**Environmental Education in Taiwan, with Comparisons to China**

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**Introduction**

An educated population is a prerequisite for a functioning modern industrial society, and education on the environment is especially necessary for states hoping to mitigate and adapt to environmental change and crises.

Environmental education (EE, and education for sustainable development [ESD]) broadly has three objectives: 1) growth in awareness of issues and problems concerning the environment, 2) increased knowledge about the environment, and 3) changes in attitudes and behaviors. EE and ESD have both formal and non-formal components. The formal elements of environmental education are the responsibility of a nation’s K-12 school system, colleges and universities, and teacher training programs. Non-formal elements in democratic nations rely on the private or non-profit sectors primarily, and include environmental non-governmental organizations (NGOs) and the media. In authoritarian polities such as China, the state actively monitors NGOs and either owns or heavily censors the press. Finally, governments educate the public on environmental issues and problems in both democratic and authoritarian nations.

 In this paper, we concentrate on EE and ESD in Taiwan, because this small, politically beleaguered nation-state industrialized earlier than China, and reaction to industrialization’s environmentally degrading effects prompted establishment of many environmental programs and organizations. They were in place for several years while environmental issues were just under consideration and programs being developed in mainland China.

 Space and time limitations do not allow a comprehensive treatment of EE and ESD in either Taiwan or China. Instead, we focus first on a concise comparison of K-12 environmental education in the two states and briefly discuss teacher training systems. The heart of the paper is a treatment of environmental NGOs in terms of their characteristics (such as degree in specialization and professionalization and orientation toward grass roots activities). This is based on the NGO environment of Taiwan’s robust civil society, with relevant comparisons to China’s NGOs. Then we relate instances of NGO contributions to EE and ESD in both countries. The final section considers the role of participation, protest and resistance in Taiwan’s EE and ESD programs—all of which are legitimate in this environment of democracy and contrast strongly with China’s less permissive milieu.

 This is a working paper, and is primarily based on interviews with participants in the process—mostly representatives of NGOs but also professional observers (including scholars) and a few government officials—who are not identified (as many asked to remain anonymous) but are often linked in the endnotes to a type of organization.[[1]](#endnote-1)

**Formal Environmental Education in Taiwan and China**

Notwithstanding significant differences in type of political system and orientations toward western knowledge, there appear to be more commonalities than differences in the formal EE/ESD systems of Taiwan and China. After all, they share a common origin in the educational system of China before Japan colonized China (1895-1945) and in the 1945-49 period, however brief that was. Yet, the 50-year history of Japanese colonialism in Taiwan, and a shorter period of USSR influence on mainland China are responsible for important dissimilarities. Both states reacted to environmental crises and developed programs incorporating many elements of the emerging, western-state driven consensus on environmental education.

 **EE in Taiwan’s K-12 Schools.** Although EE had been taught in the schools in the 1980s[[2]](#endnote-2) and 1990s, a national curriculum framework including it was not adopted until 2000. Of the seven subjects uniformly taught from elementary through junior middle school, the science/technology area, including earth science and biology, contains most emphasis on EE and ESD. Environmental education is one of the six important sub-issue areas incorporated in the curriculum.

 The curriculum in sciences and geography focuses on development of awareness and the accumulation of knowledge. Textbooks provide adequate materials for these purposes, but teachers need to supplement textbooks with respect to the objective of changing attitudes and behavior. For example, the standard texts do not treat saving and conserving energy or reducing the carbon footprint. By the time students leave middle school, they will have spent approximately 7 percent of their school time on subjects related to the environment.

 On June 5, 2010, the Legislative Yuan adopted the Environmental Education Law, which is a significant expansion of EE and ESD in Taiwan. The law requires that public officials, business firms, and universities engage in four hours of environmental education a year. As President Ma Ying-jeou remarked, even he would have to meet this requirement. The law establishes a national environmental education fund to pay for the education and training, and it requires several kinds of certifications: for institutions that train environmental educators, for individuals who conduct teacher training, and for facilities and sites, for example environmental learning centers, where the training is done. The nature of training is quite flexible. Virtually all the organizational leaders we interviewed were enthusiastic about the law, but they had many questions as to how it would be implemented.

 **Teacher Training.** Upon its establishment in 1987, the Environmental Protection Administration (EPA) had an environmental education center, but in the early 1990s this function was transferred to environmental education centers at universities. The first was at Taiwan Normal University; later, centers were added in Taipei county, Taichung, Kaohsiung and Hualian.[[3]](#endnote-3) Their mission was to prepare teachers for elementary and secondary school instruction in EE and ESD.

 **EE in China’s Schools.** Environmental education programming began at the college/university level in China, as it did in Taiwan; national-level conferences and cues were more important. For example, the Chinese Association of Environmental Science, sponsored by the government, held the first conference on environmental education for K-12 schools in 1979. It recommended EE programs both at the primary and secondary level and called for trial programs. In 1985, the State Environmental Bureau (predecessor of today’s Ministry of Environmental Protection [MEP]) and the State Education Bureau (predecessor of the Ministry of Education [MOE]) urged sharing of trial project experiences nationwide. Six years later, in 1991, the State Education Commission made EE an elective course; in 1993 the commission required that contents of EE be added to teaching materials in the K-9 compulsory education program.

 By the mid-1990s, environmental education at the compulsory education stage meant that different subjects, such as mathematics, social studies, and science, were infused with environmental content. This may be more emphasized in China, especially in green schools, than it is in Taiwan. Nature study (*ziran*) was the core subject at the elementary level (now usually called science [*kexue*]), with a concentration on basic knowledge of plants and animals, food chains, air/water/soil, and biology, physics and chemistry. At the secondary level, the education program was more systematic and comprehensive in that it explicitly sought to imbue in students an environmental awareness, and engaged them in investigating environmental problems.[[4]](#endnote-4)

 In 2001 China established an EE model (influenced by Japan and Australia). This entailed development of guidance documents and guidelines by the Ministry of Education for the content and activities of EE from grades 1 through 12. In 2003, authorities activated the guidelines, which in the view of environmental educators are a unified curriculum.[[5]](#endnote-5)

 China’s great size and vast differences among regions are reflected in the fact that the national curriculum provides space for elements provided by provincial and local education bureaus. The curriculum allows substantial variety in lesson plan emphases including points on programs to preserve and protect the environment. Also, extra-curricular activities such as moral education projects appropriate for Young Pioneers may be mentioned.[[6]](#endnote-6)

 China too has an environmental education law, but only for Ninghsia, an autonomous area with the status of a province. The subject is studied by middle school students in the study period. The content of EE varies because of different provincial/local elements, but guidelines call for four hours every year. One expert, who has conducted teacher training on EE in several provinces, estimated that as many as 10 hours may be studied in elementary and middle school grades each semester.[[7]](#endnote-7) Teachers we interviewed in China thought that no more than 5 percent of a student’s education at school was informed by EE/ESD, a lesser amount than reported by teachers in Taiwan.

