Ten proposals for measures we must take in the area of Education for Sustainable Development

Dr. Carl Lindberg
Former Vice Minister, Ministry of Education and Science, Sweden and a member of High-level Advisory Committee for the UN DESD
Ten proposals (1)

1. Inform as many people as possible about the aims of the UN Decade of Education for Sustainable Development (DESD 2005-2014), particularly journalists who work on educational issues.

2. Request that your Ministers of Education and their Ministries, develop action plans on ESD, giving government agencies clear roles and responsibility. Request that all relevant legislation and regulation reflects the importance of ESD.

3. Inform the general public about strategies for sustainable development and the link of ESD with these.
Ten proposals (2)

4. Inform government and other stakeholders of the UNESCO Bangkok Situational Analysis of ESD in the Asia-Pacific Region and the Asia-Pacific Regional Strategy for ESD, that serves to guide the implementation of ESD throughout this region. Inform also of UNU’s Regional Centres of Expertise and of UN Economic Commission for Europe (UNECE) Strategy for ESD.

5. Request that your national governments in different international assemblies will be driving forces for ESD, for example within UNESCO and the UN Commission on Sustainable Development.

6. Request that Members of Parliament raise the importance of ESD with their governments.
7. Request that national government bodies and agencies for international aid and cooperation, in their negotiations with the countries receiving support in the education area, require that educational activities be permeated by the perspective of sustainable development.

8. Make politicians in local and regional government, especially those responsible for school issues, aware that ESD is an important dimension to issues of quality.
Ten proposals (4)

9. Request that conferences dealing with any aspect of sustainable development always discuss the importance of the role of education.

10. Urge national and international NGOs to inform their supporters and staff about ESD and monitor how national governments meet their international commitments towards it.
Initiatives for EfSD
Penang@USM experiences

On behalf of RCE Penang Team
Dzulkifli Abdul Razak
vc@usm.my

The University in a Garden
As an affiliate to UNESCO, the foremost educational, scientific and cultural organisation, supports and work towards the goals of the UN Decade on Education for Sustainable Development (UN-DEfSD), can the creation of the new “global learning space for sustainable development.”

It is involved in many EfSD-related activities

The contact: Dr. Hillig van’t Land (vantland.iau@unesco.org).
International EfSD declarations

- 1990 – *Talloires* (in France) Declaration (* , 310 signatories)
- 1991 – *Halifax Declaration* (consortium of Canadian universities, IAU, UNU, 20 signatories)
- 1993 – *Swansea Declaration*, released at the conclusion of the Association of Commonwealth Universities Conference in Wales
International EfSD declarations

- 1993 – The **Kyoto Declaration** has been signed by the IAU embodying the language and substance of both the Halifax Declaration and the Swansea Declaration. In IAU in its 8th Round Table meeting (Nov 1993) in Japan issued a clarion call to its 650 university members in the Kyoto Declaration
- 1994 – **COPERNICUS-CAMPUS University charter** for Sustainable Development (IAU, 320 signatories)
- 1997 – **Thessaloniki Declaration** unanimously adopted by the 83 countries present at the International Conference on Environment and Society Education and Public Awareness for Sustainability
- 2001 – **Luneburg Declaration** (IAU, ULSF, EUA-COPERNICUS, UNESCO)
- 2002 – **Ubuntu Declaration** (IAU, 11 higher education institutions including ULSF, COPERNICUS etc) signed in the lead up to the RIO Earth Summit
more recently...

- IAU took part in the First Session of the Ubuntu Committee of Peers on 5 December 2006 in Tokyo, and the latest in Penang, 6 August 2007

- IAU gets involved in new United Nations Environment Program (UNEP) UNEP Sustainability Project to develop a "Higher Education Toolkit on Sustainability Communications", made available, in English and French, in CD-ROM format, at the end of 2006

- and UNESCO are co-sponsors of the project

- has joined with University Leaders for a Sustainable Future (ULSF) to edit and publish [a special joint journal] issue focused on higher education for sustainable development
Clearly, higher education plays a crucial role in defining the policies and practices to create a just, sustainable, and peaceful world. IAU is coordinating and participating in several of the initiatives on EfSD.

Currently, 12 members of IAU are involved in either an existing or proposed Regional Centres of Expertise (RCE) on EfSD.
People should think things out fresh and **not** just accept conventional terms and the conventional way of doing things.

- R. Buckminster Fuller
12 members of IAU currently involved in either an existing or proposed RCE:

- Aachen University, Germany
- Catholic University of Eastern Africa, Kenya
- Catholic University of Louvain, Belgium
- Lund University, Sweden
- Okayama University, Japan
- Technical University of Catalonia, Spain
- University of Helsinki, Finland
- University of KwaZulu-Natal, South Africa
- University of Nairobi, Kenya
- Universiti Sains Malaysia, Malaysia
- University of Saskatchewan, Canada
- University of the South Pacific, Fiji
Universiti Sains Malaysia – after 36 years

- 29,000 students (cf. 250 in 1972)
- 23 schools (cf. 7 in 1972), science-based
- over-built – ‘large ecological footprint’
The **USM** Model

*Signature processes* *

**Global action**

**USM-Community partnership**

**Transdisciplinary approach**

**The University in a Garden**

**Healthy Campus Programme**

*Bringing the Inside Out: evolves from a company-specific history* - Gratton & Goshal (2005) MIT Sloan Mgt Review
Goals of the RCE

- Create public awareness and understanding on SD and the needs for ESD.
- Move higher education institutions to spearhead ESD activities and awareness in the region.
- Coordinate the compilation of current ESD practices from across Penang and the neighbouring states in order to share and generate regional ESD good practices.

Objectives

- Cultivate sustainable development competence of the existing workforce.
- Promote the region’s commitment to sustainable development.
- Advance sustainable development competence of all the region’s citizens to facilitate social inclusion and active participation in SD.
- Increase opportunities for sustainable development volunteering.
- Promote sustainable management and use of the community’s physical, cultural and environmental assets.

Strategies to achieve the objectives include:

- establishing leadership for sustainable development;
- developing and promoting compelling images of sustainable regional development;
- developing and promoting sustainable development training opportunities for school teachers, teacher educators and school administrators;
- working with key partners to identify funding sources for ESD projects;
- developing an ESD Strategy guide for local authorities; and
- establishing one stop shop for information on ESD good practices in the region.
Healthy Campus Concept

- **Kampus Se-jah-te-ra**
  - beyond ‘health’
  - a combination of wellness, well-being peaceful, harmonious, tranquility
  - a nexus of spiritual-emotional-physical
  - a holistic approach

Initiated in 2001 as:
- a platform for consultation & ownership
- input to policy- & decision-making activities
- based on 5 guiding principles
Kampus Sejahtera

- Action plans
  - volunteerism
  - transdisciplinary teams
  - R&D based, data driven
  - insourcing of expertise
  - complete & thorough documentation

...involving the campus community
more documentation...

- Linking to some UNESCO programmes

*Used some 900 years ago by Hildegard von Bingen (1098-1179)
UNESCO – Major Programmes

- Programme I: Promoting education and capacity-building in education for all. 

