



Think Green! Act Green!: Education for Sustainable Development

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Our Context: Population and the Environment

Many informed observers say that world population growth is the most crucial environmental problem facing Earth today and in the future. The interrelated problems associated with rapid population growth were outlined in 1994 by T. Ahmed Obaid, Executive Director of the United Nations Population Fund. These are: overexploitation of fragile ecosystems, increased rate of urbanization, excessive use of unsustainable farming techniques, increased unemployment, increased number of undernourished, reduction of biodiversity, and increased demand for water, energy, food, transportation, shelter, education, health, and other services. We also know that high density populations have less resilience to natural and human-induced disasters than low density communities.

Human impact on resources and the environment varies not only with changes in population growth and distribution but also with changes in levels of consumption and the technologies involved. Consider the problem of greenhouse gases which threaten to warm Earth. It is not just due to huge impending increases in consumption in large population countries but also to the consumption of highly industrialized countries with smaller populations. Hence, stabilization of human population growth, adoption of environmentally sound industrial and agricultural technologies, reforestation, and ecological restoration are crucial to create an equitable and sustainable future for all humankind in harmony with nature.

Among the many recommendations for dealing with societal and environmental issues, perhaps none has such a catalytic effect as the education of the citizens. Thus, this paper is focused on education, environment, and sustainability. It offers some strategies on how

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University of the Philippines (U.P.) and its alumni can serve as a role model in promoting sustainable development-oriented behaviors. It presents an educational program that can develop or enhance “communities of practice” to build a sustainable future.

Environmental Carrying Capacity

One of the least understood principles used to explain the impact of population growth on the environment is that of carrying capacity. I use the analogy shared to us by a professor in ecology to simplify it:

A farmer started with a few hyacinths in a pond 128 square meters in area. These hyacinths doubled in number daily. During the first Sunday, the water hyacinths covered less than 1% or 1/128 of the surface area. But the farmer does not worry.

Still doubling in number, the hyacinths covered 1/62 of the water surface on Monday, 1/32 on Tuesday, 1/16 on Wednesday, 1/8 on Thursday and 1/4 on Friday.

The following Sunday, the pond was completely filled with hyacinths. The full capacity of the pond had been reached. Any further increase in number can no longer be accommodated by the pond. The hyacinths were rapidly using up the nutrients in the water.

What do you think happened to the pond and the life forms it contained?

The increasing number of hyacinths is analogous to the exponential growth of people. After a given period, the number of hyacinths in the pond increased to more than what the pond can support. The pond’s carrying capacity had been exceeded.

Carrying capacity means that a given ecosystem can only support a specific number of individuals at a given time. If the carrying capacity is exceeded, an imbalance in the ecosystem (usually an environmental problem) occurs. Because ecosystems are interconnected, what happens to one ecosystem directly or indirectly affects others.

Globally, many experts are concerned that Earth’s “carrying capacity” is already overstrained. Urgent action by all sectors of society – government, business and industry, private foundations, educational institutions, citizen groups, and the general public – is needed to address these fundamental problems and reverse the trend.

Our Vision: A Sustainable Future

The United Nations has declared 2005-2014 as the “Decade of Education for Sustainable Development (ESD),” which calls for a process of reorienting educational policies, programs and practices so that education plays its part in building capacities of all members of society

to work together to build a sustainable future. ESD came about from a broad understanding of development which includes: (1) equitable distribution of wealth; (2) participation by the population in the process of decision making; (3) protection of the environment; and, (4) preservation of the cultural identity of the community. During this decade, ESD hopes to attain “a world where everyone has the opportunity to benefit from education and learn the values, behaviors, and lifestyles required for a sustainable future and for positive societal transformation” based on three pillars: society, environment, and economy, with culture as an underlying dimension. The ESD recognizes, respects and accepts the limits of the life support systems in economic decision making.

The ESD program is an offshoot of the United Nations World Summit on Sustainable Development held in Johannesburg in 2002. In that world summit, the delegates reviewed the extent of implementation of the agreements and accomplishments during the 1992 Earth Summit in Rio de Janeiro, Brazil. This is where Agenda 21 was formulated, Chapter 36 of which focused on ‘Education, Awareness and Training,’ processes by which human beings and societies can reach their fullest potential. It is recognized that social groups with higher educational attainment tend to have smaller families, so educational resources should be better distributed. If these were spread to remote areas, people would not flock to urban areas and exceed the carrying capacities of the latter.