 **Training Teachers in China.** Formalized education for teachers began later in China than in Taiwan (1997-98) and progressed in fits-and-starts. The World Wide Fund for Nature (WWF) funded the first environmental education center at Beijing Normal University in the late 1990s. Its mandate was to conduct research and assist in teacher education, but to the present no required courses have been mandated for teachers of environmental education subjects (the same situation obtains in Taiwan). In the last decade, some 20 other universities have developed environmental education centers. While environmental education courses are popular in continuing education and science departments, to the present most teachers are educated through the relevant departments. The EE centers work with networks of teachers in their areas, and also independently prepare materials of use in courses where EE and ESD content fits well—such as science and social studies at the elementary level and biology, geography, physics, health and other subjects in secondary schools.

 NGOs, as we also note below, appear to be more involved in teacher training in China than in Taiwan. For example, the International Fund for Animal Welfare (IFAW), with the assistance of local environmental protection bureaus (EPBs), identifies interested and appropriate teachers, and with experts in EE training conducts three-day sessions in five cities. A main focus is Animal Action Week and assisting teachers to combine class sessions with extra-curricular activities. IFAW prepares materials for teachers to use in classes as well.[[8]](#endnote-8) Another international NGO, the Eco-Forestry Research Center, supports middle school EE activities in Baoshan and Nujiang (both in Yunnan Province). Its emphasis is building capacity of elementary and middle school teachers in special training sessions. Too, Conservation International (CI) has conducted teacher training in Shangralila, helping teachers develop student competitions in speech and art and in environmental communication (which would translate as “propaganda”).[[9]](#endnote-9)

 Differences in geographic size and economic development suggest that China’s problems in developing a uniform system of EE and ESD are far greater than Taiwan’s, notwithstanding the top-down nature of its educational programming. Another difference is even more important. In 2011, China retains the unified gate-keeping examination (the *dakao*) for entrance to colleges and universities, while Taiwan no longer mandates the *liankao*. Because high stakes examinations drive school curricula, and teachers emphasize only subjects included on the exam (of which EE/ESD are small parts), this would seem to give Taiwan a greater advantage in educating students in EE and ESD (because neither country mandates that students take an environmental education course in the compulsory education period). However, Beijing Normal University geography professor Wang Min argues that China’s *dakao* includes EE and ESD questions, which he has used to test the efficacy of environmental education programs. If this hypothesis is not disconfirmed, an incentive may develop in China to increase attention to EE in pivotal courses such as science at the elementary level, and geography and biology at the secondary level.

**General Characteristics of Taiwan’s Environmental NGOs**

The direction of educational change in China tends to be top-down, while in recent years Taiwan has fostered a number of bottom-up processes, and this certainly applies to environmental education. We treat NGOs at some length because in both China and Taiwan, they often facilitate grass roots EE programs and activities; they are a major part of non-formal education.

 We have observed just three dozen environmental organizations in Taiwan, which is a small number when one considers that the EPA records 200 NGOs engaged in environmental activities (156 are registered with the Ministry of Interior Affairs [with a focus on animal rights/welfare and resource conservation topics] and 44 with the EPA [most related to this agency’s mission of pollution control]).[[10]](#endnote-10)

 In China we have surveyed a larger number of environmental NGOs (about 70), over a somewhat longer period, but the circumstances for NGOs in China are fundamentally different from those in Taiwan. They developed later; the first, Friends of Nature (FON) was not established until 1995. (Taiwan’s first environmental NGO, the Wild Bird Society, formed in 1973, and at the onset of democratization in 1987-88, several currently powerful organizations [the Taiwan Environmental Protection Union or TEPU and the Taiwan Homemakers’ Union] had established roots.) Also, as political liberalization in China faltered after the Tiananmen event of 1989, state monitoring of social organizations increased. Even today, new organizations must file paperwork with the Ministry of Civil Affairs and solicit an agency or enterprise to act as their sponsor (or *po-po* [mother-in-law]). Given China’s geographic size and population density, and even under these constraints, the number of NGOs is obviously larger. In 2006 we estimated that there were between 40 and 50 national NGOs, situated in Beijing; about 120 college student environmental NGOs; approximately 35 international NGOs operating in different regions of China; nearly 350 government-organized NGOs (called GONGOs); and thousands of grassroots NGOs, most of which form in opposition to what are called LULUs (locally-unwanted-land uses).[[11]](#endnote-11)

 From the research conducted, we discuss six characteristics which apply to most of Taiwan’s environmental NGOs: They are institutionalizing, specialized and professionalizing; they have a volunteer basis, are self-sufficient and are linked to the socio-political environment. After each category in Taiwan, we estimate (provisionally and even speculatively) how China’s NGOs compare.

 **Institutionalization.** Institutionalization is an important stage in the development of social movements. It refers to a process of change in organizations as they age. They become adapted to their social environment and experienced in dealing with threats to their existence; surviving these challenges strengthens them. Many of the organizations formed in the 1980s to oppose local pollution sources, such as the Changhua County Nuisance Prevention Association (the organization behind the Lukang “rebellion”), have ceased to exist. They failed to develop attractive new missions and to continue to solicit new members when their original purpose was achieved. However, four of the NGOs we have studied—the Wild Bird Federation, Homemakers’ Union & Federation, TEPU, and the Beautiful Taiwan Foundation—are now completing their first generation and have demonstrated good survival instincts. Newer NGOs have yet to demonstrate this capability.

 Institutionalization also implies that the mission, policies and strategic plans of an organization have become routine guidelines for their officers and other employees. For example, TEPU has a vision committee to set goals and develop strategies for the implementation of its pollution-reduction targets. Results of the committee’s deliberations are applied to the daily activities of the union.

 Compared to environmental NGOs in other post-industrial nations, Taiwan’s are still relatively young. Those formed in the last decade are still untested. For this reason, we characterize them collectively as “institutionalizing.”

 In China, environmental NGOs are even younger than those in Taiwan, and their existence more precarious. Yet the oldest, FON, has survived the death of its founder, Liang Congjie. A number of organization heads were essentially one-person offices and particularly subject to vicissitudes in revenue; two of those we surveyed first in 2004 had closed by 2011. Overall and as expected, the degree of institutionalization of environmental NGOs in China is lower than in Taiwan.

 **Specialization.** Taiwan’s environmental NGOs are relatively specialized by area of environmental concern. A large number specialize in reducing pollution, for example efforts of TEPU to address air pollution and climate change effects, Heichao (Black Tide) to reduce ocean pollution, Tainan Teachers Association and Green Citizens’ Action Alliance to reduce river pollution, and the Homemakers’ Union to reduce waste. Several NGOs focus on the conservation of natural resources and protection of threatened ecosystems, such as the Society of Wilderness (SOW) and the Taiwan Academy of Ecology. Many groups specialize in the protection of different endangered or threatened species or the protection of animals generally, for example, the Environment & Animal Society of Taiwan (EAST), the Wild Bird Federation, TRAFFIC-Taipei, and the Animal Protection Association of R.O.C. Although TEPU has the longest history of opposing nuclear power plants, several other associations join it for demonstrations, such as the Green Citizens Action Alliance. Greenpeace is not greatly active in Taiwan but has introduced its campaign against GMOs, and the Green Formosa Front has a similar mission. Finally, some NGOs engage primarily in research and monitoring, such as the Taiwan Environmental Information Association and the Taiwan Watch Institute.

