# Education for Sustainable Development

BACKGROUND

- Education is an essential tool for achieving sustainability.

- Current economic trends are not sustainable and public awareness, education and training are necessary to move society towards sustainability.

- Difficult to envision a sustainable world, easier to identify what is unsustainable in our societies, eg inefficient use of energy, lack of water conservation, increased pollution, human rights abuses, overuse of personal transportation, consumerism, etc.

- However, like other concepts, such as democracy and justice, sustainability is hard to define and have multiple expressions in different cultures.

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- Education *about* sustainable development is an awareness lesson or theoretical discussion.

- Education *for* sustainable development (ESD) is the use of education as a tool to achieve sustainability: *Giving people knowledge and skills for lifelong learning to help them find new solutions to their environmental, economic and social issues.*

- For example, Driver Education seeks to make roads safer for travelers; Fire Safety Education seeks to prevent fires and loss of lives and property.

- Similarly, ESD promises to make the world more livable for this and future generations.

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SUSTAINABLE DEVELOPMENT

- Original description: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." (Bruntland Commission 1987).

- Rejects the contention that casualties in the environmental and social realms are inevitable and acceptable consequences of economic development.

- Paradigm for thinking about the future in which environmental, societal and economic considerations are balanced in the pursuit of development and the improved quality of life.

- 18 principles of sustainability listed by the *Rio Declaration on Environment and Development*.

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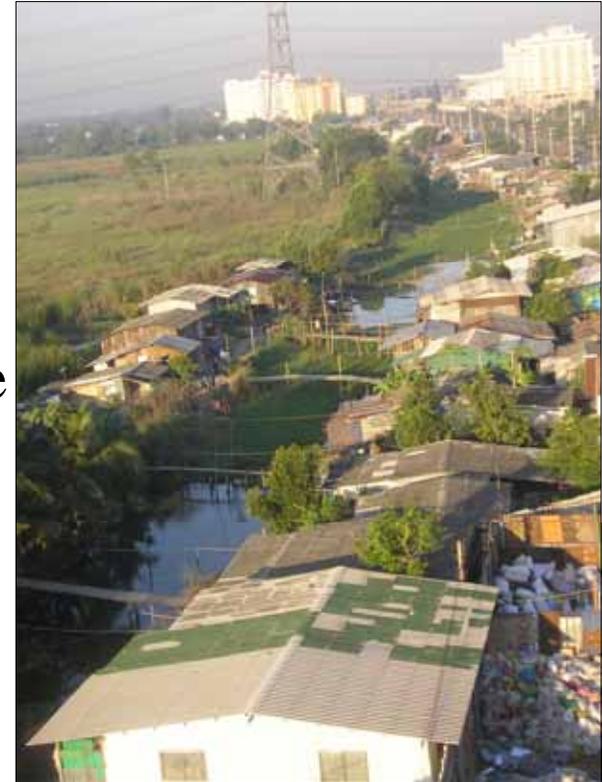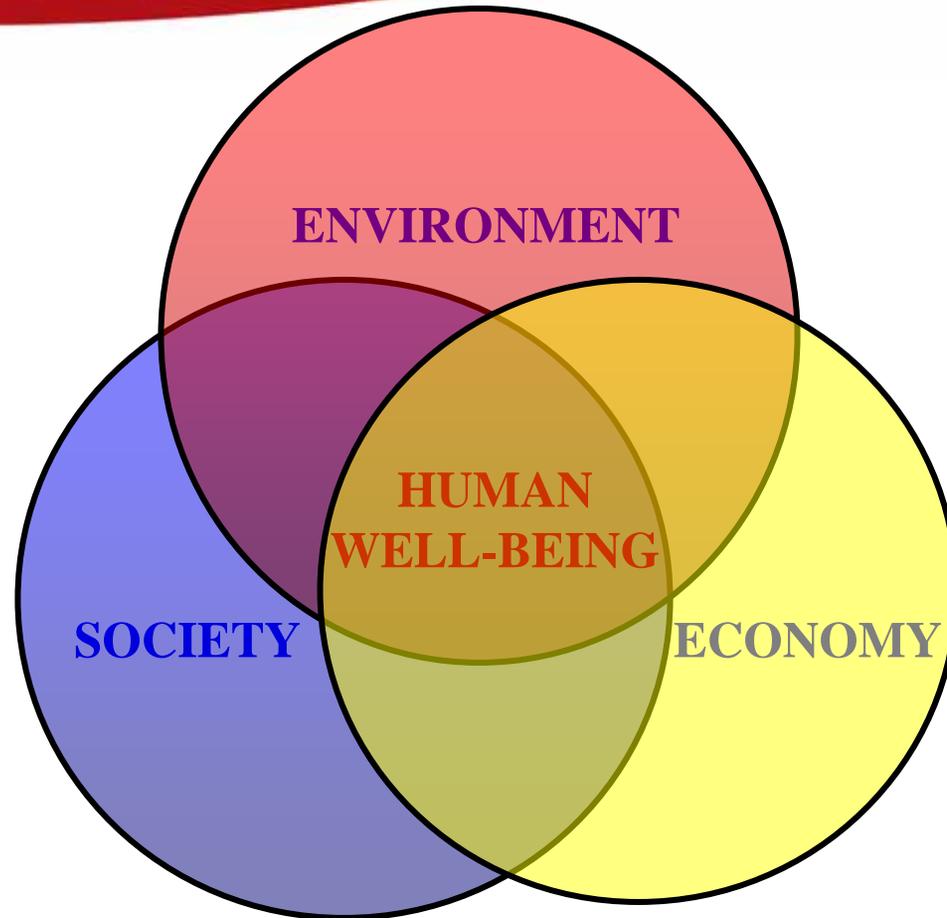
- The well-being of the 3 areas is intertwined, not separate. Eg. A healthy, prosperous society relies on a healthy environment to provide food and resources, safe drinking water and clean air for its citizens.
- As the 3 areas become more aligned, the area of overlap increases, and so does human well-being.