The Role of UP and Its Alumni in Promoting ESD

Understanding the relationships among population, human activities, and the environment, and developing strategies for an environmentally sustainable future are complex issues. There is a growing demand for universities to take the lead role in addressing these concerns, the university being a microcosm of the larger community. Therefore, the manner in which a university carries out its daily activities is an important demonstration of ways to achieve environmentally responsible living.

Many universities have responded to this challenge. As a matter of fact, there is an association of university leaders for a sustainable future (ULSF), established in 1990. The association came out with a declaration of actions (Talloires Declaration) on how universities could play a role in promoting environmental management and sustainable development. Members of the association report their programs related to the theme in the ULSF website. On May 17-19, 2006, a conference on “Learning from Success: Steps Toward More Sustainable Campuses” was held in Saint Joseph, Minnesota. The sessions tackled campus sustainability in its broadest sense: green building, alternative energy, campus recycling programs, environmental education, community organizing, energy efficiency, student participation, transportation, building maintenance and housekeeping, and other subjects related to sustainable campus design, operations, or living.

The Asia Pacific Cultural Centre (ACCU) for UNESCO has launched the 2006 Search for Centers of Excellence on ESD across the region. U.P. could be one of the centers in the near future if it plays a strong role in the education, research, policy development, information exchange, and community outreach to help create an equitable and sustainable future. U.P. has the expertise necessary to develop the intellectual and conceptual framework to achieve ESD. Many of its alumni develop and manage society's institutions. U.P. and its alumni must assume the profound responsibility to increase the awareness, knowledge, technologies, and tools to create an environmentally sustainable future. In addition, U.P. campuses are clean and green, models of well-managed ecosystems. The U.P. faculty, students, administrative staff, and alumni groups could make a difference.

Our Action: Think Green, Act Green

“Think Green, Act Green” is the call of the times. Thinking green means making a commitment to help create a sustainable economy - one that doesn't use up resources at the expense of future generations. It means being aware of our interconnectedness with the world and reflecting on the unintended damage we cause nature in the daily course of our lives. Hopefully, thinking green leads to acting green, particularly, taking corrective action to make environmental responsibility and stewardship a reality.

For U.P. and its alumni, thinking green and acting green means that we embrace the tremendous responsibility as leaders in education, in industry, in every field to use our expertise, resources, and technologies to better the communities we serve. It means for us to understand that the world is a finite place with finite resources, and that the next generation's products and processes must be designed within the framework of this complex system. Thinking green and acting green also means being mindful of, and sensitive to, the natural environment in our daily life.

U.P. must organize the Think Green, Act Green (TG-AG) partners to include colleges, institutes, dormitories, student organizations, faculty organizations, the student affairs office, office of research and development, Research, Extension and Professional (REPS) Council, food service and food concessionaires. UP must appoint a TG-AG Programs Committee or Task Force consisting of faculty, REPS, administrative, and student groups to promote environmental programs within the university system. This committee or task force must have a website for campus environmental activities where the green partners can report their activities and accomplishments.

There are specific recommendations for consideration. Many of these activities, perhaps are already being done by different colleges and/or campuses; there is a need, however, to institutionalize and practice them across the university system.

On Curricular Programs

U.P. must review curricular programs to promote understanding of the relationships among population, human activities, and the environment. Quality education for sustainable development needs to be based on state-of-the-art knowledge; its implementation requires continuous review and updating of programs, curricula and teaching materials (The Lüneburg Declaration on Higher Education for Sustainable Development, 2001).

On Capacity Building and Training

U.P. must produce environmentally literate specialists in demography, engineering, science, economics, social sciences, health, and management to address the critical shortage of specialists in environmental management and related fields (DOST, 2004). One GE program that could be oriented towards ESD is STS or Science, Technology, and Society.

U.P. must engage faculty, staff, administration, and students in activities such as energy and water conservation, recycling/waste management, and natural disaster preparedness and mitigation mechanisms.

On Research

UP must seek large increases in the funding of interdisciplinary environmental research rather than focus on purely traditional disciplines to reduce compartmentalization of problems and solutions. There is also a need to increase or focus research on the following: examining strategies, technologies, policies, and institutional behavior towards understanding of the complex interaction of human activities and the environment; development of environmentally sound technologies and the establishment of a new ethos to stabilize population, and anticipatory research to identify future threats to a sustainable society, and develop solutions to circumvent these threats.

Incentives must be given to outstanding scholars who engage in research and teaching on environmental topics and help them lead other scholars in this direction. Set aside funding and create positions for faculty and REPS across autonomous units who will research and teach population, environment, and sustainable development topics. U.P. must work with faculty to review tenure and promotion requirements to reward interdisciplinary work on environment, population, and sustainable development issues.

