

Realizing Education for Sustainable Development in Japan: The Case of Nishinomiya City¹

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Abstract

Various approaches have been advocated and practiced to address sustainable development. Among these, education has been recognized as one of the key measures to achieving sustainability. In Nishinomiya, Japan, education for sustainable development (ESD) has been established through the Learning and Ecological Activities Foundation for Children (LEAF), a nonprofit organization whose activities have been adopted by the Ministry of the Environment as the model for Japanese ESD projects nation-wide. LEAF aims to establish mutual learning programs through various types of activities. Through an examination of LEAF initiatives, key elements for achieving sustainable development are explored and analyzed in relation to the UNESCO framework for implementing ESD (UNESCO, 2003). The paper suggests that a mutual learning environment is a key element in achieving sustainable development.

Introduction

Various approaches have been advocated and practiced to address sustainable development. Among these, education has been recognized as one of the key measures for achieving sustainability (UN, 1992; UNESCO, 2005; WCED, 1987), particularly since the World Commission on Environment and Development (WCED) published *Our Common Future* in 1987. In supporting the global initiative for Education for Sustainable Development (ESD), the Japanese government has been an active advocate in stressing the importance of combining sustainable development and education by establishing a number of ESD programs across the country (Japan Environmental Education Forum, 2000). Among these, the Learning and Ecological Activities Foundation for Children (LEAF) initiative based in the city of Nishinomiya has served as a particularly influential model; its predecessor, the Earth Watching Club (EWC), was adopted by the Japanese Ministry of the Environment in 1995 as the nation-wide environmental education program. Its membership currently numbers over half a million persons.

The purpose of this paper is to investigate the key elements necessary for realizing ESD by examining the case of a successful program in Nishinomiya City. The paper begins by presenting a brief overview of the historical context of ESD, then introduces LEAF within this context. By examining LEAF's various initiatives, key elements for achieving sustainable development are explored and analyzed in relation to the UNESCO framework for implementing ESD (UNESCO, 2003). The case suggests that creating a mutual learning environment is central to achieving sustainable development.

Background

The concept of sustainable development first emerged in the 1980s with the well-known WCED publication *Our Common Future* (1987), and in response to a growing awareness of the need to balance economic and social progress with concern for the environment and the exploitation of natural resources. The Commission defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987, p. 47).

The first time that the sustainable development concept formally met education was at the UN Conference on Environment and Development in 1992. The conference gave high priority to the role of education in pursuing the kind of development that would respect and nurture the natural environment. In particular, Chapter 36 of Agenda 21 emphasized that education is critical for promoting sustainable development and improving the capacity of people to address environment and development issues (UN, 1992).

The Johannesburg Summit in 2002 broadened the vision of sustainable development and re-affirmed the educational objectives of the Millennium Development Goals (UN, 2000) and the Dakar Framework for Action (UNESCO, 2000). The Summit proposed a Decade of Education for Sustainable Development, with UNESCO spearheading the initiative. In December 2002, the United Nations General Assembly's 57th Session proclaimed the Decade for the period of 2005 to 2014.

According to UNESCO, the vision of ESD is to realize "a world where everyone has the opportunity to benefit from quality education and learn the values, behavior and lifestyles required for a sustainable future and for positive societal transformation" (UNESCO, 2005, p. 4). In addition, UNESCO states that ESD has four major domains: (1) basic education; (2) reorienting existing education programs; (3) developing public awareness and understanding of sustainability; and (4) training (UNESCO, 2003). Here, basic education does not mean simply increasing basic literacy and numeracy; rather, it entails sharing knowledge, skills, values and perspectives throughout a lifetime of learning for public participation and community decision-making to achieve sustainability (UNESCO, 2003). Reorienting existing education programs requires transdisciplinary understandings of social, economic and environmental sustainability. Training implies that all sectors of the workforce can and should contribute to local, regional and national sustainability. In particular, UNESCO states the following regarding training: "Business and industry are thus key sites for on-going vocational and professional training so that all sectors of the workforce have the knowledge and skills necessary to make decisions and perform their work in a sustainable manner" (UNESCO, 2003, p. 5).