 There is relatively little overlap in membership of Taiwan’s environmental NGOs, and often they are criticized for their fragmentation. Yet coordination among them occurs for the celebration of environmental days: Earth Day, World Environment Day, Ocean Day, and the like. Too, ad hoc coalitions form with relative ease to oppose nuclear power development, large-scale petrochemical plant construction, and in response to environmental crises elsewhere, such as the parades and demonstrations after Japan’s nuclear reactor meltdown in March 2011.

 In the social movement literature, the final stage of development usually is portrayed as the formation of a political party (environmental, labor, womens) that shares in holding national power. In this respect, only a small number of social movements globally have met their objectives. In the case of Taiwan, there is a Green Party, but it is electorally marginal and does not represent all active environmental NGOs.

 The party formed in 1996 and elected a representative to the National Assembly,[[12]](#endnote-12) however his election had less to do with his party credentials then with his general name recognition. In the 2008 elections, less than 1 percent of voters opted for the Green Party candidates; in legislative elections at the end of 2010, the party fared somewhat better, its candidates winning 2.3 percent of the votes. The party claims 300 members including mostly young activists and students. Most of its non-electoral activities are for the purposes of resistance: to the fourth nuclear power plant (and in favor of eliminating the first three), to environmental practices of Taiwan’s large business corporations (by disrupting shareholders’ meetings), to forest harvesting (by members’ tying themselves to trees for a day), and to development and construction plans. The monkey-wrenching activities of party members attract little public support.

 Nor has the Democratic Progressive Party (DPP) been able to consolidate and monopolize environmental support. Although environmental activists strongly supported establishment of the DPP in 1986 and gave it most of their votes in succeeding elections, the performance of the DPP presidential administration from 2000 to 2008 dashed hopes that it would be Taiwan’s green governing party. Not only did President Chen fail to stop construction of the fourth nuclear power plant, but he also made alliances with the forces of economic development.

 In China, one sees similar patterns of specialization, although as in Taiwan, virtually every organization has an objective to advance EE and ESD. Several NGOs specialize in pollution reduction, such as Ma Jun’s Institute of Public & Environmental Affairs, which has drawn national and international attention through its monitoring of multinational firms that pollute waters. FON works on some land pollution issues, but does not specialize in them. SEE Ecological Association specializes in desertification. NGOs such as the Natural Resources Defense Council work on air pollution monitoring and reduction.

 Both national and provincial NGOs emphasize ecosystem and species preservation. In this area, international NGOs are especially prominent, including The Nature Conservancy (TNC), WWF, CI and the Wild Crane Foundation. Domestic NGOs too are involved, such as FON and the Global Environmental Institute. Greenpeace has six international campaigns, four of which it actively pursues in China: opposition to deforestation, GMOs, computer and other technology waste, and climate change. Perhaps because Greenpeace launched its campaigns nearly 10 years ago, it has pre-empted development of specialized organizations in these areas.

 Finally, as in Taiwan, environmental NGOs know of one another’s existence but remain fragmented. They coordinate symbolic events, such as Earth Day activities. They form ad hoc coalitions to counter proposed large-scale projects with likely adverse environmental consequences such as the Three Gorges and Nujiang dams. A permanent alliance of China’s environmental NGOs is out of the question under current political circumstances; it would be interpreted as a direct threat to regime survival. Similarly, no “green party” is likely to emerge.

 **Professionalization.** One of our respondents commented at length about the weakness of Taiwan’s environmental NGOs, complaining that they were amateurish and lacked the means to make a strong social impact.[[13]](#endnote-13) This observation probably applies well to many of the 200 registered NGOs in Taiwan today. However, the major environmental organizations all have full-time, paid staff, whose vocation is to do environmental work. The organizations are professionalizing and are a vibrant part of Taiwan’s non-profit sector.

 Most of the NGO staff we encountered had college degrees. Staff in charge of membership recruitment, organizational finance, and records-keeping tended to have business degrees. Many of the program staff had college- and graduate-level training in the natural sciences (for example, biology, zoology, chemistry), agriculture, engineering and even in environmental education.

 We estimate that environmental NGOs collectively employ nearly 1,000 people. On average, the typical office has fewer than 5 employees, but those with large memberships—such as the Society of Wilderness—have at least 40. Typically, environmental NGOs do not pay high salaries to staff members, and this is the case in Taiwan; however, it is possible to make a living out of environmental work.

 In China, a sharp line divides international NGOs from the rest. Each of the foreign organizations has a large, mostly professional staff. They are college-educated, trained in the natural or environmental sciences, and well-paid. Many staff members in TNC and WWF are non-Chinese who have worked in China for many years. Staff size of the global NGOs is larger than that of domestic NGOs. Greenpeace in 2011 was the largest, with 50 employees, but TNC and WWF come in as close seconds. Outside major cities, however, NGO staff often are amateurs and poorly trained if at all. This has been a focus of global NGOs in China—to enhance the institutional capacity of native NGOs.

 **Volunteer Base.** Most environmental NGOs in Taiwan are heavily reliant on volunteers to carry out activities: to recruit new members, to publicize activities, to stage parades and demonstrations, to guide tours and outdoor education events, to offer non-credit classes, and the like. Retaining old and recruiting new volunteers consumes much staff time, as does the training of volunteers for special programs. The larger NGOs have volunteer coordinators and established training programs. For example, the Society of Wilderness has volunteer groups for each of its twelve active committees. Over the years, the committees have brainstormed on ways to train volunteers to conduct programs; in the last few years, the organization has developed a formal curriculum and teaches a course for volunteers. It has the largest volunteer base—around 3,000—of any NGO in Taiwan.

 In one sense, it is easier to attract volunteers to environmental than to other social organizations, because the cause of environmentalism itself is enobling and provides a strong purposive incentive for membership. Activities of most environmental associations lead to the betterment of the environment (for example, pollution reduction), and this provides a meaningful psychological reward. Like other associations, environmental NGOs provide opportunities for friendship and camaraderie, which is a reason to join. A smaller number doubtless volunteer for these NGOs because of the status they may gain as an officer or eventually a director. Taiwan’s new Environmental Education Law (described above) may increase the volunteer base of some environmental NGOs significantly.

 Fewer of China’s national-level NGOs have volunteers. One exception is student, campus-based NGOs which are unlikely to have any staff. A second exception is the Jane Goodall Institute that established its “Roots & Shoots” program (found in nearly 100 countries) in Beijing in 2000. Throughout China now there are 600 volunteer groups, and the program director claims that in the last eight years the organization has worked with 100,000 students and trained 3,000 teachers. The staff train volunteers to work with students on activities largely designed by the groups—for example, how to save tigers, conserve water and the like. Jane Goodall visits China every year to hear reports of activities and award participants.[[14]](#endnote-14)

At the grassroots level, however, one finds many organizations that formed in response to LULUs, and volunteers are numerous. Yet there are few paid staff and most activists are amateurs and unpaid volunteers. A recent study points out that lack of specialized training, their amateur nature and funding problems are leading challenges to organizational survival. TNC in China works with the RARE program and its PRIDE project to raise leadership skills of volunteers and staff members of local NGOs. For about 10 years, its Li Jiang operation has trained nearly 100 individuals.[[15]](#endnote-15)

 **Self-Sufficiency.** Survival of NGOs depends on keeping the budget bottom line in the black. By nature, the organizations are not rich, and leaders need to solicit funding from various sources, and this too consumes a great deal of organizational time.