- Programme II: Emphasis on capacity-building in areas such as the sustainable use of natural resources, the impact of climate change, and renewable energy. 
  >> World Conference on Science (1999) in Budapest

- Programme III: Promoting principles and ethical norms to guide scientific and technological development (bioethics) and social transformation. 
  >> Global Ethics Observatory launched in 2005

UNESCO – Major Programmes

- Programme IV: Promoting cultural diversity and intercultural dialogue
  - Universal Declaration on Cultural Diversity

- Programme V: Preservation of endangered movable cultural properties and museum development
  - Emphasis placed on the links between biological diversity and cultural diversity as important pillars of sustainable development
  - Targeting living arts and their contribution to human development and to social cohesion
  - Strengthening of capacities of professionals in the field of culture

60 Nations in our Garden
Local collaborative efforts

- Signing of the Memorandum of Understanding (MOU) between USM and 10 stakeholders, on 21st June, 2006
- Official stakeholders of RCE Penang:
  - SEAMEO RECSAM
  - Taiping Peace Institute
  - World Wildlife Fund (WWF)
  - Water Watch Penang (WWP)
  - Sahabat Alam Malaysia (SAM)
  - Malaysian Nature Society (MNS)
  - Recycling initiatives (Don & Mylene)
  - Penang Environmental Working Group
  - Association of Science and Mathematic Education Penang
  - Socio-economic and Environmental Research Institute (SERI)
RCE Penang-wide collaboration
Malaysian Citizenship Initiative

Projek Warga

- USM-led nationwide civic and active citizenry learning programme
- Teenage school children
  - Empowered to select community-based problem
  - Teamwork
  - Research/Assess it critically
  - Suggest creative solutions

Photos courtesy of USM International
Activities 2005-2006

- August 4–6, 2005: APPLE (Asia Pacific Professional Leaders in Education) Annual Conference <Reorientating Higher Education for a Sustainable Future> Nanyang Technological University, Singapore
- International Conference on EfSD by USM School of Education, Aug 2005
- Cities for People, 8th Asian Planning Schools Association International Conference, Sept 2005
- November 20-22, 2005: International Conference on Healthy University <Healthy Campus & Education for Sustainable Development> Universiti Sains Malaysia
- August 22-25, 2006: 6th Asia Pacific Experts Consultation <Reorienting Teachers' Education to Address Sustainability> Penang
Activities 2007 (Aug)

- January 18, 2007: Visit and Dialogue on EfSD with students and lecturers of Prince Songkla University of Thailand
- March 12, 2007: Visit and Dialogue on EfSD with students and lectures from Dokkyo University
- March 19-20, 2007: Visit and Dialogues with RCE Yokohama
- May 25-28, 2007: International Health & Medical Congress <Health is sustainable Development> Universiti Sains Malaysia
- July 13-15, 2007: Local, Global and Universe: Environmental Awareness and Education Programme
- August 7-8, 2007: 2nd International RCE Conference, USM, Penang Malaysia
- August 10-12, 2007: World Innovation Forum <Innovating Towards Sustainability> KL, RCE Penang & Rhine Meuse
Opening Ceremony

INTERNATIONAL CONFERENCE
OF REGIONAL CENTRES OF EXPERTISE ON
EDUCATION FOR SUSTAINABLE DEVELOPMENT

CULTURAL CENTRE, UNIVERSITI SAINS MALAYSIA
7 AUGUST 2007
A lesson in sustainability@USM
A lesson in sustainability@USM

http://akuse.com/Blog/blog_pics/thisthat/banana_budha.jpg
Going Bananas in a transdisciplinary way
Pulp to Paper

40 times stronger
Banana Paper

Banana lampshades, embracing lights, to coexist as fully as possible – so entwined, like honesty, like love, like purity, like burning amber, like eternal soul. A consoling ambience that infuses a character of its own and let its warm live in our very own interpretation of the words romance, peace and serenity in the quiet presence of intense solace.
SUSTAINING THE QUALITY OF LIFE

Living in a world with sophisticated technology and an advance lifestyle is a luxury that men have created. But, have we ever stopped to ponder for a second on the amount of waste our faithful machineries and we ourselves produce? The output of electrical appliances and industrial wastes is taking a toll on earth and without realization that the world we live in is suffering from pollution exhaustion. Natural disasters are increasing greatly around the globe as a way of Mother Nature fighting back from all the harm we have caused her. Without conservation to help heal the earth, the consequences are dire and unpredictable.

Thanks to a group of researchers, the world now has someone to feed her. Started in the year 1999, the School of Chemical Engineering of Universiti Sains Malaysia (USM) decided that it is about time to help curb global warming and air pollution resulted from power plants, industrial combustion processes and many more. A group project led by Professor Dr. Abul Rajman Mohd. and his team of inventors Dr. Lee Keat Teong, Professor Dr. Subramaniam Bhat, Associate Professor Dr. Azrina Kamaruddin and Mr. Irwan Gafan use agriculture waste to insert Eco- Absorbent, A Novel Absorbent Made from Rice Husk Ash for Industrial Gas Cleaning Technology.

The primary objective of this project is to recycle burnt rice husk and manufactured it to a commercial product that can be used to remove sulphur dioxide and nitrogen oxides. These gases are the main air pollutants today resulted from burning industrial fuels. The team of researchers has found a way to utilize waste produced by the agriculture sector hence creating a product that are designed to absorb unwanted and polluting content in the air that causes acid rain, air pollution and global warming.

Similar ashes have been used as absorbent but rice husk ash is found to be a better product compared to the rest. Being a country, which is semi-agriculture that produces huge quantities of solid agricultural wastes, this invention could be partly the answer to the waste disposal problems.

The technology requires a custom built model that channels the gas or waste from any industrial factory to a filter bag, which flows through the absorber rice husk ashes where it is filtered and hence producing a cleaner air. According to internal laboratory scale tests by the researchers, 100% removal of air pollution can be achieved with just 0.8 gram of the absorbent. This innovative technology is now ready to be tested at any industry that uses combustion process no matter the size because a custom built model can be provided.

Apart from being made from agricultural waste material and having high capability to absorb pollutants, Eco-Absorbent has another salient feature. Upon absorbing pollutants, the spent Eco-Sorbent is converted into a commercial product that has a variety of commercial applications. The commercial application includes fertilizer, replacement material for cement production, road base stabilization, soil stabilization, brick production, lightweight aggregate and many more.

The School of Chemical Engineering of USM has once again break out of the shell with innovatings parallel to the concept of the school. Nature and environment must be sustained and preserved for a better tomorrow where the relationship between man and nature co-exists in an intrinsic manner that are often taken for granted.

Minister of Higher Education Award for Sustainability
Towards a shared future

Constructing Future Higher Education Scenarios
Insights from Universiti Sains Malaysia
Celebrating 50 Years of Nationhood
Compiled by Universiti Sains Malaysia

CREATING THE FUTURES OF USM
BACKCASTING AND VISIONING OF THE SCENARIOS
6 DECEMBER 2005
The 5 Scenarios

the 5 scenarios represent an analytic range, describing the nature and scope of the vision in detail
About the cover

Padang Minden or the Minden Green, is the pride of USM. A well-kept manicured sports field which is protected from development, it is the only grass lawn on campus which receives plentiful supply of water during the dry spells to maintain a high quality surface for sporting activities. Nevertheless, grass lawns on campuses are also a symbol of the struggle to achieve sustainability while balancing the need for esthetics and social development.

Monitoring the future

Kampus Sejahtera Kampus Lestari
The genesis for a sustainable campus
Beyond environment

1 Setting the Stage for Sustainability

The state of Spaceship Earth 1
What is sustainability 2
What is a sustainable campus 3
Universiti Sains Malaysia 5
Kampus Sejahtera 7

2 Success Stories & Initiatives

Governance & Policy 13
Income & Investment 15
Purchasing & Materials 16
Community, Health & Well-being 17
Waste Management 21
Space, Transportation & Planning 23
Water 27
Noise 28
Energy 29
Air quality & Indoor environment 31
Teaching, Research & Publication 33
Outreach Programmes 37

3 Moving Forward : Assessment Framework

How do we move forward? 41
Assessment framework 43
Prioritising projects 44
Sustainable campus policies 45
Key persons 47

Contact 48
planning for action

Publication of 1st Edition of this book:
Aug 2007

Consultation:
Sept 2007 - Dec 2007

Develop assessment framework:
Oct 2007 - June 2008

SD Policy formulation:
Dec 2007 - Mar 2008

Develop a Plan of Action:

- adoption of SD policies
- budgeting
- funding
- priority projects
- student internships
- carry out assessment
- monitoring
- students / staff training
- curriculum redesign
- research priority for SD
- outreach programmes
- publication / dissemination
- environmental awards / recognition

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sustainable campus policies

“Growing without increasing our ecological footprint” would be our goal. Policies must be developed in each of the areas of concern, including:

- Human Development
- Fairness and justice for all
- Physical development (Buildings & Site)
- Transportation
- Purchasing and Consumption
- Waste Management
- Energy
- Toxic & Hazardous substances
- Ecology, Environment & Climate
The ‘New’ Worldview on Education