Given the breadth of this vision, a universal model of education for sustainable development does not exist. While there may be general agreement on the concept of ESD, there will be nuanced differences according to local contexts, priorities and approaches. Regardless of these variations, however, ESD seeks to provide an environment where children, youth, the elderly, and other stakeholders, such as nonprofit organizations (NPOs), the public sector, and the private sector, can mutually

learn about and transfer knowledge and values for sustainable development. The case of LEAF in Nishinomiya provides an illustration of how one Japanese city has attempted to tackle these issues to implement an ESD model anchored in a holistic approach to economic, social, and environmental understanding and the principle of mutual learning.

Methodology

This case study is the result of research conducted in Nishinomiya City between June 2004 and March 2005, and is based primarily on data collected through participant observation and interviews. In order to observe the day to day activities and decision-making that took place, the authors participated in the Environmental Learning City Steering Committee of Nishinomiya, the working group initiated by LEAF to promote environmental learning in Nishinomiya. Interviews were conducted with members of LEAF and officers of Nishinomiya regarding various environmental learning activities. In particular, data were collected through a number of interviews with Mr. Masayoshi Ogawa who launched EWC, the predecessor of LEAF, in Nishinomiya and established the Bureau of Environmental Learning city project in the Nishinomiya City Hall. Analysis of local and national documents regarding environmental education and education for sustainable development, various LEAF publications, and other related literatures were examined in order to survey the environmental learning activities promoted by LEAF. Data were then compared and analyzed with respect to the definition and objectives of ESD, drawn from the United Nations Decade of Education for Sustainable Development (January 2005–December 2014): Framework for a Draft International Implementation Scheme (UNESCO, 2003).

The Case of ESD in Nishinomiya City

Nishinomiya City

The city of Nishinomiya, with a population of approximately 450,000 and an area of 100.18 sq km, lies between Osaka and Kobe in the southeastern part of the Hyogo Prefecture. This is a city where, in 1962, community and local businesses, especially Sake brewing industries, protested against the establishment of petroleum complexes and waterfront land reclamation schemes in order to conserve the quality of water in the community. Influenced by an increasing worldwide concern over environmental issues, a community-based environmental learning project called the Earth Watching Club (EWC) was launched in 1992 through the initiative of Mr. Masayoshi Ogawa of the Nishinomiya Municipal Government. The focus of this environmental program was activities targeting children and youths.

The Great Hanshin-Awaji Earthquake of 1995 that resulted in over 6,000 casualties, was a turning point for community-based environmental learning projects such as EWC, which began to be perceived not only as effective tools for tackling environmental issues, but also for issues such as crime and natural disaster reduction with capacity building at the local level for disaster preparedness. As a result, the concepts of EWC were further developed and in 1998 led to the birth of a nonprofit organization called Learning and Ecological Activities Foundation for Children (LEAF), whose aim is to contribute to the development of a sustainable society by building partnerships among citizens, businesses, and the local government (LEAF, 2004).

Overview of LEAF

To achieve its stated goal of developing a sustainable society, LEAF initiated environmental learning activities at schools and in local communities, by targeting a wide range of citizens (LEAF, 2004). In particular, they focus on youth and children as agents of change who will shape the future of their community. LEAF's approach to realizing this goal encompasses (1) the establishment of partnerships with various civic groups, the private sector, and government agencies; (2) development of respect for the environment, including nature and culture; and (3) cultivation of a "self-learning ability" through which the individual's capacity to learn independently from the assistance of educational institutions is enhanced and extended to the informal arena of the household, the school, and the community. Specifically, LEAF aims to establish a system that enables people relatively unconcerned with environmental issues to participate in activities of environmental learning through various public events targeting a mass audience. Through their environmental learning activities, LEAF not only seeks to raise people's awareness of environmental issues, but also awareness about community development.

LEAF's operations are supported entirely by external funding, such as donations by members and corporations, as well as national and local government trust funds. Acknowledged as one of the most successful models of practice, LEAF was awarded the 5th Green Purchasing Award in 2002 and the Environmental Grand Prix 2004 for Local Municipalities from the Japanese government.

