage hubs and networks (Reconstruction Agency, n.d.; Reconstruction Agency, 2025). At the same time, facilities established more than 10 years ago, and in some cases more than 20 years ago, now face declining visitor numbers, the aging of storytellers, and rising renewal and operating costs. Accordingly, the central issue has shifted from “establishing facilities” to “renewing and sustaining their value over time” (Di Pietro et al., 2014).

Previous studies have discussed disaster museums and disaster heritage facilities in terms of memory transmission, learning effects, and the ethical tensions associated with dark tourism (Sakamoto & Yamori, 2010; Stone, 2006; Lennon, 2017). Recent Japanese research has also examined visitors’ purposes, learning effects, and the practical utilization of disaster heritage facilities related to the Great East Japan Earthquake (Watanabe et al., 2021). However, much of this work has focused on memory transmission or learning effects, without offering a comparative framework that integrates educational and training demand, regional and tourism linkages, and long-term value renewal. In particular, how learning objectives should be focused and continuously updated through operational routines remains underexplored.

Against this background, this study aims to clarify, through comparative case analysis, what core values long-established disaster heritage facilities seek to present and what mechanisms and challenges shape the sustainability of those values. Specifically, it addresses two research questions. First, what core values do disaster heritage facilities seek to present? Second, what mechanisms support the sustainability of those values, and what challenges arise in long-term operation? In this paper, “core value” is defined as learning value that connects understanding disasters and deriving lessons from them to future disaster risk reduction action.

METHOD

This study adopts a qualitative comparative case study design to examine value provision, sustainability mechanisms, and long-term operational challenges in disaster heritage facilities. The objective is not exhaustive classification but clarification of shared issues and cross-case differences in sustainability logics (Baxter & Jack, 2008).

Three facilities established before the Great East Japan Earthquake of 2011 and operated for more than 20 years were selected as cases. Specifically, the cases are the Unzen Disaster Memorial Hall (hereafter, Unzen), a volcano disaster museum in Nagasaki Prefecture; the Disaster Reduction and Human Renovation Institution (hereafter, Kobe), an urban disaster museum and learning/training institution in Kobe; and the Nojima Fault Preservation Museum (hereafter, Hokudan), a fault-preservation facility on Awaji Island (Unzen Disaster Memorial Hall, n.d.; Disaster Reduction and Human Renovation Institution, n.d.; Nojima Fault Preservation Museum, n.d.). These facilities differ in disaster type, location, governance, and exhibit characteristics, offering sufficient diversity for comparison.

The four analytical perspectives were: (1) the intent of value provision; (2) the configuration of exhibits, narratives, and experiences; (3) the institutionalization of learning demand through school education and professional training; and (4) embedding in regional and tourism contexts through local

resources and visitor flows. These perspectives allow sustainability to be examined through both internal learning design and external linkages.

The data were based on site observations, official documents, annual reports, exhibit guides, and publicly available information on exhibits and facility design (Unzen Disaster Memorial Hall, n.d.; Disaster Reduction and Human Renovation Institution, n.d.; Nojima Fault Preservation Museum, n.d.). All cases were organized through a common framework and compared in terms of value provision, demand maintenance, content renewal, and regional linkage.

FINDINGS

The comparative analysis confirmed that all three facilities seek to present learning value that connects disaster understanding with the derivation of lessons, while explicitly emphasizing learning for disaster prevention and mitigation and the transmission of lessons. In this sense, disaster heritage facilities are conceived not merely as places where past events are preserved and displayed, but also as places that provide visitors with opportunities to learn about disasters and connect that learning to future action. This finding is consistent with previous research that has understood disaster museums as sites of memory transmission (Sakamoto & Yamori, 2010). At the same time, however, within the scope of our site observations, there were instances in which exhibits, narratives, and digital content remained at the level of explaining what had happened, without sufficiently focusing on the learning objective of what lesson should most critically be conveyed. Content obsolescence, delays in re-editing and reconfiguring materials, and the insufficient evaluation of digital initiatives were also identified as challenges in renewing value during the long-term operational phase.