Modified from Sohail Inayatullah, www.metafuture.org
Lessons learnt

- There must be a shift of mindsets to transform education
- We must showcase success stories towards a sustainable campus
- We must lead to push changes in education policies and curriculum
- Carry out transdisciplinary R&D to improve knowledge and practice of SD
- We must have close ties with Government, NGOs, glocal/international organisations, etc
UN Decade on Education for Sustainable Development (2005 - 2014)
The University in a Garden
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PROMOTING EDUCATION FOR SUSTAINABLE DEVELOPMENT IN JAPAN THROUGH HIGHER EDUCATION INSTITUTIONS IN THE ERA OF GLOBALISATION: A JAPANESE PERSPECTIVE

Executive Summary

I. Introduction.
In Japan, Education for Sustainable Development was initiated by a non-governmental organization called the Japan Council for the United Nations Decade of Education for Sustainable Development, (ESD-J), founded in June 2003 in Tokyo to discuss the major issues facing their respective communities in ESD. Higher educational institutions (HEI) joined only later in national efforts for ESD, although individual academics were involved in the establishment of ESD-J. In the earlier years of ESD activities in Japan, their major concern was in Environmental and Inter-Cultural Education rather than Development, Human Rights and Peace Education. Today, however, ESD has been gaining greater currency in Japan as in many parts of the world, though still lacking in the integrated approach to ESD.

2. Today ESD activities in Japan have been promoted not only by NGOs but also increasingly by other stakeholders such as primary and secondary schools, higher educational institutions (HEIs) and central and local governments. Involvement of private sector enterprises, trade unions and agricultural and consumer cooperatives is still limited in degree and scope of activities. Different stakeholders also tend to act independent of each other. The same applies to HEIs in Japan as well.

II. Japanese Government DESD Implementation Plan
3. Unlike ESD-J and unlike other developed countries, the Government of Japan (GOJ) initiated the drafting of the Japan’s ESD policies and programmes rather late. Only in the fall of 2006, with the
participation of several ministries and government offices, the GOJ completed its DESD (Decade of Education for Sustainable Development) Implementation Plan. An important feature of the Japan’s DESD Implementation Plan is an emphasis placed on international cooperation particularly on those issues facing developing countries, involving the crisis of economic, social and environmental sustainability. Also, while protection of the environment is important, an integrated approach to sustainable development is emphasized to include those issues covered by the Millennium Development Goals (MDGs).

4. A guideline for ESD implementation has been formulated, putting an emphasis among others on community approach to SD, the need for improving educational facilities ranging from schools to the desired space for various stakeholders, and the educational curriculum to be inter- and multi-disciplinary and comprehensive. The essentiality of critical thinking, participatory forms of learning, systematic thinking, alternative planning, value-based ethical approach and the strengthening of partnerships among stakeholders is emphasized, in addition to an importance attached to planning, implementation, evaluation and improvement based on feedbacks by the various constituent stakeholders.

5. Having found some difficulties in the actual implementation of these guidelines, there is an emerging consensus that a step by step approach is essential to integrating all strategic elements of ESD and that the first step lies in creating public awareness, in addition to creative partnerships, innovative finance, effective personnel training, collection and analysis of relevant high-quality information and improved ICT utilization. It has also been found that each stakeholder group may utilize methods unique to it in order to implement the guidelines. While the Japanese government is expected to largely define implementation planning, NGOs, universities and researchers as well as local governments and private sector enterprises will have a distinct role to play in fulfilling various functions specified in the guidelines. HEIs are given a special role to play in the development and enrichment of SD teaching capacity including teachers, teaching materials and learning methods.

III. Role of Higher Educational Institutions in Promoting ESD in Japan
6. It is a commonly shared view in Japan as elsewhere that higher educational institutions, particularly universities with advanced research institutions have a heavy responsibility for educating the students of all generations the very basics and advanced theories of physical, biological and social sciences and humanities and practical application thereof as well as for carrying out research programmes to advance the depth and width of specialized knowledge and know-how useful to enriching all dimensions of human activities and promoting economic, social and environmental sustainability. HEIs can do this not only for their students studying at their campuses but also for those outside through participation in community education and through research inter-linkages with private and public sector research institutions.

7. It is encouraging that given the paucity in Japan of development, human rights and peace education and an integrated approach to ESD at all levels of education, Japanese HEIs are now enhancing their education, research and out-reach programmes in these areas, though wide disparities exist among HEIs. The degree of programme re-orientation seems to depend highly on the leadership of HEIs at the top as well as of the leadership of city mayors and prefectural governors, mobilizing not only the support of teaching and research faculties and students of their respective institutions but also the taxpaying public in favour of enhancing ESD, as shown at several HEIs in different parts of Japan.

8. One of the greatest challenges to Japanese HEIs in enhancing ESD is their quality of education, training and research in an increasingly competitive world markets of higher education. What seems most inadequate at Japanese HEIs lies in the institutional capacity of enhancing students’ and researchers’ critical thinking and search for alternative approaches to problem-finding and -solving, the very essence that the pressure of globalization and emerging global issues of all kinds require them to enhance.

IV. UNU and RCEs in Japan

9. Many stakeholders in Japan including those associated with ESD-J and both national and local governments have now begun to see some success in realizing the priorities as emphasized in the Ubuntu Declaration and Global Higher Education for Sustainability Partnership (GHESP) to:
mainstream ESD in both educational and scientific and technological research activities at universities and other higher levels of education,

strengthen partnership of higher education institutions with other levels of education in developing and promoting those essential curriculum, teaching methods and educational materials on ESD, and

work with private sector corporations and local communities to integrate ESD into their training and continuing education programmes.

10. An increasing number of HEIs have begun not only to reorient their teaching curricula and research programmes in favour of enhancing ESD and RED, but also to review their relationships with local and national stakeholders in favour of enhancing their out-reach programmes for ESD and RED, as well as their on-going physical and administrative structures to turn themselves wholly into SUSTAINABLE UNIVERSITIES, as already being emphasized in HEIs in a number of countries of the European Union.

11. As part of worldwide programme for promoting ESD, the United Nations University launched in 2004 a programme for promoting Regional Centres of Expertise (RCE) on ESD in Japan and elsewhere. Each RCE has been established with a view to establishing a network of concerned organizations within a relevant region, develop the guiding principles, policies and roadmaps for more effective formulation and implementation of regional ESD and promote cooperation among different RCEs. The core elements of an RCE consist of “governance, addressing issues of RCE management and leadership, collaboration, addressing the engagement of actors from all levels of formal, non-formal and informal education in RCE activities, research and development, addressing the role of research and its inclusion in RCE activities, as well as contributing to the design of strategies for collaborative activities, including those with other RCEs, and transformative education, contributing to the transformation of the current education and training systems to satisfy ambitions of the region regarding sustainable living and livelihood.”

12. Based on the experiences of some RCEs around the world, UNU has learnt that: a)“RCE is an effective tool of to mobilize core local institutions for ESD; b) Building on existing activities is an effective way
to launch an RCE; c) RCE is promoted through a combination of top-down and bottom-up approaches; d) Creating a new SD vision for the region is not necessarily an integral part of creating an RCE; e) RCE may serve to reinforce the dominant conceptualization of ESD as a synonym of EE, rather than to expand EE into ESD, by labeling EE as ESD; f) Enhancing the role of local higher education institutions in addressing ESD may enhance the potential of RCE to serve as a mechanism to enable partnerships across knowledge, administrative and geographical boundaries; and g) Constructing a local/regional knowledge base based on a stepwise approach can be an effective way to develop local/regional capacity to create a sustainable future on a long-term basis.”

V. Inter-University Network for Promoting ESD in Asia and the Pacific Region

13. International Cooperation in ESD in Asia and the Pacific can still be considered as an emerging role for Japanese HEIs and NGOs which have had somewhat rich experiences in this region in both promoting basic education in the context of UNESCO’s Education for All (EFA) and strengthening the GOJ’s social development (mainly health and education) assistance programmes including assistance to HEIs during the last decade and a half. Japan’s failure of taking a leadership in promoting ESD in the region stems from the lack of experiences, expertise and initiatives in this field of endeavour. Thus, it has been the work of international organizations such as UNDP, UNEP, UNESCO and UNESCAP to take a leadership in establishing a regional network of governmental and nongovernmental organizations engaged in ESD in Asia and the Pacific including inter-university network on ESD.