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EDUCATION: PROMISE & PARADOX

- Two major issues: Population and Resource Consumption. Increase in both jeopardize a sustainable future.

- Link between education, and fertility rate and resource consumption.

- Eg. Educating females reduces fertility rates/population growth, hence facilitates progress towards sustainability.

- Opposite for education and resource use: Educated people with higher incomes consume more resources.

- Eg. In U.S.A. high education rate, but per capita energy use and waste generation among the highest in the world.

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- The challenge is to raise education levels without creating an ever-growing demand for resources and consumer goods and the accompanying production of pollutants.

- Meeting the challenge demands reorienting curriculums to address the need for more sustainable production and consumption patterns.

- Every nation will have to re-examine curriculum at all levels.

- While it is necessary to understand sustainability concepts, simply increasing basic literacy, as currently practiced in most countries will not support a sustainable society.

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IMPLEMENTATION

- An educated citizenry is vital to implementing informed and sustainable development.

- Nations with high illiteracy and unskilled workforces have fewer development options: They are forced to buy energy and manufactured goods on the international market with hard currency.

- To acquire hard currency, international trade is needed. Leads to exploitation of natural resources or conversion of lands from self-sufficient family-based farming to cash-crop agriculture.

- An educated workforce is key to moving beyond an extractive and agricultural economy.

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DECISION MAKING

- Good community-based decisions – which will affect social, economic and environmental well-being – also depend on educated citizens.

- "Greener" development options expand as education increases.

- Eg. Community with skilled labor and technically trained people can persuade a corporation to locate a new IT facility nearby.

- Can also shape a community response by analyzing reports and data.

- Eg. Monitoring of water quality of local streams, based on which polluting industries can be pressured to regulate or relocate.

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QUALITY OF LIFE

- Education is also central to improving quality of life.

- Raises economic status of families, improves life conditions, lowers infant & maternal mortality and improves educational attainment of the next generation, thereby raising its chances for economic and social well-being.

- Improved education holds both individual and national implications.

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WHAT IS ESD?

- ESD carries with it the inherent idea of implementing programs that are locally relevant and culturally appropriate.

- All sustainable development programs including ESD must take into consideration the local environmental, economic and societal conditions. Therefore, will take different forms around the world.

- ESD was first described in Chapter 36 of Agenda 21. Four major thrusts:

1) Improving basic education

2) Reorienting existing education to address sustainable development

3) Developing public awareness

4) Training

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TYPES OF EDUCATION

- Formal education cannot implement ESD alone.

- Non-formal education – nature centers, NGOs, public health educators, agricultural extension agents – also play an important role.

- Informal education – local TV, newspaper, radio, and also popular theater, music, etc – is also needed.

- These three sectors should work together by dividing the ESD task by identifying the target audiences from the general public as well as themes of sustainability.

- They would then work within their mutually agreed realms.

- This division of effort would reach a broader spectrum of people and prevent redundant efforts.

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REORIENTING EDUCATION

- **Knowledge:** Need to select for supporting sustainability goals. Need to let go of irrelevant topics, even if taught successfully.

- **Issues:** Many issues as identified in the Rio Earth Summit and in subsequent meetings. Need to select locally relevant issues.

- **Skills:** Practical skills for lifelong learning, sustainable livelihood and sustainable lifestyle. Also skills to manage and interact with the local environment.

- **Perspectives:** For understanding global issues and local issues in global context. Need to consider from the viewpoints of different stakeholders for intra-national and international understanding.