On Networking and Partnerships

U.P. must develop or strengthen collaborative programs with universities abroad to promote faculty and student exchanges, research, and education programs that develop international understanding.

It must forge linkages with local government units (LGUs) which have high degree of environmental awareness and sustainable practices, e.g., coastal zone management, *Bantay Dagat* programs, or waste reduction programs. It must expand its network with other government organizations, private and business sector entities, as well as nongovernment institutions, to facilitate implementation of community-based environmental programs such as the environmental waste management program, and promotion of the Philippine Clean Air Act, and Water Quality Act.

In addition, U.P. must give extra effort to bridge the gap between scientists and science educators on one hand, and teachers on the other, by establishing partnerships with teacher training institutions and primary and secondary schools to enhance the capability of teachers in teaching about population, environment, and sustainable development issues.

On Advocacy

The faculty, REPS, students and other staff must use every opportunity to raise public, government, foundation, and university awareness by publicly speaking out on the importance of environmental concerns and the problems posed by a rapidly growing population. U.P. may have to upgrade/activate its radio station (DZUP) to serve as a venue for such advocacy programs and involve different sectors of the U.P. community.

There is a need to conduct a baseline Green Audit to serve as guide in determining where U.P. in general and its colleges and institutes in particular stand in terms of environmental protection and practice of sustainable behaviors. In addition to the Green Audit, there is a need to conduct an environmental literacy assessment across the U.P. system to be able to plan intervention programs and identify instructional materials to be developed to promote sustainable behaviors.

The Green Audit in Focus

From 1995 to 1997, this author was involved in the development of an environmental education (EE) project for the Philippines through a grant from the Asian Development Bank. Her team developed an EE Guide which contained among others, the Green Audit – a checklist of practices and behaviors which can reveal which areas can be improved. The Green Audit does not require ratings or scores. What matters is that change can be instituted, particularly concerning practices which do harm to the environment, often without the offenders realizing it.

The Green Audit is divided into three parts: policy, operations, and academics.

At the policy level, the audit is concerned with the following: whether or not environmental protection is part of the U.P. vision/mission statement; if there are environmental policies related to environmental protection and sustainability; if there is a committee or group of

persons responsible for environmental projects and programs; or if its personnel are required to practice environment-oriented activities such as waste reduction, use of nontoxic materials, and involvement in environment-related activities, and finally if purchases are based on policies that reject products harmful to the environment in their production and/or disposal.

At the operations level, the green audit looks at the design of buildings to maximize natural lighting and ventilation, and covers practices in electricity, water and paper use, as well as waste disposal strategies.

The academic-related parameters include whether or not environmental integration is done in different subjects and courses; if there are sufficient instructional materials and resources on environment-related issues; and if the learning process includes opportunities to get involved in community/environmental problem solving and decision making.

The ultimate goal of education for sustainable development is to impart the knowledge, values, attitudes and skills needed to empower people to bring about the changes required to achieve sustainability.

The Five Steps Along the Green Path

New Zealand's Ministry of Environment enumerated five steps along the green path: making a commitment, involvement of all academic and administrative staff and students, conduct of an environmental or green audit, making an action plan, and monitoring of activities. The Think Green, Act Green program proposed for the U.P. system follows a similar path; it will inspire our alumni, faculty, REPS and administrative staff to take a lead role in helping the next generation to develop knowledge, skills, and values that will enable them to enjoy and share the Earth's bounty while living within its means. Thinking green and acting green also means being able to promote awareness about the concept of carrying capacity.

Thinking green and acting green can be practiced at home, in our offices, in our communities, and everywhere else. It is not enough to be doing less harm to the environment; we have to be doing something that benefits our people so we do not see the separation between the natural and built environment. We have to go back to seeing ourselves as part of that environment. Jonathan Schell, author of *Fate of the Earth* said: "Every person is the right person to act. Every moment is the right moment to begin."

Kung hindi tayo kikilos, sino ang kikilos? Kung hindi tayo kikibo, sino and kikibo? Kung hindi ngayon, kailan? Let us transform our political activism into environmental activism!

Let us all REFLECT on our behavior, CREATE A GLOBAL VISION of a sustainable future, and ACT LOCALLY to achieve this Vision. In all these endeavors, the UP and its Alumni should PROVIDE the LEADERSHIP.

Specifically, as our contribution to the U.P. Centennial, let us make the Think Green, Act Green Program work.

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