14. Tough belated, it is a welcome decision for the MOE to have launched this year a study on what initiatives Japanese HEIs could take in collaboration with other HEIs in Asia and the Pacific region to promote ESD and develop environmental specialists as well as environmentally friendly and socially conscious bureaucrats, managers, professionals, engineers, technicians and teachers at formal, non-formal and informal schools. The study envisages the establishment in the future of an inter-university network of promoting ESD in Asia and the Pacific region in collaboration with like-minded national and international organizations.
It is also to be noted in haste that with a view to accelerating the progress of ESD in Asia and the Pacific region, the Institute for Global Environmental Strategies (IGES) resumed its long-term research project in 2005 which had once been initiated in 1999 as a result of their growing concern with the lagged development of ESD in this region.

VI. Conclusions and Some Recommendations

15. In conclusion, it is vital that all stakeholders concerned with ESD in Japan, particularly HEIs network with like-minded organizations overseas, particularly in Asia and the Pacific region, bilateral donors and international organisations with a view to enhancing the awareness of the critical importance of ESD to the quality of life of their own and future generations, and working together with them to mainstream ESD in their local and national educations systems that are consistent both with the stage of economic and social development and with the cultural heritages. It is important that HEIs in Japan take an initiative in collaboration with their counterparts in Asia and the Pacific region and, if at all possible, a stronger leadership in promoting ESD in the region. First by overcoming all the human and institutional shortcomings and barriers at their own institutions for taking such initiatives and leadership, second by mobilizing the genuine support to ESD from among the other stakeholders including the GOJ, local governments, private sector enterprises, trade unions, agricultural and consumer cooperatives and civil society organizations, third, specifically by generating sufficient financial resources either within or from outside available for taking such initiatives, and fourthly by their continuous and painstaking efforts for dialoguing and multiloguing with their counterpart HEIs and other stakeholders in Asia and the Pacific region.

16. How far HEIs in Japan will succeed in those initiatives mentioned above will certainly depend both on the commitment of each and every member of the organization and resources allocated to the tasks under those initiatives, and equally on the understanding and support they might obtain from the people in their respective communities who should be the most important stakeholder both as taxpayers/contributors and beneficiaries of ESD. In this process, leadership plays the most critical role.

17. Taking into account some of the most critical issues, challenges and actions facing ESD at the local, national, regional and international levels,
the following suggestions and queries must be addressed to all those actively promoting ESD in Japan.

a) Continuing search for the most desirable directions in rethinking and reorienting the existing education philosophy, visions, system and programmes in both formal and informal sectors at all levels in favour of sustainable development, livelihood and future, that is, mainstreaming ESD in terms of those critical instruments of education such as curricula, textbooks, reference materials, teaching and learning methods including problem-solving and experiential education, teaching equipment such as information and communications technology, and teacher training as well as educational administration.

b) Continuing search for alternative approaches to ESD in developing countries that are consistent both with the stage of economic and social development and with the cultural heritages. In exploring into such alternative approaches to ESD, there is a keen need for policy and institutional reforms essential at community and national levels to focus on sharing knowledge, skills, values and perspectives through lifetime learning. A need for delineating those reforms essential with respect to teacher training, education financing, and career development in favour of ESD.

c) Continuing search for ways and means by which HEIs, individually or among themselves or in partnership with households, business corporations, CSOs, NGOs, mass media, local communities and school system, national governments and international organizations, assist people of all ages to enhance their awareness and understanding of both economic, social and environmental sustainability and their linkages among them and to learn to live and work sustainably, and finally,

d) Continuing search for identifying those incentives and/or institutional mechanisms to encourage all stake-holders including HEIs to mainstream ESD in their respective training programmes for their employees and staff so that they “have the knowledge and skills necessary to make decisions and perform their work in a sustainable manner.”
ESD in Korea

Eun-kyung PARK, Ph.D
Director
RCE, Yonsei University, Seoul
UN/UNESCO Int’l Conference,
UN House, Tokyo
August 29-30, 2007
Still Confusion on Environment and SD

- Lack of understanding of SD as balancing economic, social and environmental pillars/
  identify SD as environment oriented/and even sustainable as ‘continuing’

- None in High Policy-making Process: Presidential Committee of National Balanced Development
  (2003)---unbalanced representation of three pillars/
  Presidential Committee of Human Resource Development (2007)---still no understanding of
  global ESD trend

- None in University level: Universities carry environmental studies only

- A bit advanced in Civil sectors
SD Initiatives thru PCSD

- Cultural background of Confucianism: scholar-gentry-bureaucrats
- Alliance of PCSD and Min of Environment
- PCSD function as the main hub of government-level SD, and hold workshops, seminars and discussions with diverse interest groups to disseminate public awareness and knowledge on SD.
- PCSD heavily environment-oriented during the 1st term, 2000-2002
- The 2nd term, awareness-raising process of SD, along with WSSD, where more than 400 Koreans participated
- The 3rd term, the sub-committee of International Relations and Education
- The 4th term, enactment of National SD Law on 3rd of August, 2007, and also Implementation Strategy of DESD
National Strategy of ESD

- Government level discussion on ESD began with the establishment of a Committee for International Cooperation and Education on the 3rd term of PCSD.
- To promote national policy on ESD which is included in the National Strategy for Sustainable Development—one of 100 Policy Goals of the current Participatory Government, a subcommittee on education was formed under the Committee for International Cooperation and Education of PCSD in April 2004.
- Education subcommittee established the concept of ESD suited to Korean situation and discuss the domestic status of ESD.
- National-level strategic plan on ESD developed by a research team of the subcommittee: professors, teachers, NGO activists, and Korean National Commission for UNESCO members.
Outcome of ESD Program in PCSD

- Under the rudimentary situation of little discussion on ESD, the discussion opportunities provided by PCSD for diverse stakeholders during the report-making period were significant.
- National Vision for Sustainable Development of the Republic of Korea declared on the 10th Environment Day (June 5th, 2005), includes ESD strategic plans for concerned government offices to form implementation plans on the education system.
- National Implementation Strategy for DESD, 2007 which will increase public understanding of sustainable development and encourage voluntary participation; on national ESD strategy; and on establishment of network for ESD.
ESD in Formal Sectors

- No initiatives on ESD in schools:
  But ESD related activities in curricular, extracurricular activities and discretionary periods
  - Competitive University Entrance Examination as Obstacle
- Tertiary Level: Graduate School of Environment/ Environment majors/Curriculum Development on Environmental Education for Interdisciplinary Majors (under the Mo Education Fund)
- Secondary School: Field Participation of Nature Studies is the major EE/ low levels of awareness on ED and ESD among teachers and the board members of education,
  - 80% of students expose to the ED thru the media
- Alternate Schools in Secondary level: value subjects on environment, peace, human right, etc
- Primary School and kindergarten: under the individual leadership of superintendents and teachers
ESD in Civil Sectors

- Local Sustainability Alliance of Korea (LASK)
- E Education also covered by Environmental NGOs, including Buddhist and Christian NGOs
- Korean Federation of Environmental Movement (KFEM): Center for EE/Citizen’s Movement of Environmental Justice (CMEJ): Daum Ul Jikinun Saramdul (Future Keepers)
- Korea Environ Education Network (KEEN)
CMEJ: Future Keepers

- Founded in 1999
- Coordination of teachers, CMEJ Staffs and Housewives and Children (under the advise of professors, who are members of CMEJ)

- Publications 4 books:
  -『You Rather Starve Your Children I』
  -『You Rather Starve Your Children II』
  -『Let’s Catch Atopy』
  -『Kwangyoung, Is Hamburger Delicious?』

- Guide Booklets: Eatables/Chemical Goods

- Lectures: 10-15 times a month
  - Extra Curricular Classes in Elementary/Secondary Schools
  - Teachers group/ Housewives/leaders of Co-ops
  - Cooperation with Teachers are well developed, especially with members of <Teachers’ Group for Environment-Oriented>