Initiatives of LEAF

LEAF's various activities can be categorized into five types: (1) community-based education, (2) nature experience activities, (3) mutual learning programs, (4) policy relevance activities, and (5) global partnership. The following section provides an overview of these and cites examples of activities under each category.

Community-based education. Through their community-based education programs, LEAF invites participants to learn about both global and local environments through active communication at the local level. One of the projects in this category is called the Eco-Card. This project aims to forge links between school, family, and community through so-called Eco-Actions. All elementary school children in Nishinomiya (24,000 enrollment) receive an Eco-Card annually. When children take part in environmentally friendly activities (Eco-Actions), such as purchasing an eco-friendly product or separating recyclable goods in the community, they get a stamp from one of 1,500 Eco-Stamp Holders, such as local school institutions, stationery shops, the City Hall, and any other institution or adult who is part of the program. After collecting more than 10 eco-stamps on their Eco-Card, children are awarded the title of Earth Ranger for their eco-friendly actions. Over 2,000 children are authorized as Earth Rangers each year. In 2004, 2,048 Earth Rangers were delegated in Nishinomiya City alone, and 82,300 were delegated throughout Japan in the same year (Japanese Ministry of the Environment, 2005).

What is interesting about this activity is that these Eco-Stamp Holders decide by themselves whether or not an action by a child should be rewarded as an Eco-Action. Thus, while children actively search for what might be considered Eco-Actions, the

stamp holders must also continue to learn and develop their ideas on what can be determined as Eco-Actions.

The Eco-Card program is further tailored for each segment of the school population. For example, in order to collect stamps, third and fourth grade students must conduct research and interviews with various people from the public and private sectors concerning environmental issues. The information gathered from these interviews are shared with the community through the Eco-Messenger program, which is a student-hosted radio show aired on a local FM station.

In collaboration with schools, LEAF organizes special classes where students learn about environmental issues from different perspectives. One such class is called Legacy Tellers in which the elderly of the community talk about the environment when they were young. By listening to what these Legacy Tellers have experienced, children can compare environmental conditions between the present and the past. Also, children can learn how the natural environment has changed by taking short excursions, called town-watch walks, to various local sites with the Legacy Tellers (LEAF, 2004a).

Nature experience activities. Nature experience activities allow children to experience the natural environment of their community. For example, the Miyamizu Junior Nature Observation Activities, a program entrusted by the Nishinomiya Board of Education, gives children the opportunity to observe the mountains, rivers and sea in Nishinomiya through school excursions to these sites. Another project allows children to learn about nature in the mountains through hands-on games and exploratory activities that draw from aspects of the natural environment. Some of these pursuits incorporate the Legacy Tellers through on-site activities that demonstrate how the elders interacted with the natural environment in their youth

LEAF organizes training seminars on nature experience activities for community leaders from all over Japan. After the training seminars, leaders are encouraged to develop nature experience activities for their own communities.

Involvement of the workforce. To encourage collaboration between the public and private sectors, LEAF provides opportunities for corporations to become engaged in developing environmental learning programs for elementary and junior high school students. Corporations participate in the project through six different working groups whose themes include clothing, food, housing, energy, eco-friendly stationery, and bottles. Thus corporate employees at various levels are afforded an opportunity to learn about environmental issues through their presentations to children on environmentally conscious products.

Policy relevant activities. LEAF also actively involves itself with policy relevant activities that influence municipal development polices. For example, in order to reflect the views of the local community to the policy making level, LEAF conducted a Citizens' Nature Survey and a Citizens' Awareness Poll (City of Nishinomiya, 2003a; 2005). Based on its survey and poll of 5,085 people, including children and youth, LEAF prepared a report that represented the opinions of the local community. The report served as the driving force for the municipal government's revision of environmental policies and led to the

establishment of the new Nishinomiya Environmental Plan and Nishinomiya City Ordinance on city management, both of which were enacted in March 2005. The Ordinance regulates, with legally-binding force, day-to-day activities that are not in line with environmental guidelines.