 Membership dues and donations are a large part of the budgets of most social organizations in Taiwan. SOW relies on dues and donations to defray one-third of its expenditures. The Animal Protection Association of R.O.C. has annual dues of NT $800 for its some 70 members; the secretary-general estimated that it was about 99 percent reliant on fund-raising.[[16]](#endnote-16) Its Pet Food Bank collects donations from those willing to contribute to the establishment of animal shelters and reduction of the number of stray dogs (estimated to number 440,000 throughout Taiwan); the association publishes names of contributors in its *Taiwan Animal News*. Taiwan’s laws favor survival of nonprofits, as citizens can deduct from their taxes when they make donations. Yet, as one of our respondents mentioned, far fewer contributions are made to Taiwan’s NGOs than to those elsewhere:

 Compare Taiwan and the U.S. on an economic scale. In the U.S., environmental

 organizations get about 2 percent of charitable contributions. In 2007 there were

 NT $42 billion in contributions only. Environmental NGOs didn’t receive more

 than 1/1,000th. From a fund-raising perspective this is problematical. We

 receive much less proportionally than is given in the U.S.[[17]](#endnote-17)

 Many environmental NGOs assess fees for the services they provide. The Taiwan Wild Bird Federation charges fees for its trips, a pattern followed by NGOs involved with wilderness preservation that conduct eco-tours. A number of environmental NGOs sell products to the public, which assists their balance sheets. An enterprise of the Homemakers’ Union sells an environmentally-friendly oil. The wilderness and animal preservation groups such as SOW and Wild Bird Federation sell greeting cards, posters, tote bags, and T-shirts from small shops in their headquarters. Research and monitoring organizations such as the Taiwan Watch Institute sell their publications; even the Green Formosa Front raises part of its revenue from publishing articles and books.

 In China, fund raising is difficult because the laws are less hospitable to donors (they do not yet allow write-offs for contributions to social organizations) than those in the U.S. or even Taiwan. International NGOs tend to have the best link with foreign multinationals because of their own foreign nature, yet this funding is unpredictable. Just two of the native NGOs we observed, one now defunct, had success in attracting domestic corporate sponsors. Also, only a few of the national-level NGOs charge fees or sell products to the public. As part of its Journalists Salon, the Green Earth Volunteers sells books.

 Most of the established environmental groups in Taiwan operate as if they were quasi-governments, and they perform functions for which government agencies compensate them. Agencies commissioning their endeavors include the Ministry of Education, the EPA, and the Council of Agriculture, among others. For example, the Environment & Animal Society of Taiwan (EAST) recently conducted animal welfare workshops for teachers, the expenses of which were paid for by the Ministry of Education. The content included animal welfare, ethics, local and national animal issues, human-animal relations, how to teach animals, and animals in the classroom.[[18]](#endnote-18) The Wild Bird Federation receives one-third of its funding from governments (Taipei city, Council of Agriculture, the EPA). It has conducted inspections and investigations for the Forestry Bureau of COA and done censuses of birds in city parks and districts of Taipei.[[19]](#endnote-19) For obvious reasons, the EPA is the largest financial supporter of environmental NGOs specializing in pollution reduction activities. The Beautiful Taiwan Foundation receives 70 to 80 percent of its financing from government, primarily the EPA, for its recycling programs and for seminars. Too, the director is compensated for serving as a member of the EPA Green Products Review Committee and the Recycling Committee.[[20]](#endnote-20)

 China’s GONGOs, such as the China Wildlife Conservation Association, are wholly funded by the government and instruments of it. A number of environmental NGOs receive funding and support from government agencies—primarily from the Ministry of Environmental Protection (MEP) and secondarily the State Forestry Administration. They have assisted MEP in its Green Schools (now more than 40,000) and green communities efforts. It is less clear, however, that the NGOs could be considered quasi-governments because of this support. The international NGOs all have memoranda of agreement with the government, which is the legal basis for their operations and activities in China. NGOs work with environmental protection bureaus (EPBs) at provincial and local levels and local governments too. Some, such as TNC have contacts with poverty alleviation offices of the Ministry of Commerce. Others, such as Ma Jun’s Institute, work with the Ministry of Water Resources. Yet others, such as Greenpeace, have linkages to the Ministry of Communications.

 Most of Taiwan’s foundations (and a few of the social organizations) receive grants from business firms. Private corporate donations pay for many of the cleanup activities of the Environmental Action Group of the Tainan Teachers Association. Business firms sponsor the social workers assisting SOW in its camping programs for low-income children. There are about 50 local animal protection organizations in Taiwan, and many of these receive support from local businesses. Corporate social responsibility (CSR) has become embedded in the ethic of many corporations in Taiwan, and with the exception of resistance organizations, environmental organizations often bend their activity agendas to benefit from corporate support.

 A smaller proportion of national and local NGOs in China receive funding from business firms. However, particularly entrepreneurial directors of organizations such as FON have found corporate sponsors for neighborhood recycling, pollution reduction, and poverty alleviation programs. One NGO stands out for its attempts to solicit funding from large Chinese corporations, the SEE Ecological Association (which works on campaigns to reduce desertification and the consequent dust storms affecting Beijing each year).

 Although Taiwan remains relatively isolated diplomatically, a few environmental NGOs have strong ties with international NGOs that assist them financially. Most dependent on such support are the branches of international NGOs, such as TRAFFIC. Its program agenda is determined regionally, and this influences the species of interest in international trade which are now monitored in Taiwan, such as sustainable trade in tuna, sharks, and illegal trade in soft-shelled turtles and parrot species.[[21]](#endnote-21) The Environmental Trust Center has contacts with the UK National Trust, which provided a consultant to advance the national trust concept in Taiwan.[[22]](#endnote-22) The sporadic activities of Greenpeace in Taiwan (like those in mainland China) are financed out of the Hong Kong headquarters. Finally, Birdlife International supports some activities of chapters of the Wild Bird Federation in Taiwan.

 As indicated throughout, international NGOs are prominent in the world of China’s environmental organizations. All have headquarters in Europe or North America, and diffuse many ideas, strategies and tactics to China. Because they depend on government authorization to an even greater extent than do native organizations, their approach tends to be even more cautious.

 **Linkages.** Most of Taiwan’s environmental NGOs maintain websites, and these illustrate their missions, activities, programs, events and contact information. Several of them also issue bulletins or newsletters, as well as monthly or quarterly magazines. This observation applies equally well to China’s environmental NGOs.