- Annual Festival of Secondary School Students at Chungchung Province

- Future Plan: Green School Project—
  - Self-Participation of Student/ Textbook for Various Groups/ Healthy Food
  - e.g. “Shiru Deuk” School
ESD in Higher Education

- Korean Universities as an authentic ivory tower (isolated from society. No liaison with civil sectors)
- Very single discipline-oriented than multi- or trans-disciplinary
- Recent demand of problem-solving and vocational training due to high unemployment rate of young people alert university people
- Very few universities start basic course on SD, without any curricula, textbooks or other teaching materials.
- Some universities still teach EE course or install graduate school of environment, not SD related institution
Yonsei University Eco Forum

- **History**
  - Initiated in 1991 as “Yonsei Environment Research Group”
  - Established as “Yonsei Eco Forum” in 12th Oct. 2001
  - 2002 Established “Sustainable Development Research Center”

- **Organization**
  - A research group of professors from liberal arts, social science, natural science, engineering, law, and medical schools --- Over 100 professors are participating as members
  - Steering Committee of 20 professors (1~2 from each college)

- **Main Activities** : Education & Researches on Eco Campus
  - Hold 6~8 Workshops and International Seminars each year
  - Developed and Opened Interdisciplinary Course in Fall, 2003
    - **“Living in Harmony with the Environment”**
    - 40~80 students each semester
  - Currently Developing Interdisciplinary Major on Environment
  - Project on “A Study on Creating Eco Campus at Yonsei University ”
Yonsei University beyond Campus – YangYang (1)

Yonsei Eco Forum and City Research Group
- Alliance with Yangyang (Kangwon Province)
- Municipal government:
  - Experience in Eco-world—Stay in Mountain Area (Exchange of students and professors)
  - Cultural Planning for YY
  - Mountain Vegetable Festival
  - Planting Wild Flower Seed at Yonsei Campus
Yonsei-Tongyeong/Incheon RCEs (2)

- Center for SD in Institute of East and West Studies – RCE of TongYeong
- TY: well-known place for its cultural, historic, artistic diversity and natural beauty
- SD TY in economic, social and environmental areas
- Yonsei also holds liaison with Incheon RCE, started this year.
TY RCE OPERATION

GLOBAL SD Initiative

NATIONAL SD Initiative

LOCAL SD Initiative

TONGYEONG

Regional Interaction

SD Policy Research

e.g.> Yonsei University
"Project on Roadmap of TY RCE"

EfSD Program Development

e.g.> Yonsei University
"A Study on Curriculum Development of General Environmental Course and Interdisciplinary Major in Environmental Science"

YONSEI UNIVERSITY

YONSEI & GYEONGSANG UNIVERSITIES

TONGYEONG Metropolitan Area

SEOUL

Exchange regional education asset
• Yonsei Univ., Seoul→ Schools in Tongyeong
• Global issues
• English education for intern
RCE STRUCTURE

• NGO
• Media
• Government
• Education Office
• Private sector
• Fishermen
• Parents
• Teachers
• Students

Board

Steering Committee

Tongyeong RCE Secretariat

Program Development
Yonsei/Kyungsang Universities
Research Institutes

Program Implementation
Formal & Informal Educational Institutions

Program Recipients
Students & Citizens
Challenge of University ESD

- MOE and HRD: over regulation/under financed---in admission standard, quota of student numbers, recruitment of students, even in discipline areas/ autonomy of university demanded.
- No concern of ESD by MOE, the major ministry.
- To open universities for their social responsibilities, integrative, multi-disciplinary curricular and partnership with civil as well as private sectors should be activated by discarding their authentic, inflexible, and arrogant attitude as a knowledge bearer.
- Need expansion of themes including Peace, Human Right, Security, economic factor, Gender, Health, and the bottom-up issues grass-root awareness of SD including the communal issues including conflict-resolving process, partnership, etc.
- To promote ESD in Korea, partnership of government and multi-stakeholders urgent: Ministries of Education/ Environment, Korean National Commission for UNESCO, Local Agenda 21, NGOs should form a consultation council, with PCSD at the center, to empower active role of the stakeholders and bring the action plans to practice.
University’s role in society for sustainable development

Antoni Giró Roca
Rector, Technical University of Catalonia (UPC)

1. Introduction. The challenge of sustainability for higher education

Since their establishment in Europe in the 12th century, universities have been central institutions, frequently asked to undertake essential roles. Universities are undergoing major change today and need to rethink quite fundamentally the very idea of the University in a world that is very different from earlier periods. The academic drift of the 21st century raises concerns about the core functions of higher education institutions (HEI) and how contemporary changes have affected the academic missions. A wide range of challenges and possibilities are emerging, with political, economic and social implications. It is well-known that universities play a key role in the development of their respective communities. However, it is also widely accepted that there are still many barriers in the interaction between academia and society. Often, academic institutions have been in conflict with their societies over missions and roles. This tension has contributed to the creativity of universities over time but has also placed sometimes overwhelming burdens on them (Altbach, in press). In response to this issue many Universities are trying to connect their missions and actions to social demands.

Sustainability appears as a (if not the) global challenge for the 21st century. Focusing on the sustainability challenge, a growing number of Universities are redefining their core strategies in order to adapt to the real social needs and expectations of their stakeholders. Sustainable development can be seen as a transformative social learning process in which the role of academia regarding sustainable development “is not on integration but rather one of innovation and systemic change within our institutions that will allow for more transformative learning to take place” (Wals & Corcoran 2006). According to these authors, this can be summarized by four transformative shifts: transdisciplinary, transcultural, transgenerational and transgeographical. Van Dam (2006) argues that one of the major challenges for University contribution to sustainable development is to overcome the problem of disciplinary division. Also Jansen (2002) argues that a system’s renewal approach oriented to sustainable development requires education in additional transdisciplinary knowledge and skills in higher education (HE).

Hence, more that integrating sustainability in the University activities (curriculum, research, operations, etc.), the challenge seems to be integrating the University in sustainable development paths of society. Sterling (2005) explains it as “the effect of
patterns of unsustainability on our current and future prospects is so pressing that HE should not be predicated only on the ‘integration of sustainability’ into higher education, because this invites a limited, adaptive, response…We need to see the relationship the other way around – that is, the necessary transformation of HE towards the integrative and more whole state implied by a systemic view of sustainability in education and society”. It becomes obvious that Universities have to develop a role which has to do with participating actively in societal system transitions, in which they have to co-evolve with society.

The contribution of Universities to sustainability is increasingly being expressed through the publication and adoption of various strategies and declarations at international, regional and University level. The large number of milestones in the field of Education for Sustainable Development since 1990 (Adomssent, 2006) provides a good summary of the activity in this area over the last decade.

2. Education for Sustainability. A vision from Higher Education

Thus, the need for Education for Sustainable Development is a major challenge today for the HEIs. It implies deep changes, as to overcome the disciplinary division or to allow transformative learning to take place. From the results of a recent UNESCO workshop on the implementation of Sustainability in Higher Education (Holmberg and Samuelsson, 2006), it can be seen that the main issues to tackle are the following.

- Dealing with complexity
- Structural changes
- Teaching organisation and pedagogy
- Role of research

Dealing with complexity

Education for sustainable development (ESD) is about dealing with complex systems, systems thinking and learning about core concepts. Universities, with their core values of scepticism, curiosity and freedom of speech, have a profound role to play in developing students’ qualities to cope with uncertainty, poorly defined situations, diverging norms, values, interests and reality constructions, looking at sustainability issues from a range of disciplinary angles, cultural perspectives, different time perspectives and a range of spatial perspectives; and also is about dealing with attitudes and values (which are largely hidden) are as important a challenge for the university as achieving knowledge and understanding.

Structural changes

It must be hard to find something more multi- and transdisciplinary than sustainable development. It is also quite clear that the traditional discipline-based structuring of knowledge and research are here to stay. This combination constitutes a major challenge for the universities when implementing learning for sustainable development in higher education (Dam-Mieras 2006). This several fold challenge must be dealt with from different angles: the university culture, in which depth is perceived as better than breadth; the merit system; the publication tradition; the award system; the peer review system; the evaluation of job applications; the funding system etc. There are many
positive multi- and transdisciplinary examples to be found, for instance in relation to the problem based learning method and case studies. The co-teaching activity at Monterrey institute of technology is one positive example (Lozano et al. 2006).