The format of the survey and poll also succeeded in stimulating and increasing public awareness on nature issues. They were designed in such a way that those who were surveyed, numbering 3,993 teenagers and others ranging in age from 7 to 81, had to investigate and report on local insects and plants in the Nishinomiya vicinity. In doing so, the survey and poll stimulated participants' awareness on nature, and thus their mind-set toward environmental issues. The Nishinomiya municipality has developed a web site with the results of the surveys and polls conducted in 1991 and 2003, and people can go online to learn about past and current conditions of the natural environment in Nishinomiya City (City of Nishinomiya, 2003b). According to the results of the survey, those who participated reported a deeper understanding and appreciation of the local natural environment, including their knowledge of the fish, birds, insects, and plants of Nishinomiya.

In order to promote local participation and involvement in shaping regional development policies by the municipal government, LEAF also supported the establishment of the Environmental Learning City Steering Committee of Nishinomiya City, which consists of community leaders and representatives of the private and public sectors. With the involvement of this committee, in 2003 Nishinomiya was the first city in Japan to be declared an "Environmental Learning City" (LEAF, 2004a).

Global partnership. LEAF develops projects beyond the domestic level to foster global partnership among children around the world. It organizes the Junior Eco-Club Asia-Pacific Conference each year. In addition, LEAF has created The Chikyu Kids Environmental Network, a database of children's environmental activities around the world, spanning over 80 countries. LEAF has also coordinated joint projects between Nishinomiya and Burlington, Vermont. These have included such activities as promoting education for sustainability through community partnerships (Institute of Sustainable Communities, 2002).

Analysis of LEAF Program

The four pillars of ESD, as outlined by UNESCO (2003) and described here earlier, provide a useful framework through which to reflect on the accomplishments of LEAF towards achieving ESD. This section discusses LEAF initiatives in light of these domains of action.

Basic education

Whereas traditional educational methods in Japan have served primarily to increase basic literacy and numeracy among children, the activities of LEAF have embraced basic education and extended beyond to impart an understanding of the nuanced interaction between the economic, social, and environmental dimensions central to sustainable development. Fundamental to this process is the development of the self-learning capacities of a range of participants, as well as the sharing of knowledge, values, and skills towards community decision-making and action involving a variety of

stakeholders. The Eco-Card program, for example, as well as the establishment of the Environmental Learning City Steering Committee are illustrations of how providing a milieu in which sharing knowledge and values between school children and other community members can extend learning beyond the classroom into the informal sector. In addition, LEAF's introduction of the Citizens' Nature Survey and the Citizens' Awareness Poll has encouraged residents to learn more about their local environment.

Developing public awareness and understanding of sustainability

LEAF's engagement of a wide range of citizens has been a critical feature in implementing ESD. Youth and children, commonly viewed as the agents of behavioral change, are typical targets of educational programs. However, LEAF's outreach has extended beyond these participants to sectors of the workforce and the community. Seminars organized in collaboration with private companies have shown that such activities are effective, not only in raising awareness of those students involved, but also in helping employees within such companies to become more environmentally conscious and aware of important elements of sustainable development, such as the intricate interaction between economic activities and social and environmental consequences. This leads to mutual learning opportunities for both students and the participating corporate employees.

In 2004, approximately 2,000 Earth Rangers were delegated through the Eco-Card project and about 90 private companies engaged in LEAF's activities. This increase in participation is one indicator that LEAF has been successful in raising public awareness through its various activities. Furthermore, the use of a public radio station as one of the rewards for the Eco-Card activity, has proven to be an effective method for raising public awareness at the local level. To date, more than 1,400 elementary students have joined in radio programs which they have developed themselves. In addition, introducing children to environmental learning activities from various parts of the world, organizing international conferences, and building a global database on youth environmental networks and activities has expanded the potential for developing awareness and global friendship among children in over 80 countries. Public awareness is therefore an integral component of LEAF activities.