The NGO leaders we surveyed in both Taiwan and China claimed to have good ties with the traditional media. In general, they believed that most newspapers did not do an effective job of reporting environmental news. In Taiwan, this created an opening for the Taiwan Environmental Information Association, which has provided a daily update to the Environmental News Center of 2,000 to 3,000 characters and also publishes an E-newspaper for which there are 18,000 subscribers.[[23]](#endnote-23)

Both Taiwan’s EPA and China’s MEP have been primary disseminators of news on the environment. MEP has published *Environment News* (circulation 200,000) since the late 1980s and a more recent biweekly newsmagazine *China Environment Magazine* (10,000 subscribers). The State Forestry Administration publishes *Green Times* (20,000 subscribers). The founder of FON often took stories to national media, which gave him good press.[[24]](#endnote-24) The founder of the Green Earth Volunteers, herself a prominent journalist and chief editor of *China Green News*, organized the Journalists’ Salon. On a monthly basis she brings journalists together to listen to late-breaking environmental news developments, because most reporters have no background in environmental studies.

 The impression of most respondents was that public TV and the radio program in Taiwan sponsored by the EPA provided better coverage of environmental news than available on commercial broadcast stations. (Hsiao’s surveys indicate that 84 percent of the Taiwan public obtain knowledge on environmental protection issues through TV programs, followed by newspapers and magazines [54 percent], the Internet [21 percent], EPA’s educational brochures [17 percent], families and friends [12 percent] and school classes [12 percent].)[[25]](#endnote-25) And a number also use social media such as Facebook to convey information about their activities. Overall, we sensed that while publicizing their missions and activities required some effort, there were several avenues of communication that they could employ.

 In China, NGO leaders have spurred CCTV, China’s centralized television network, to sponsor special programs on endangered species (e.g., the golden monkey) and the GreenSpace program. On occasion, TV stations ask environmental organizations for materials. The new social media are abundantly used in China as well. *Weibo.com*, the main social medium in China, has a good number of environmental news items. One experienced environmental commentator who writes for it said she receives thousands of responses to each of her entries.[[26]](#endnote-26)

 Finally, as noted briefly in the previous section, Taiwan’s environmental NGOs have developed good and productive relationships with government agencies such as the Environmental Protection Administration, Council of Agriculture, Ministry of Health, and the Ministry of Education. Clearly and for obvious reasons, the resistance organizations such as TEPU have more limited access to government; for most other NGOs, this sentiment of an environmental leader seems to apply: “The government asks us to meetings. If you oppose all the time, you don’t have much influence. Sometimes, they listen.”

Such opportunities are less frequent in China, as the environmental assessment process is less well established than in Taiwan, leaving fewer chances for input. A second metric is news conferences held by government agencies, which are much less frequently conducted in China than in Taiwan.

**What NGOs do in EE and ESD.**

 Every one of the environmental organizations we surveyed in both Taiwan and China had objectives regarding environmental education. The nature of the educational activities varies by mission of the NGO, as indicated in the following examples.

 The mission of several environmental NGOs is to place people “in the environment.” In Taiwan, they take groups to national parks and wildlife sanctuaries to watch animals in their environment (thereby underscoring the importance of habitats to species preservation). The best example is SOW, which focuses on 48 different environmental “hot spots” in Taiwan and 5

wetland sanctuaries. It conducts field trips for students in schools, bringing one or two classes of students to hot spots weekly and interpreting individual species, habitats and eco-systems. On average it takes 20,000 students on field trips annually.[[27]](#endnote-27)

In China, TNC has two “in nature” projects in Yunnan Province. One promotes green building in villages threatened by over-logging. The campaign manager used Yunnan spruce as the logo for native species and promoted an environmentally friendly way of building houses—using less wood, making better use of solar energy—to train villagers how to conserve materials.[[28]](#endnote-28)

 NGOs in both Taiwan and China conduct research on environmental problems, often in collaboration with academics. They pay particular attention to threats to ecosystems from different land uses such as chemical plants, golf courses, and other commercial developments.

 Environmental organizations publish newsletters, magazines, reports and books. They prepare videos and CDs. In China, FON sends out 4,000 to 5,000 newsletters (essentially a magazine) monthly featuring articles on endangered species and activities—such as visits to parks and preserves—that it sponsors. In Taiwan, EAST has done an audit of the use of animals in government and university laboratories.[[29]](#endnote-29) TRAFFIC-Taipei has prepared a one-minute film for tourists on consumption of illegally traded species, such as soft-shelled turtles.[[30]](#endnote-30)

 A number of environmental NGOs work closely with schools. In most cases they are invited to give lessons connected to their purpose, or they get in touch with teachers (a national website lists all schools in Taiwan and teachers in elementary and junior middle schools). Several NGOs take students on field trips “to the environment.” We mentioned SOW’s program of school field trips. In Taipei and Taichung alone it has taken 10,611 students on field trips.[[31]](#endnote-31) These kinds of outdoor activities generally are praised by environmental educators, who find them critical to what they regard as essential changes in attitudes and behavior.[[32]](#endnote-32) We suspect that as many “in the environment” activities are sponsored by environmental NGOs as by Taiwan’s public schools.

 In China, FON uses its “antelope” van to visit schools in the Beijing area. Program staff and educators perform plays on birds and other animals. The van brings school children to more remote places to observe animals and listen to animal sounds. Often, they invite ecologists and wild life biologists to accompany them. The Jane Goodall Institute sometimes targets schools, but leaves its activities up to teachers, says the program director:

 Some schools have strict after school regulations. We may put on the program in

 the science curriculum. The Communist Youth League organizes after school

 activities, and they may have an environmental protection program.[[33]](#endnote-33)

It is more difficult for China’s NGOs to enter and conduct programs in urban schools than NGOs in Taiwan. Recent episodes of kidnapping and violence in schools have led to tightened security and reluctance of school authorities to allow access to outsiders. Also, China’s school administrators are also reluctant to allow students to leave the campus for field trips. (Too, few schools have their own buses to transport students to parks or other special areas.) In areas we visited outside Beijing, such as rural areas of Zhengzhou in Henan Province and in the outskirts of Kunming, student field trips to local environmentally interesting sites were common.

 Environmental organizations sponsor events for Earth Day and other special days such as Migratory Bird Day, Ocean Day, Ocean Cleanup Day. They sponsor community-wide gatherings and events such as a carbon dioxide event at the CKS Memorial Hall which attracted 3,000 people.[[34]](#endnote-34) Also, they hold discussion fora and invite well-known authors, such as Vandana Shiva, to come to Taiwan for book-signing events.[[35]](#endnote-35) Much less emphasis is placed on sponsorship of community-wide events by China’s urban NGOs, for perhaps obvious reasons.

 Environmental groups communicate conservation values through many means, including some of the products they sell: greeting cards portraying different bird and animal species, T-shirts and tote bags with environmental slogans, and “green bags” to be used when participating in eco-tours.

 Finally, several environmental NGOs conduct training workshops for teachers and for government officials in areas of their specialization, such as the work of Taiwan’s EAST on animal welfare. Clearly, these organizations are a vibrant addition to Taiwan’s environmental education efforts. Global Village of Beijing (GVB) worked with the MEP’s office on national NGO education to develop a training program for new organizations, emphasizing public participation elements. Also, it has assisted the government of the Beijing Municipality in developing a recycling program.[[36]](#endnote-36)

**Participation, Protest, Resistance and Environmental Education**

Another aspect to non-formal environmental education is what people learn through their participation in events, what they observe in public activities (such as demonstrations) personally or through the media, and when their perceptions are challenged through resistance to government policy. Because Taiwan’s political environment is relatively open, we draw observations primarily from this place.