A common experience from proactive universities is that some kind of organisation with overview and responsibility outside and across the traditional disciplines is essential for making multi- and transdisciplinary ESD activities become a successful and lasting activity. Such an organisation works, as an engine for the issues that otherwise often becomes everyone’s interest but nobody’s responsibility. It therefore acts as an incubator for change, and hence a norm supporting structure. Examples of such organisations can be found at Delft University of Technology (Mulder & Jansen 2006); Monterrey Institute of Technology (Lozano et al. 2006); UPC, Barcelona (Ferrer-Balas et al. 2006) and at Chalmers University of Technology and Göteborg University.

Teaching organisation and pedagogy

A typical question in ESD is if separate courses and programs or/and an integrated perspective throughout the whole education are needed. The conclusion at which many leading universities have come after various models and different experiences is clear and simple: both are needed. The separate course is needed to give the basic understanding of the challenges associated with sustainable development; to deliver tools and conceptual models for dealing with dynamic and complex systems; and to attain a feeling of how things are interconnected. The separated basic courses on sustainable development delivered at universities today have often an environmental focus. This needs to be balanced with more integration of social and economic aspects of sustainability.

Role of research

It is essential that this transformation be done on a firm knowledge base. Therefore, existing knowledge must be structured/restructured in a relevant way and new knowledge must be developed. Knowledge must be widely shared in order to increase awareness and to provide a basis for decision making in such a large societal learning process. It is therefore difficult to separate research for sustainable development from research for ESD and both are needed. A good example in that sense is the network on 'Integrated Research System for Sustainability Science' (I3S) in Japan.

3. Sustainability as a key component of UPC’s social commitment

Our Decade of Education for Sustainable Development

The sustainability perspective at UPC as an organisation has evolved positively in the last decade through a progressive (or incremental) improvement (Ferrer-Balas et al., 2006). Like all transformations, it is a complex process in which there are several tensions, but an overall positive trend can be recognised. The institution has incorporated sustainable development (SD) in the objectives of all main strategic and political documents. Since 1996, the institution has developed and implemented two environmental plans which have integrated research, education and operations in a comprehensive strategy. These plans were based on the model described in Fig.1, which
underlined the outputs that come from these three areas (SD trained education professionals, SD solutions for research, and a SD role model for campus operations) together with the flows that cross between them, which are synergetic effects that also have to be promoted. The balanced progress in the three areas provides mutual reinforcement for achieving the overall objectives of sustainable development in the University.

Figure 1. The former role of UPC with respect to the environment and SD (Ferrer-Balas et al., 2004)

The framework for the environmental and sustainability policy took the form of strategic multiyear plans (the periods of these plans were 1996-2001 and 2002-2005), that covered all the University’s areas of activity (education, research, operations and coordination/communication) and included indicators for monitoring their progress (Capdevila et al. 2002, Ferrer-Balas 2004a, Ferrer-Balas et al. 2004b, 2006, UPC 2006a). After two consecutive environmental plans and many initiatives associated with sustainability and social commitment made both within the context of these two plans and independent of them, the University launched in 2006 the UPC Sustainability Plan 2015, which aims to achieve objectives by bringing together internal efforts and forging external alliances (UPC 2006b).

Prior to the completion of the Second Environmental Plan (2002-2005), an evaluation of UPC’s international and internal position on sustainability was undertaken, the aim of which was to obtain strategic recommendations for the subsequent plan. This resulted into two new processes as major inputs to the subsequent plan, an international evaluation and a participatory process to seek input from internal actors and local stakeholders.

The current sustainability plan focuses on a key year – 2015 – which is the year designated by the United Nations for the fulfilment of the Millennium Development Goals, as well as the final year of the United Nations’ Decade of Education for Sustainable Development. It is also a sufficiently long time for substantial changes to be
made, as well as being short enough for one to expect to see the results of these changes. The Plan is divided up into two successive plans for the periods 2006-2010 and 2011-2015. The strategy outlined below defines the activities for the first period.

Vision

The plan’s vision states that “By 2015, the Technical University of Catalonia will be a technological point of reference for sustainable development at different levels (local, regional, national, European and global) as a result of its contribution to education, research, development and innovation. This will be achieved through an effective, cooperative, long-term strategy devised in conjunction with all of the University’s interest groups.”

This vision is consistent with previous statements in the mission of the University reflected in its statutes, which underline that “The Technical University of Catalonia, as an entity that generates and transmits knowledge, must promote the protection of the environment and sustainable development, with respect to education and research as well as its institutional endeavours.” (UPC Statutes (2003). Article 4. Informative Principles). Also, the teaching chapter of the statutes states that “The Technical University of Catalonia, which is aware of the significance of the social and environmental impact of scientific, technological, humanistic and artistic activities, as well as the ethical problems that arise from some of these activities, must include subjects related to these issues in its syllabuses, in accordance with its commitment to sustainable human and material development that is mindful of the environment and future generations.” (UPC Statutes (2003). Article 93. Teaching)

Goals

To make this vision a reality, the strategy is designed to meet four goals, a general one related to interaction and social commitment, and three sectoral ones linked to research, education and internal management:

- To participate in and commit to goals for sustainability in its local, regional and international environment
- To respond to social challenges by carrying out research, development and innovation in accordance with sustainability criteria
- For all UPC graduates to apply sustainability criteria in their professional activity and area of influence
- For UPC to function as a sustainable organisation

Thematic priorities

The plan also includes 5 thematic priorities, and aims to devise mechanisms for effective dialogue with key social actors, classify actions pertaining to different areas according to these thematic priorities, coordinate efforts, create areas for interdisciplinary and intersectoral group work, and tackle issues that concern society, in those areas where UPC operates. In addition, UPC aims to consolidate areas of knowledge in which UPC has significant or emerging academic capabilities and devise effective external fundraising mechanisms for further academic activity in these areas.
Thus, the plan underlines that UPC will focus on science and technology whilst placing emphasis on ICTs, the socioeconomic dimension and global inequalities, in addition to heeding environmental concerns, and will place specific emphasis on the following thematic priorities which represent regional challenges:

- Building construction, energy and climate change
- Integrated water management
- Technology’s responsibility to society
- Regional planning, mobility and logistics
- Material cycles and waste management in urban areas

**Strategic areas**

Similarly to previous plans (Capdevila *et al.* 2002, Ferrer-Balas 2004), where the strategic focus addresses all the University activities (including areas as research, education, operations, communication and outreach), the “UPC Sustainable 2015” Plan is divided into these four areas that each have a set of strategic and operational objectives. The associated actions are described in terms of the unit or individual responsible for the action, key actors, resources, timing and relevance in the strategy (Table 1).

The key differences between the new Sustainability strategy and its predecessors are the following:

- The environmental focus has shifted towards a focus on sustainable human development
- The strengthening of the University’s social role and its opening up to its environment
- Its orientation towards the future
- The thematic priorities
<table>
<thead>
<tr>
<th>Area</th>
<th>Strategic objectives</th>
<th>Operational objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTERACTION AND SOCIAL COMMITMENT</td>
<td>A1.1 To define a sustainability and sustainable human development area in which efforts can come together</td>
<td>A2.1 To carry out awareness-raising activities</td>
</tr>
<tr>
<td>Goal A. To participate in and commit to goals for sustainability in its local, regional and international environment</td>
<td>A1.2 To promote thematic alliances</td>
<td>A2.2 To encourage student participation in sustainability initiatives</td>
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<tr>
<td></td>
<td>A1.3 To be accountable</td>
<td>A2.3 To coordinate the collaboration between UPC, the association network and the local community</td>
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<td></td>
<td>A1. To use synergies and partnerships to foster sustainable human development</td>
<td></td>
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<td></td>
<td>A2. To involve the people in the University community and in its environment in the change towards sustainability</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A3. To establish and strengthen its strategic alliances with other Universities in the move towards sustainability</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A2. To involve the people in the University community and in its environment in the change towards sustainability</td>
<td></td>
</tr>
<tr>
<td>RESEARCH</td>
<td>B1. To raise funds for research into technology and sustainability</td>
<td>B1.1 To make known UPC’s research activity concerning the environment and sustainability</td>
</tr>
<tr>
<td>Goal B. To respond to social challenges by carrying out research, development and innovation in accordance with sustainability criteria</td>
<td>B1.2 To reinforce research into sustainability</td>
<td></td>
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<tr>
<td></td>
<td>B1.3 To facilitate fundraising for research into sustainability</td>
<td></td>
</tr>
<tr>
<td>EDUCATION</td>
<td>C1.1 To green undergraduate and postgraduate programmes and reinforce the links between research and education</td>
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<tr>
<td>Goal C. For all UPC graduates to apply sustainability criteria in their professional activity and area of influence</td>
<td>C1.2 To offer sustainability education pathways for students of non-environmentally oriented disciplines</td>
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<tr>
<td></td>
<td>C1.3 To introduce sustainability criteria in continuing education</td>
<td></td>
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<td></td>
<td>C2. To consolidate research and innovation in education for sustainability at UPC</td>
<td></td>
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<tr>
<td>MANAGEMENT</td>
<td>D1.1 To introduce an EMAS to coordinate all of UPC’s environmental management processes</td>
<td></td>
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<tr>
<td>Goal D. For UPC to function as a sustainable organisation</td>
<td>D1.2 To reduce equivalent CO2 emissions and use UPC’s resources efficiently</td>
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<td></td>
<td>D1.3 To guarantee selective waste collection</td>
<td></td>
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<td></td>
<td>D2. To extend the culture of sustainability at UPC</td>
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<tr>
<td></td>
<td>D2.1 To provide information on sustainable management</td>
<td></td>
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<tr>
<td></td>
<td>D2.2 To offer courses in sustainability for administrative and service staff</td>
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<td></td>
<td>D2.3 To promote transformative actions</td>
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<td></td>
<td>D3. To integrate sustainability into UPC’s management processes</td>
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<tr>
<td></td>
<td>D3.1 To make work spaces environmentally friendly</td>
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<td></td>
<td>D3.2 To establish coordination mechanisms between units</td>
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</tbody>
</table>

It is clear today at UPC that the model for conceptualizing the University’s role regarding SD (Fig.1) needs to be redesigned, especially in the area of the interaction with stakeholders. As the transition to SD is a process of co-evolution, it has necessarily to be done jointly in an organizational (and individual at the end) learning environment. In this sense, the ‘outputs’ of the initial model are redefined as double-direction inputs/outputs of ‘Learning and Innovation’ as shown in Fig.2 (Ferrer-Balas et al., 2006).
Organizational changes accompanying the strategy

Also, during the last decade the institution has opened up spaces to the internal and external debate and action on sustainability and development issues, such as the Center for Sustainability (CITIES), the UNESCO Chair on Sustainability, or the Center for Development Cooperation (CCD).

The institutional activities towards SD have been coordinated by a particular unit in charge of implementation the sustainability policy, called CITIES and formerly the “Environment Plan Coordination Office”. It was formed by a single person in 1997, having grown considerably since then: today it hosts 9 staff and 7 students. The political responsible for the environmental policy has always been a Vice-rector, by appointment of the Rector. One of the new outstanding facts is that CITIES, which is still part of the General Services of the university, belongs now to the Research Area in the general services scheme. This is a strategic option in order to be present where the transformation “seeds” are planted, to say research.

UPC hosts a UNESCO Chair of Sustainability since 1996. This Chair investigates the following interdisciplinary line: the past, present and future impact of technology on development, seeking to contribute towards a better understanding of the impact of technology in past (history), present and future (future studies) on nature and society, and in general on development and its sustainability in today’s context of emergent information, globalization and the crisis of civilization. It is formed by around 20 academics from different disciplines, and concentrated in research and education in sustainability and its relation with technology. An outstanding issue concerning education for sustainable development (ESD) is that the chair has a research group focused on this subject.
The Center for Development Cooperation (CCD) was born in 1997, and has been actively promoting cooperation activities in developing countries since then. The CCD is designed to enable UPC members to work on human resources projects and technology transfer initiatives in developing countries to promote solidarity. The initiatives are typically oriented towards Latin America and Africa.

**Networks and international leadership**

Aware of the importance of leading the transition towards sustainability and exchanging experiences globally, UPC is also involved in various international networks for “rethinking” university and its role in society.

UPC hosts the secretariat of the Global University Network for Innovation (1999) –set up by UNESCO, the United Nations University and the UPC. GUNI is a global network composed by 127 members from 55 countries from all over the world. These members comprise institutions such as UNESCO higher education chairs, educational institutions and research centers, among others, committed to innovation, quality and the social commitment of higher education. The GUNI Secretariat keeps the network interconnected between regional networks and among GUNI members. Their main activities are the International Barcelona Conference on Higher Education, the International Barcelona Conference on Higher Education, the Report “Higher Education in the World”, the Observatory "Universities and Social Commitment” and the Research Studies in Higher Education. This years report is dedicated to the “New challenges and emerging roles for human and social development” and it will be presented on March 2008 at the UPC.

Also, the institution houses the Secretariat of the UBUNTU Forum (2002), which is a world-wide forum aimed at promoting the construction of a diverse and sustainable world that will contribute to a culture of peace.

More recently, the UPC has led the formation of a Regional Centre for Expertise in Education for Sustainable Development in Barcelona, recognized by the University of the United Nations in June 2005. RCE Barcelona's mission is to facilitate the integration of sustainability in formal and informal education in the area of influence of its founding members, via innovative learning techniques, the dissemination of inspiring practice, and connecting people and organizations of diverse backgrounds working in education for sustainability, as well as sharing experiences with other RCEs. This project, which is part of the UPC Sustainable 2015 strategy, has been possible because of the prior existence of the Center for Sustainability, which nucleated it.

Another recent collaborative project that UPC has leaded has been the Engineering Education for Sustainable Development (EESD) Observatory, which aims to trigger ESD in Technical Universities by producing a biannual report on the status of Sustainability in Technical Higher Education (EESD Observatory, 2006). The initiative is organized through an “Observatory” bringing together three of the leading EESD research universities in Europe (UPC, TUDelft and Chalmers) and in association with the international AGS (Alliance for Global Sustainability).

**Education for Sustainability within UPC studies**
In the redesign of all Bachelors and Masters due to the integration to the European Higher Education Area, UPC is taking this opportunity for the inclusion of sustainability requirements for all studies. This is becoming an increasingly important question and raising a strong debate within the institution at different levels, thus showing that the ‘organizational learning’ towards sustainability needs necessarily debates and actions at all scales, from individual to institutional, and all kind of strategies, from bottom-up to top-down.

Furthermore, in September 2007 the UPC launches a new Masters programme in Sustainable Development. The Masters is a 2 year full time programme (120 European credits) and is a collaborative multidisciplinary initiative led by 3 engineering schools of different disciplines, a UNESCO Chair and the Center for Sustainability and various external and international organisations. These spaces help to the work of different networks, universities, people, and organisations of global civil society to organise specific joint actions and reflections about development, democracy and sustainability issues.

4. Conclusions

Since their foundation, universities have changed their missions and roles adapting them to the different conditions of society. The new challenges that emerge in our global society bring us to rethink new missions for the universities and their articulation with the rest of the society. In order to face the new challenges, the university must be a space of thought, reflection and participative action, engaged with the local issues, opened to the community, cooperating in network with other universities on global scale (Lobera, 2007). The search for a sustainable present, as a major issue of our time, strongly challenges universities, in particular if we understand it as a learning process. They may respond to it by a combination of changes, adaptation and leadership. There are important barriers to overcome, but a key driver is to participate strongly in the arena where sustainable development can only happen: society. This implies to rethink missions, strategies, tools and functions, taking into consideration the key and unique role that only higher education can fulfil.

For that, a clear vision on Education for Sustainable Development is needed, and this implies mainly dealing with complexity, implementing structural changes, redesigning teaching organisation and pedagogy, and analysing the role of research for SD.