Training

LEAF has actively sought to develop the training component of its initiatives. To this end, LEAF has organized seminars on environmental learning for various groups of citizens and a variety of stakeholders, such as children, youths, adults, the elderly, school teachers, government officers and private companies, in an effort to enhance the sharing of knowledge, skills, and values for sustainable development at the local level. The seminars and environmental learning programs organized in collaboration with the private sector for elementary students have gained much popularity. At present, approximately 90 private companies have joined in the LEAF program. Such activities illustrate the program's engagement in providing continuous training opportunities.

Reorienting existing education programs

At present, LEAF activities do not touch upon the reorientation of existing school curricula, which is considered one of the core elements in realizing ESD (UNESCO, 2005). Although the majority of LEAF activities take place in school, they are not

incorporated into the school curriculum itself. LEAF involves school teachers, various civil groups, and the private sector; however, mere involvement may not be sufficient to produce a lasting impact on the community. Integrating these community-based environmental learning activities into the school curriculum could provide further reinforcement and development of core concepts and skills.

Analyzing LEAF activities within the UNESCO framework for ESD provides confirmation of the components of an effective program. However, it also reveals areas for further development. The first of these is the need to incorporate ESD programs into formal curricula for reinforcement purposes. Second, while LEAF is involved in several public awareness campaigns, more can be done. For example, the Eco-Messenger program makes excellent use of a local radio station; however, exposure to the public is still limited as the program is not aired regularly. Not only should there be an increase in the frequency of the radio show, but it should also target a wider audience, to include adolescents and adults. Finally, educating the media is of crucial importance. Involving media providers themselves into the ESD program may encourage them to incorporate sustainable development issues into a larger number of awareness programs.

Our analysis of LEAF ESD activities suggests that, while there are several components for implementing ESD, the most important aspect that threads across all four domains of the UNESCO framework, is establishing a mutual learning environment. Mutual learning helps develop public awareness of social, economic, and environmental issues and leads to establishing networks of various stakeholders including students, local residents, local governments, NPOs, and the private sector, allowing them to discuss and address the issues at the same table. Such an environment promotes participation of stakeholders and a sustainable intergenerational dialogue. Furthermore, it improves the capacity of participants to learn and address environment and development issues, thus avoiding a common pitfall for many ESD programs--the lack of common terminology and vision, and clear channels of communication.

Conclusion

The international movement for sustainable development, as represented by various conferences and symposia, has highlighted the need for effective tools to realize sustainable development. Education is now recognized as a key partner in striving for sustainable development. Although the proposed objectives of the Decade for ESD and the vision for ESD have been broadly defined, the analysis of LEAF activities underscores the importance of creating a mutual learning environment involving a variety of stakeholders. Unless people interact, learn, and transfer knowledge and values to one another, it will be extremely difficult to build the capacity to realize a sustainable society. An efficient way to realize a sustainable society is to build such capacity at the local level, rather than through top-down decisions and regulations. LEAF provides such an environment for members of the public and private sectors, including children, youth, the elderly, and other stakeholders such as NPOs.

UNESCO's vision of ESD includes both formal and informal education. In this respect, however, the LEAF program faces the challenge of reorienting school curricula. LEAF activities rely on the participation of people who are already interested in ESD to some extent. At present, they do not reach out to those individuals who are unaware of the

issues of sustainable development. There is also a problem of the government's vertical administrative structure, where officers working on city planning and economic development are indifferent to environmental learning. Thus, it is important to institutionalize ESD at the government administrative level so that more people will be given opportunities to participate in ESD programs. In order to change existing school curricula and institutionalize ESD, further discussion with the municipal government and its policy-makers is needed.

While this examination of LEAF suggests several effective practical features for a working ESD model based on the broadly defined and agreed upon theoretical principles of the Decade for ESD, further comparative study of ESD initiatives in Japan and elsewhere could yield interesting findings regarding common core elements of successful ESD program design across varying local contexts. Such findings could point to interesting generalizable models for local modification and adoption. It is hoped that the current case study contributes in part to this end.

Notes

1 The opinions expressed in this article are those of the authors and do not necessarily reflect the position of the United Nations University (UNU). The authors are grateful to LEAF and members of the Environmental Learning City Steering Committee of Nishinomiya, especially Mr. Masayoshi Ogawa for providing information about the activities of LEAF and the municipality of Nishinomiya.

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