 **The Emphasis on Participation.** By holding regular meetings that involve members, environmental NGOs build interest and abilities in participation, which is a critical value in modern democracies. Also, some environmental NGOs encourage other kinds of participation not directly related to their missions: involvement of parents in school governance (in Taiwan), involvement of shareholders in corporate governance and corporate social responsibility, and participation of citizens in campaigns and elections.

 Environmental groups seek participation on government advisory committees, and particularly in Taiwan’s environmental impact assessment review process. Said one experienced NGO leader:

 Now there are many policies and more committee decisions. Before, it was just

 the officials who decided. The committees now involve scholars, NGOs; they

 enlarge participation. Also, there is the right to know. We haven’t won this

 battle yet but want to obtain what FOIA provides in the U.S.[[37]](#endnote-37)

 **Protest Demonstrations.** Demonstrations have educational value too. In China, protest demonstrations occur but are illegal. Yet this law is not always enforced universally. For example, in Xiamen, thousands of residents protested planned construction of a chemical plant in their neighborhood. Communicating via text messaging in 2007, they congregated and walked peacefully, showing their environmental concerns. This event was reported by the foreign press and coverage soon leaked through China’s porous censor screen, educating the public about yet another large project that threatened environmental values.

Most people in Taiwan have not participated in environmental demonstrations, but they learn of them (and thus of environmental problems) through reports on TV, in newspapers and on the Internet. The demonstrations often use unusual tactics, such as the recent “crawling for stray dogs” parade that attracted 500 people,[[38]](#endnote-38) and acquainted a much larger media audience with the problem of stray dogs in Taiwan.

 The reliance on a volunteer base gives Taiwan’s environmental NGOs incentives to create activities that are “exciting,” participation in which will expand membership. This applies not only to the resistance organizations, but also to the others which are mostly mainstream in their political orientations and selection of tactics. For example, the Society of Wilderness in recent years has participated (and led) national protests against construction of petrochemical plants that would threaten natural ecosystems. The Fan Kuokuang demonstration it conducted in January 2010 attracted 10,000 participants, one-tenth of whom were its members. (With 12,000 members in 2011, SOW is Taiwan’s largest environmental NGO.)

 **Resistance.** An increasing number of studies has focused on resistance to corrupt and arbitrary official behavior in China and to enhancing grassroots accountability. These go beyond peaceful demonstrations, and involve farmers, country and city residents, young and old, men and women who oppose government action with the use of violence. Many of such acts of resistance concern environmental issues—factories endangering neighbors’ lives with toxic pollution, depredation of clean water sources and the like.

 Violent resistance to government policy is illegal both in China and Taiwan, but as an authoritarian state system, China also prohibits resistance organizations even if they do not condone violence. This severely restricts development of autonomy in civil associations. Taiwan, since democratization in the late 1980s, allows protest by NGOs, some of which are resistance organizations, and this definitely has stimulated development of a democratic ethos.

 In this final section, we examine four areas of personal and organizational development manifest in the growth of Taiwan’s environmental NGOs by providing brief examples. In each area, individuals and organizations became more capable of advancing the goals of EE and ESD.

**1. Empowerment of Individuals.** NGO members through routine participation in organization meetings and activities gain experience in public speaking and working with others. An early success of Taiwan’s environmental movement was the Wildlife Conservation Law, adopted by the Legislative Yuan in 1989. A proponent and activist at the time recounted what she had learned through NGO involvement:

We were new members of SWAN and the Taipei Bird Society working with my teacher (a bird specialist), and supported by the Asia Foundation. They helped us learn how to work with legislators. We took several countries’ laws to the LY and showed how they could be improved in Taiwan. We worked with legislators through the first and second readings, we learned how to lobby them. Then we conducted demonstrations, peaceful ones, outside the Legislative Yuan. Most legislators supported it.[[39]](#endnote-39)

 Altogether, different kinds of learning—public speaking, increased knowledge of society and state, knowledge of government policy-making and implementation, advocacy skills, and deliberation—increased the personal and political efficacy of members.

 **2. Value Transformation.** A few environmental organizations have a genuine grassroots orientation and could be said to have a commitment to participatory democracy, one of the core principles of ecologism. For example, both TEPU and the Society of Wilderness, which fall at different points on the ideological spectrum, have strong grassroots orientations.

 A number of environmental NGOs express a reasonably clear environmental ethic that aims to transform human life. This is most evident in the case of animal protection and wildlife organizations. The head of an animal protection association explained why his organization focused on stray dogs:

 Stray dogs influence people’s attitudes toward animals. They don’t think of them

 as life. Now, they are caught and killed. We don’t want stray dogs to adversely

 impact people’s attitudes. What we want to teach people is to protect dogs; we

 look for ways to save them and to reduce their population.[[40]](#endnote-40)

The head of an animal rights organization, who had been a Buddhist monk for ten years before starting his career with nonprofit organizations, explained why his organization sought the establishment of an animal protection department in the Council of Agriculture:

 We want a department to look at animal welfare and improved treatment of

 livestock. There are too many farm animals, and they are treated cruelly.

 Their spirits are not respected. Our policy is to eat less meat; ultimately,

 we want to eliminate meat eating entirely.[[41]](#endnote-41)

 Several of the groups emphasize “making friends with nature” and “harmony with nature.” A leader of the Homemakers’ Union talked about the forest preservation efforts of her organization:

 We urge people to go to parks and make trees our friends. In many places there

 are nature paths. When people go for a walk, we urge them to recognize trees

 and to respect them. Originally it was our idea to put labels on trees; then the

 government took it over.[[42]](#endnote-42)

 As they work to achieve their goals of changing government policy to protect environmental values, members of environmental NGOs also come to understand the important role that civil society plays in limiting the power of the state.

 **3. Decentralization.** Several environmental NGOs have formed county/city-level branches or chapters. This fortifies the grassroots orientation of environmental groups, as they emphasize local environmental issues such as LULUs in addition to national ones. In some cases, this care for the community and grassroots orientation also fosters a new sense of identity. The local chapters in turn recruit members from those directly affected by environmental problems and crises.

 Explaining the formation of local chapters, a TEPU leader remarked:

 Our thought system was to bring in local people, and we formed local

 chapters. We had local people influenced by environmental events. The

 organizational structure was very open. We wanted to involve those

 influenced by pollution directly. They knew what the problems with the

 government were. Our local anti-pollution activity made a great

 contribution to the development of Taiwan’s democracy.[[43]](#endnote-43)

Every chapter of TEPU has had demonstration and protest activity targeting each of Taiwan’s four nuclear power plants, the sixth and seventh naptha crackers, cement plant construction, chemical plant construction, petrochemical plant pollution, radiation from nuclear reactors and nuclear waste.

 Local activism has increased the level of conflict, as citizen groups protest the siting of industrial facilities (for example, petrochemical complexes and solid waste incinerators) in their neighborhoods. As Tang and Tang note, however, this may lead over time to “an increase in participative and integrative governing capacities.”