The analysis suggests that three factors interact in sustaining value. The first is the institutionalization of educational and training demand. In Kobe in particular, linkages with school education and professional training appear to support continued use, and repeated use of the facility as an educational resource seems to contribute to sustainability. This observation is consistent with prior research that highlights the learning effects and practical usefulness of disaster heritage facilities (Watanabe et al., 2021). The second factor is the phased renewal of exhibits and narratives. Here, it was suggested that while the “core” of the disaster—facts, relics, and testimonies—should be retained, surrounding interpretations and learning materials need to remain open to renewal in order to respond to changes in social interest and learning needs over time. The third factor is embedding within regional and tourism contexts. In Unzen, efforts were observed to connect learning with local resources and surrounding tourism elements, while in Hokudan, opportunities for visitation were secured by positioning the experiential impact of preserved physical relics within tourism circulation.

Furthermore, in facilities where more than 20 years have passed since the disaster, the aging and decline of storytellers and guides able to speak directly from lived experience are producing structural constraints on transmission that relies on first-hand narratives. Under such conditions, it becomes important not merely to maintain transmission, but to re-edit exhibits and learning materials so as to express more precisely what should be conveyed as the “core.” Based on- 5 - this comparison, Kobe can be characterized as an “education/training-centered” type, Unzen as a “learning–regional linkage” type, and Hokudan as a “relic preservation–tourism hub” type. These differences indicate that the sustainability of disaster heritage facilities is not determined by a single factor, but rather is constituted by different combinations of internalization, which anchors learning demand within the institution, and externalization, which opens the facility outward toward regional and tourism contexts.

CONCLUSION

The findings highlight the importance of clarifying the core value that each long-established disaster heritage facility seeks to present. Disaster heritage facilities should be reconsidered not simply as places that record and display past disasters, but as places that provide learning value by connecting disaster understanding and the extraction of lessons to future disaster risk reduction action. To achieve this, exhibits, narratives, experiences, and digital elements must be designed in alignment with the learning objective to be conveyed. Furthermore, this study suggests that the sustainability of disaster heritage facilities can be explained through the balance between “internalization,” which embeds educational

and training demand within the institution, and “externalization,” which opens the facility’s value outward through linkages with local resources and tourism flows. In this sense, disaster heritage facilities can be positioned as quasi-tourism infrastructure embedded in regional contexts. This perspective can also be linked to broader arguments that tourism-related resources should be understood not as isolated attractions but in relation to learning, co-creation, and regional linkage (Oshima, 2026).

From a practical perspective, long-established disaster heritage facilities need not maintain exhibits, learning materials, and digital initiatives as fixed entities, but rather reconstruct and re-edit them continuously. In particular, as storytellers age and the transmission of first-hand experience becomes increasingly difficult, the focusing of learning objectives and the redesign of the expressions through which they are conveyed will become even more important. Digital initiatives, moreover, can easily become ends in themselves; unless they are aligned with learning objectives and accompanied by appropriate evaluation, they are unlikely to deepen understanding or connect learning to action. Accordingly, facility management should incorporate a continuous improvement cycle of clarifying learning objectives, designing expressions, evaluating effectiveness, and improving practice. In addition, rather than treating facilities as isolated commemorative or exhibition spaces, they should be positioned within relationships with education, regional collaboration, and tourism contexts. This is also consistent with the fact that disaster heritage facilities in Japan have increasingly been institutionally positioned as shared resources for the transmission of lessons and preparedness (Reconstruction Agency, n.d.; Reconstruction Agency, 2025).

As a future task, it will be necessary to examine more empirically how the balance between internalization and externalization relates to facility outcomes and sustainability by combining visitor behavior data with operational indicators. Since this paper is an exploratory examination based on a comparison of three cases, further refinement of a long-term operational model for disaster heritage facilities will require comparative analysis of additional facilities with different disaster types and regional conditions.

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