UPC, in its learning process towards SD, has been walking a path during the last decade that has been explained in this paper. This experience may be relevant for others, especially because of the process done and the lessons learnt, more than the products obtained yet. These lessons are many times already known by others (Filho, 2002), but unfortunately each organization and individual has to walk its own path.

A first lesson we have learnt, is that sustainability is no-one’s domain, but everyone’s. And because of that, the institution has to be decisively active to keep it in the top of its priorities.

Secondly, entering in the societal arena to deal with sustainability needs multiple approaches and “connection units”. No single golden bullet will give the solution to a complex issue like this. For that, we have implemented several of them, and we are
starting to recover the benefits of such actions when we see the synergetic potential they can offer when they work in combination.

Thirdly, sustainability needs to be practical. Although theoretical discussions about sustainability are useful, it is time to move on urgently. Resistances are better overcome showing solutions and learning from errors than talking about the problems.

Finally, we have seen that Sustainability has become today a strategic option in UPC’s core values. Not only because an ethical will, but also because it is a driver for innovation and triggers us to become more relevant to society.

5. References


Holmberg J., and Samuelsson B. (Eds.), *Drivers and Barriers for Implementing Sustainable Development in Higher Education*, UNESCO, Paris


UPC (2006b). UPC Sustainable 2015, UPC.


Universities’ role in society for sustainable development

Antoni Giró Roca

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Outline

• Introduction
• Education for SD: a higher education perspective
• Sustainability as a key component of UPC’s social commitment
• Lessons learnt
• Conclusions
Introduction: the challenge of sustainability for higher education (1)

• New challenges that are emerging in our global society lead us to rethink universities’ missions and links to the rest of the society.

• The search for a sustainable present is a major challenge to universities, especially if we understand it as a learning process.
Introduction: the challenge of sustainability for higher education (2)

• Rather than integrating sustainability in universities, the challenge is to integrate universities in society’s paths to SD.
• Active participation in societal system transitions and co-evolving with society.
• This participation must include all aspects of HE: education, research and institutional activities.
Education for sustainability: the perspective of higher education

• Dealing with complexity
• Structural changes
• Teaching organisation and pedagogy
• Role of research
Higher education towards sustainability (1)

• Milestones
  – Talloires Declaration (1990)
  – Copernicus Charter (1993)

• Journals
  – International Journal of Sustainability in Higher Education
  – Special editions on ESD in many other journals
Higher education towards sustainability (2)

• Networks and international conferences
  – Environmental Management for Sustainable Universities (EMSU)
    • Int. conferences in 1999, 2002, 2004 and 2006
    • EMSU 2008 in Barcelona (www.emsu.org)
  – Engineering Education in Sustainable Development (EESD)
    • Int. conferences in 2002 (TU Delft), 2004 (UPC, Barcelona), 2006 (INSA-Lyon), 2008 (TU Graz)
    • The EESD Observatory
  – Alliance for Global Sustainability
    • MIT, Chalmers, Tokyo and ETH-Zurich
Sustainability as a key component of UPC’s social commitment
Our vision

By the year 2015, the Technical University of Catalonia will be a key reference in technology for sustainable development at the local, regional, European and global levels, through our contribution to education as well as research, development and innovation.
OUR PLAN

The Plan Sustainable UPC 2015 sets our university apart and will help us to become a key reference in technology for sustainable development.

The key new dimensions of this cross-cutting plan are:

- Reaching out to society and taking into consideration the needs and demands of our stakeholders
- Five challenges identified to help us channel efforts into areas of utmost social relevance
- Focus on the future, critical in matters of sustainability
- A holistic vision of sustainability, moving beyond environmental aspects, to incorporate socio-economic dimensions.

This strategy is orientated towards 2015, a deadline marked by the United Nations to achieve the Millennium Development Goals as well as the end of the UN Decade of Education for Sustainable
EDUCATION
- Students
- Professionals
- Programmes

RESEARCH
- Solutions
- Paradigms
- Critical views

ORGANIZATION
- Model Example Community

LEARNING AND INNOVATION
- Knowledge
- Researchers
- Participation
- Credibility
- Framework
- Internal solutions

UNIVERSITY

EDUCATION
- Universities
- Study
- Learning and innovation

COMMUNICATION
- Researchers
- Framework
- Internal solutions

SOCIETY & ENVIRONMENT
- NGOs
- Governments
- Global entities
- Investors
- Companies
- Sindicats
- Companies
- Organizations
WHAT ARE THE KEY CHALLENGES WE FACE?

1. Construction, energy and climate change
   - Reduce energy consumption
   - Incorporate energy efficiency
   - Renewable energy

2. Integrated water management
   - Re-use and efficiency
   - Water conservation
   - Management of the natural cycle

3. Socially Responsible Technology
   - Deontological ethics
   - Precautionary principle
   - Ethical reflections

4. Land use planning, mobility and logistics
   - Efficient urban models
   - Sustainable transport network
   - Environmental protection and countryside management

5. Material cycles, eco-design, and waste management
   - Closed systems
   - Eco-efficiency
   - Eco-innovation
Sustainability as a key component of UPC’s social commitment

- Organizational changes accompanying the strategy
  - Centre for Sustainability
  - Vice Rector for Sustainable Development
  - UNESCO Chair on Sustainability
  - Centre for Development Cooperation
Sustainability as a key component of UPC’s social commitment

- Networks and international leadership
  - GUNI
  - UBUNTU Forum
  - RCE Barcelona
  - EESD Observatory
Sustainability as a key component of UPC’s social commitment

• Education for sustainability within UPC
  – Integration of sustainable development in new curricula (bachelor’s and master’s degrees).
  – New master’s degree in sustainable development.
Lessons learnt

• Sustainability is, at once no one’s and everyone’s domain.
• We need multiple approaches and ‘connection units’ with society.
• Sustainability must be practical.
Conclusions

• Proactive adaptation to the sustainability challenge is needed.

• A key driver is intense participation in the societal arena.

• A clear vision of education for sustainable development is required.

• Sustainability has become a strategic part of UPC’s core values, not only due to our ethical will, but also because it drives innovation and triggers us to become more relevant to society.
Thank you for your attention.
Regional Sustainable Development

EDUCATION
Banco do Brasil as Brazilians’ public bank is carrying out its new history, leading and committing itself to the new agenda of sustainable development, helping our country to promote the social equity, ecological rationality and to start to be the country of the present!
Business focused on sustainable development

Enterprise social action

Processes with social and environmental responsibility

Regional Sustainable Development - EDUCATION
• Banco do Brasil understands the position of social and environmental responsibility, the commitment of all organization areas, as a vehicle for the search of business sustainability.

• Beyond the economical and financial issues, Banco do Brasil incorporates the evaluation about social and environmental impacts due to its operation and management business and administrative processes performance. This is known as “triple-bottom-line”.

Regional Sustainable Development - EDUCATION
DRS – Regional Sustainable Development Program is a business strategy.

Aims to stimulate the sustainable development by economical, social and political agents mobilization.

Encourages the contribution net arrangement, spreading the knowlegde and promoting de sustainable development.

**Propose:**
- to generate work and income
- to democratize the access to the credit
- to stimulate the associationism and co-operation
- to promote managerial and technological qualification
- to contribute for the improvement of life quality indicators
Regional Sustainable Development -- EDUCATION

Value Chain

Productive Chain

Natural Resources

Production → Improvement → Storage → Commercialization

Remainder

- Add value to the product

Distribution channels

- Add value to the product

Regulating and financial agencies: government, financial institutions, associations, co-operative societies etc

Collective investments

- Social organization
- Social mobilization
- Opportunities identification
- Action integration

Result = Sustainable Business

Regional Sustainable Development - EDUCATION
Results until June 2007

1529 RSD Business Plan in execution
-3,343 involved municipal districts
-307,284 involved families
-R$ 1,285 million of programmed Banco do Brasil credits

3,561 qualified agencies

1,546 RSD Business Plan in elaboration process

4 states (Pará, Maranhão, Piauí and Pernambuco) in structuralization process of Education Reconciliation

2007 Goals

700 thousand attended families
R$ 1 billion available Banco do Brasil credits
Thank you!

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