 Tang calls the current iteration of decentralized environmental politics “civic environmentalism,” by which he means that grassroots protests and public interest-oriented protest activity from the first two stages of Taiwan’s environmental movement continue today. He is optimistic that urban policies in the future will be more responsive to environmental concerns, if local-level citizen activism continues to challenge local elites.

 The connection between local, grass roots activities and those of “world view” organizations contradicts the assessment of Tong that environmental NGOs in Taiwan and China “rarely get involved with grass-roots environmental protests.”[[44]](#endnote-44)

 **4. Politicization.** Participating in an environmental organization tends to increase the social and political efficacy of members. Because they seek to change government policy, participants become more politically aware, and this has a net positive impact on the development of democracy.

 Some movement leaders are entrepreneurs who use their environmental work as a stepping stone to public office. This applies to the case of Li Tung-liang, the Lukang activist who was elected to the county assembly (but failed to win a race for the provincial assembly). Some others become interested in public office because of their experiences (both negative and positive) in NGO work. Political parties and especially the DPP and Green Party recruit candidates from environmental organizations.

 TEPU is more closely associated with the DPP than any environmental NGO, and its members have a reputation for political activity. An early leader explained the increased involvement of TEPU members in politics in these terms:

 Some members were just focused on the environment and became politically

 active for that reason. Others were more interested in using TEPU activity as

 a stepping stone for broader political activity. And there were still others who

 were interested in both. They used environmentalism to raise their political

 status—several or many were in this situation. Also, of those in the environ-

 mental movement first, they realized they needed political support. And there

 were those concerned with the environment who came to be concerned about

 politics.[[45]](#endnote-45)

The roster of directors of this association is studded with the names of those who later won local and national office: magistrates of Taipei and Taichung counties, members of city and county councils, mayors of Hsinchu and Keelung, DPP officers, and members of the Legislative Yuan.

 Most environmental associations, however, shy away from explicit political stances that might compromise their environmental objectives in a multi-party environment. The leader of the Wild Bird Federation commented:

 We don’t say much about politics; we are neutral and thus in the association

 we do not have political discussions. But others may observe the activity of

 our members, and invite them to participate and even run for office. The

 populace in Taiwan likes environmental activities.[[46]](#endnote-46)

 A leader of the Society of Wilderness said that in meetings “We don’t talk about politics at all,” and recounted a recent campaign-related incident:

 The former secretary general joined the Green Party after leaving SOW.

 He asked for our endorsement in the campaign, but we did not provide one.

 One-third of our programs are paid for by the government, and we don’t

 want too close a relationship with politics.[[47]](#endnote-47)

 Although the predisposition of most environmental NGO leaders is to support the DPP, which from the outset declared itself as Taiwan’s only effective green party, they tend to hedge their bets. And a few leaders are stalwart supporters of the KMT.

The main point is that environmentalists in Taiwan have a choice on the ways to frame issues and educate the public through their own alliances based on full membership in the political system. Such a choice is not yet available to environmental activists in China.

**Conclusions**

This report focuses on environmental education (and ESD) in Taiwan, with comparisons to China. We began by introducing the EE and ESD system in Taiwan’s K-12 schools and teacher training for it. China’s EE/ESD schools program is similar, although teachers and principals say students spend less time learning about environment-related issues and processes.[[48]](#endnote-48) Significantly, China retains the *dakao*, while Taiwan no longer mandates the *liankao*. This gatekeeping examination offers a potential metric for both changes in student awareness and cognition in environmental areas.

 Then we introduced Taiwan’s environmental NGO milieu, because NGOs are important actors in the non-formal aspect of EE/ESD. Taiwan’s list of NGOs tops 200 (far smaller than the number in China), and we examined how they functioned as organizations, comparing them to NGOs in China. We found that Taiwan’s NGOs are better institutionalized than those in China, yet both NGO communities are specialized. The degree in professionalization of Taiwan’s NGOs is higher than China’s. However, the international NGOs operating in China (about 40) bring significant technical expertise and environmental knowledge to their work. Taiwan’s national NGOs also have a large volunteer base. Few of China’s national NGOs have many volunteers. Student groups at the college/university level attract volunteers, and of course grassroots NGOs depend on volunteers. Capacity building efforts for China’s local environmental activists are now underway. Funding is a greater problem for organizations in China than in Taiwan (except for China’s international NGOs, but their future funding is uncertain). Finally, environmental NGOs are reasonably well connected to power centers in each state. Taiwan’s NGOs, being more institutionalized, have greater success in playing roles as quasi-governments, thereby linking environmental values to the furtherance of state goals and objectives.

 Because most environmental NGOs have educational objectives, we asked how they contributed to environmental education (both EE and ESD), and gave examples of their work in raising awareness of environmental problems, disseminating environmental knowledge and changing attitudes toward the environment. In most areas, for example development of materials for teachers and the public, there are few differences in NGO activity. In one area, the difference was significant. Taiwan’s NGOs have been much more effective in bringing children and adults “to” the environment, which, to environmental educators, is greatly important not only in raising awareness but also in changing attitudes and behavior.

 In the final section w examined briefly participation, protest demonstrations and resistance organizations. Both Taiwan’s and China’s environmental NGOs emphasize participation. Because Taiwan’s political environment is far freer than China’s, participation opportunities are greater. Protest demonstrations on environmental issues occur in both states also; however, they are illegal in China (yet occur nonetheless). Finally, the most obvious difference is lack of legitimate resistance organizations in China, while they are present in Taiwan. Clearly, in Taiwan’s case, environmentalism has been closely related to democratization. NGOs have empowered individuals, improved their personal and political efficacy, and nurtured transformative values; overall, NGOs assisted in the furtherance of grassroots activities and orientations, and provided incentives for democratic development and consolidation. We shall see whether China’s community of NGOs, operating in far different and more constrained circumstances, matches Taiwan’s strides.

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 Altogether, in Taiwan and China, more than 100 representatives of environmental NGOs assisted our research. Because most prefer to remain anonymous, we have not listed their names, but remain in their debt.

