just text), and can be made accessible on real-time basis (and not waiting books to come out).

"Real issues" are too complex to comprehend by human mind, leading to division of labor among various scientific disciplines. By narrowing down the scope of analysis and by digging deeper, we will be able to reach the "truth", and then we start applying the knowledge in order to start solving the real issues. This is the contention of traditional approach. It is noted that there was no mechanism for integrating the piecemeal knowledge in order to respond to the real world challenges. It is true, on the other hand, no matter how many cases you collect, you still do not comprehend the truth in its entirety. But the gap can be narrowed by collaboration among different disciplines made possible by the application of ICT.

SLIDE Linkage with Field-based On-going Research

Case studies, theorization, empirical testing, and policy application are the four steps completing the cycle of scientific progress. We are now rediscovering the virtue of case approach to cope with new phenomena and special cases whereas established scientific mode would be to construct a general theory often in mathematical formulation and empirical testing of statistical significance.

There are several reasons for this.

(1) Issue-oriented approach is possible by the use of ICT compared to traditional discipline-oriented approach. More realistic situation can be dealt with. Case-based approach and field-based approach are properly handled with ICT overcoming distance (and to a certain extent, disciplinary divide), enabling real time, on-demand access.

(2) Specialization to a particular topic and/or an analytical tool can be integrated to give a whole picture by ICT. That is to say, specialization and integration are both possible. Traditional academic approach tends to focus on a narrow boundary, and there is no mechanism to integrate the parts into the whole.

(3) Network-based knowledge creation and sharing is made possible by ICT. Intellectual asset that lies outside a classroom can be accessed through networking, and a network can be altered or expanded according to the

needs. Autonomous, distributed, and collaborative mode of exploration becomes possible.
(4) Multimedia tools enhance the effectiveness of these approaches. Relevant questions can be raised by stakeholders and can be responded by people with expertise regardless of geographic distance or specialization.
(5) Locally-based case studies with regional/global network make participatory research and learning a reality. Seamless linkage in two directions can be achieved: from local to global and from global to local.

Advanced Seminar in International Environmental Studies: Asia Pacific Initiative for Sustainable Development

Background:

Asia Pacific covers 65% of the world population and two of the world's largest oceans. It is the region that is changing its economic profile very rapidly, but economic success comes with environmental repercussion, posing serious doubts about the sustainability of the development path. Despite its potentials, Asia Pacific region is still suffering from huge income differentials and digital divide. Such condition cannot be tolerated in a global community which is becoming increasingly transparent and interdependent. Human aspiration and environmental carrying capacity is a real issue to be tackled with not only in Asia Pacific but also in a global context.

The year 2005 marks the start of the Decade of Education for Sustainable Development (DESD). In the year 2002 when World Summit on Sustainable Development (WSSD) was organized in Johannesburg, world leaders announced initiatives to improve living conditions and environment around the globe. "Education and awareness-raising, capacity building and information for decision making and scientific capabilities" are listed among required international efforts along with additional financial resources, improved trade opportunities, and access to environmentally sound technologies (United Nations, Political Declaration and Plan of Implementation). The outcome of the WSSD include not only a negotiated implementation plan at the official levels but also partnership that will

achieve direct results. United Nations Secretary General Kofi Annan said, "... the most creative agent of change may well be partnerships ... among governments, private business, non-profit organizations, scholars, and concerned citizens."

Learning opportunities are enhanced by the application of information and communication technologies (ICT) which is the basis of having access to the knowledge stock and adding new information. World Summit on the Information Society (WSIS), spanning from Geneva Phase that took place in 2003 to Tunis Phase that is to be concluded in 2005, is yet another international forum that is intended to promote ICT-based networks, services, and applications and to overcome digital divide. "The objectives are to build an inclusive Information Society; to put the potential of knowledge and ICT at the service of development, to promote the use of information and knowledge for the achievement of internationally agreed development goals. (WSIS, Draft Plan of Action).

The shift of focus from economic development, where natural environment is treated as resources and intermediate inputs to production and human consumption, to sustainability, where human aspiration has to find a proper limit to make room for future generations and preservation of nature, changed the system boundary that we have to consider. Many academic disciplines are obliged to define the system boundary they are examining. Our knowledge has to be re-defined and looked at in a new context faced with the new challenge of sustainable development, a challenge that requires issue oriented approach rather than discipline-oriented one.

According to Gibbons, the new mode operates within a trans-disciplinary framework rather than mono- or multi-disciplinary. Mode 2 of knowledge production is "The complex of ideas, methods, values and norms that has grown up to control the diffusion of the Newtonian model of science to more and more fields of enquiry and ensure its compliance with what is considered sound scientific practice." In contrast, Mode 2 in Gibbons' term refer to "knowledge production carried out in the context of application and marked by its trans-disciplinarity; heterogeneity; organizational heterarchy and trans-science; social accountability and reflexivity; and quality control which

emphasizes context- and use-dependence." (Gibbons et al, 1994)

SLIDE Course Modules

Course Modules:

The joint lecture series starts with an introduction on the purpose, course outline, students, and lecturers from the Media Studio located at United Nations University in Tokyo. This is followed by introduction to telecommunication networks in Asia and Pacific Islands by PEACESAT based at University of Hawaii. The course management system located at UoH will be employed throughout the semester for handling course materials, announcing assignments, and information exchange among participants. The lecture series introduces field-based case studies that are the outcomes of ongoing research projects. The topics have been chosen to represent environmental challenges and opportunities in Asia Pacific. Each topic will be examined by two lecturers and commentators representing different approaches and different parts of the region.

The contents modules of the joint lecture series are as follows:

An Overview of the Region, Economic Development and Policy Issues: Asia Pacific is a vast region with marked differences in natural and social environment within it. There are some commonalities as well, such as remoteness among communities separated by land mass or oceans, predominant dependency on primary industries such as agriculture and fisheries, low per capita income, limited access to new technologies including ICT, cultural/religious/linguistic diversity, among others.

Greater Mekong Subregion (GMS): The Mekong River is an international river that flows through six countries in the GMS that serves for irrigation, navigation, hydropower generation, and fisheries. Countries have to come together to pursue a common development that is sustainable, whereas some of the objectives are conflicting. Asian Development Bank provides an overview of the region's current status and potentials.

Pacific Island Countries: Pacific islands have common ethnic traits; coming from Asian continent, the waves of people found their way through Papua New Guinea to Fiji and Samoa, branching out to reach New Zealand, Easter Island, and Hawaii, establishing the common roots to the Pacific community.