- **Values:** Clarification and analysis are necessary. Values related to social justice includes ecological sustainability and resource conservation. Full range of existing values inventoried and new values, if relevant, need to be included.

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GUIDELINES FOR SUSTAINABLE DEVELOPMENT

Three conditions of a sustainable society (Daly 1989)

- Rates of use of renewable resources do not exceed their rates of regeneration.

- Rates of use of non-renewable resources do not exceed the rate at which sustainable renewable substitutes are developed.

- Rates of pollution emission do not exceed the assimilative capacity of the environment.

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Guidelines for restructuring world systems (Meadows 1992)

- Minimize the use of non-renewable resources.

- Prevent erosion of renewable resources.

- Use all resources with maximum efficiency.

- Slow and eventually stop exponential growth of population and physical capital.

- Monitor the condition for resources, the natural environment and the welfare of humans.

- Improve response time for environmental stress.

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FRAMEWORK FOR TEACHING/ANALYZING ENVIRONMENTAL ISSUES

1. What are the main historical and current causes (ie. physical/biotic, social/cultural or economic) of the issue?

2. What is the geographic scale, the spatial distribution and the longevity of the issue?

3. What are the major risks and consequences to the natural environment?

4. What are the major risks and consequences to human systems?

5. What are the economic implications?

6. What are the major currently implemented or proposed solutions?

7. What are the obstacles to these solutions?

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8. What major social values (eg. Economic, ecological, political, aesthetic) are involved in or infringed upon by these solutions?

9. What group(s) of people would be adversely impacted by or bear the costs of these solutions?

10. What is the political status of the problem and solutions?

11. How does the issue relate to other environmental issues?

12. What is a change you can make in your daily life to lessen the problem or issue?

13. Beyond changes in your daily life, what is the next step you could take to address the issue?

(The last two questions help people integrate knowledge into daily living)

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CHALLENGES AND BARRIERS TO ESD

- Increasing awareness that ESD is essential: First step of the re-orienting process.

- Structuring and placing ESD in the curriculum: Need to decide method of implementation according to context.

- Linking to existing issues – educational reform and economic viability: Reform instead of over-burdening; Changes should prepare a workforce that will make a country economically viable in the changing economy of the future.

- Facing the complexity of sustainable development concept: Challenge is to derive messages that illustrate the complexity without confusing or overwhelming the learner.

- Developing an ESD program with community participation: International or even national curriculum may not be relevant; Communities need to determine what would be applicable in their context; Typical pitfalls.

- Engaging traditional disciplines in a trans-disciplinary framework: Holistic and interdisciplinary, difficult to teach in traditional school settings where studies are taught in a disciplinary framework.

- Sharing the responsibility: Not only education ministry, all government departments that have a stake in sustainable development.

- Building human capacity: In-service and pre-service training; Leadership role of teacher educators.

- Developing financial and material resources: Not adequate allocation for ESD, although education budgets are increasing; Need to invest in technologies (eg. Internet for access to free ESD info/material) to offset expenditures.

- Developing policy: Must have an authoritative impetus from national or regional governments that will drive policy development; "Top-down" + "Bottom-up" efforts.

- Developing a creative, innovative and risk-taking climate: Teachers should be able to introduce new topics with educational and sustainability goals with support of administrators.

- Promoting sustainability in popular culture: "Disposable culture" – themes of sustainability are not prevalent in popular cultures and govt. policies; Potential for ESD to shape a "bottom-up" process.

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PROCESS FOR CHANGE

- Make the decision to act.
- Back up the decision with a rationale.
- Prepare a communication strategy to share your vision with the stakeholders and community.
- Prepare goals and milestones.
- Establish accountability and methods of programmatic evaluation.
- Review and revise goals and milestones.
- Rewards and celebrations.

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OTHER CONSIDERATIONS IN MANAGING CHANGE

- Mission and vision.
- Readiness and capability of change.
- Analyzing the nature of change required for reorienting education.
- Analyzing and planning commitment.
- Creating, implementing and monitoring plans.

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CONCLUSIONS

- ESD must be locally relevant and culturally appropriate, reflecting the environmental, economic and social conditions of the community.

- ESD should be created through a process of public participation in which stakeholders from across the community can express their visions for a sustainable community and what an education re-oriented to address sustainability should include.

- Each discipline, teacher and administrator can contribute to ESD.

- Communities and school systems should work together to achieve community sustainability goals.

- Education is our greatest hope for a sustainable future. By contemplating and taking on the important task of implementing ESD, one can bring the possibility of a more sustainable future to her/his community and nation.

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ACKNOWLEDGEMENT

This presentation is derived from the **"Education for Sustainable Development Toolkit"** (McKeown, R. 2002), which can be downloaded free of charge at http://www.esdtoolkit.org.

This is an example of cost-effective ESD resource material.