**ENDNOTES**

1. We interviewed representatives of approximately 35 environmental NGOs in Taipei (and by phone in Tainan, Kaohsiung, Taichung and Hualien) during March and May, 2011. About 10 of these interviews added a longitudinal dimension to our work, because we had interviewed them first in 2003. We also interviewed an half dozen scholars, government officials and journalists. In China, our interviews with NGO representatives, scholars, government officials, journalists, teachers and a few students began in 2004 and continued through late 2011. Many of the China interviews and a few of the 2003 Taiwan interviews are reported in earlier publications: McBeath and Leng, *Governance of Biodiversity Conservation in China and Taiwan*, Edward Elgar Publishers, 2006, and J.H. McBeath & J. McBeath, *Environmental Change and Food Security in China*, Springer, 2010. [↑](#endnote-ref-1)
2. Environmental courses were taught first, in the late 1970s, at Donghai University in Taichung. [↑](#endnote-ref-2)
3. This section is based on interviews with faculty in the Institute of Environmental Education, National Taiwan Normal University, and members of the Environmental Protection Division, Ministry of Education, March 14 and March 16, 2011. [↑](#endnote-ref-3)
4. Huai Xu and Huaixin Zhu, *Theory and Practice of International Environmental Education,* Beijing: People’s Education Press, 1996. [↑](#endnote-ref-4)
5. Personal interviews with professors at the Environmental Education Center, Beijing Normal University, May 19, 20, 21, 2009. [↑](#endnote-ref-5)
6. Reviews of some of these curricular efforts include: *2007 Annual Conference on Cross-Strait Environmental and Sustainable Development Education Seminar,* Beijing: Beijing Normal University Geography and Sustainable Development Education Center, 2008; and Institute for Global Environmental Strategies, *Education for Sustainable Development Practice in China*, 2008; and Huang Yu, “ESD Projects Based on Curriculum Reform in China—EEI and EPD as Examples,” Beijing: Beijing Normal University, Environmental Education Center, 2004. [↑](#endnote-ref-6)
7. Personal interview with Wang Min, Beijing Normal University, May 24, 2010. [↑](#endnote-ref-7)
8. Personal interview with IFAW staff, Beijing, March 7, 2011. [↑](#endnote-ref-8)
9. Personal interview with EE and Training Center Director, Yunnan Normal University, Kunming, June 25, 2011. [↑](#endnote-ref-9)
10. See: [http://www.epa.gov.tw/ch/WebConnection,aspx?WebClassID=351&Path=5706](http://www.epa.gov.tw/ch/WebConnection%2Caspx?WebClassID=351&Path=5706). We thank Dr. Lee-in Chen for pointing out that this listing omits both fishery and forest associations, which are involved in activities and accomplishments of SOW. [↑](#endnote-ref-10)
11. For reviews of environmental NGO activities, see among others: Jonathan Schwartz, “Environmental NGOs in China: Roles and Limits,” *Pacific Affairs*, 77 (1) (Spring 2000), 38; Peter Ho, “Greening without Conflict? Environmentalism, NGOs and Civil Society in China,” *Development and Change*, 32, 907; Fengshi Wu, “New partners or old brothers? GONGOs in transitional environmental advocacy in China,” *China Environmental Series,* issue 5, 45; David Da-hua Yang, “Civil society as an analytic lens for contemporary China,” *China: An International Journal*, 2 (1) (March 2004), 1-27; and Jin Hong, “NGOs and environmental education in China,” in S. Wooltorton and D. Marinova, eds., *Sharing Wisdom for our Future: Environmental Education in Action,* Proceedings of the 2006 Conference of the Australian Association of Environmental Education, 2007, 324-32. [↑](#endnote-ref-11)
12. Personal interview with Green Party spokesperson, March 17, 2011. See the *Global Green Charter,* Taipei: Taiwan Friends of the Global Greens, no date. [↑](#endnote-ref-12)
13. Personal interview with leader of an environmental NGO, May 7, 2011. [↑](#endnote-ref-13)
14. Personal interview with program director, Beijing, May 28, 2010. [↑](#endnote-ref-14)
15. Personal interview with TNC program staff, Beijing, May 20, 2009. [↑](#endnote-ref-15)
16. Personal interview with secretary-general of the Animal Protection Association of R.O.C., May 6, 2011; also see monthly newsletters. [↑](#endnote-ref-16)
17. Personal interview with the fund-raising officers of a large environmental NGO, March 16, 2011. [↑](#endnote-ref-17)
18. Personal interview with EAST director, March 15, 2011. Also, see its publication on compassion in animal farming and *The Global Benefits of Eating Less Meat*, 2004. [↑](#endnote-ref-18)
19. Personal interview with director of Wild Bird Federation, March 24, 2003. See *Feather* (in Chinese), monthly publication. [↑](#endnote-ref-19)
20. Personal interview, Mary 5, 2011. [↑](#endnote-ref-20)
21. Personal interview with program officer, TRAFFIC-East Asia-Taipei, March 15, 2011. [↑](#endnote-ref-21)
22. Personal interview with Environmental Trust, March 16, 2011. [↑](#endnote-ref-22)
23. Personal interview with TEIA founder, March 17, 2011. [↑](#endnote-ref-23)
24. Personal interview with Liang Congjie, Beijing, April 18, 2004. [↑](#endnote-ref-24)
25. H. M. Michael Hsiao, “Public Perception and Attitudes Toward Environmental Protection,” (in Chinese), in *The Social Attitudes Survey of Taiwan: The Report on the Feb. 1991 Survey,* Taipei: ISSP, Academia Sinica, 1991, 90-97. [↑](#endnote-ref-25)
26. Personal interview, Beijing, June 28, 2011. [↑](#endnote-ref-26)
27. Personal interview with director, Society of Wilderness, May 6, 2011. See monthly newsletters. [↑](#endnote-ref-27)
28. Personal interview with TNC staff, Beijing, March 4, 2011. [↑](#endnote-ref-28)
29. Personal interview, March 15, 2011. [↑](#endnote-ref-29)
30. Personal interviews, March 15, 2011. [↑](#endnote-ref-30)
31. Personal interviews, May 6 and 7, 2011 [↑](#endnote-ref-31)
32. A recent critical review of environmental education opines that “Environmental education has failed to bring about the changes in attitude and behavior necessary to stave off the detrimental effects of climate change, biodiversity loss, and environmental degradation that our planet is experiencing at an alarmingly accelerating rate.” Charles Saylan and Daniel T. Blumstein, *The Failure of Environmental Education*, Berkeley, CA: University of California Press, 2011, l. [↑](#endnote-ref-32)
33. Personal interview, Beijing, May 28, 2010. [↑](#endnote-ref-33)
34. Personal interview, March 17, 2011. [↑](#endnote-ref-34)
35. Personal interview with director, Green Formosa Front, March 19, 2011. [↑](#endnote-ref-35)
36. Personal interview with program staff, Global Village of Beijing, May 18, 2010. [↑](#endnote-ref-36)
37. Personal interview with NGO leader, March 20, 2011. [↑](#endnote-ref-37)
38. Personal interview with EAST director, March 15, 2011. [↑](#endnote-ref-38)
39. Personal interview with director of SWAN, March 18, 2003. [↑](#endnote-ref-39)
40. Personal interview, May 6, 2011. [↑](#endnote-ref-40)
41. Personal interview, March 15, 2011. [↑](#endnote-ref-41)
42. Personal interview, March 18, 2011. [↑](#endnote-ref-42)
43. Personal interview, March 17, 2011. [↑](#endnote-ref-43)
44. Yanqi Tong, “Environmental Movements in Transitional Societies: A Comparative Study of Taiwan and China,” *Comparative Politics,* Vol. 37, no. 2 (January 2005), 181. [↑](#endnote-ref-44)
45. Personal interview, March 17, 2011. [↑](#endnote-ref-45)
46. Personal interview, March 19, 2011. [↑](#endnote-ref-46)
47. Personal interview, May 7, 2011. [↑](#endnote-ref-47)
48. A consortium of environmental education professors and researchers from China, Taiwan, Hong Kong and Macau meets at least biennially. Educators share information on effective practices and contribute papers to a proceedings of the conference. [↑](#endnote-ref-48)