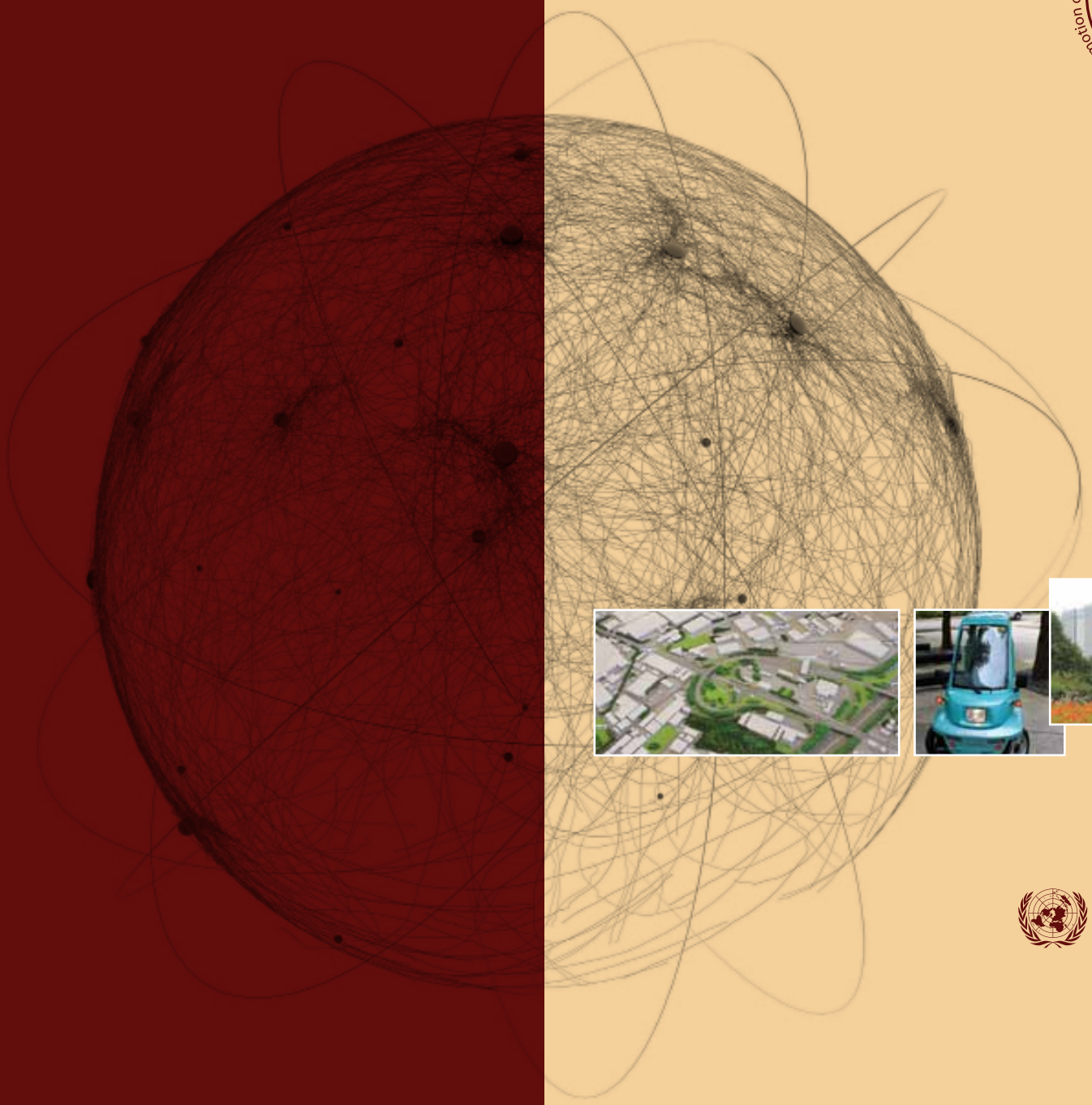


Promotion of Sustainability in Postgraduate Education and Research

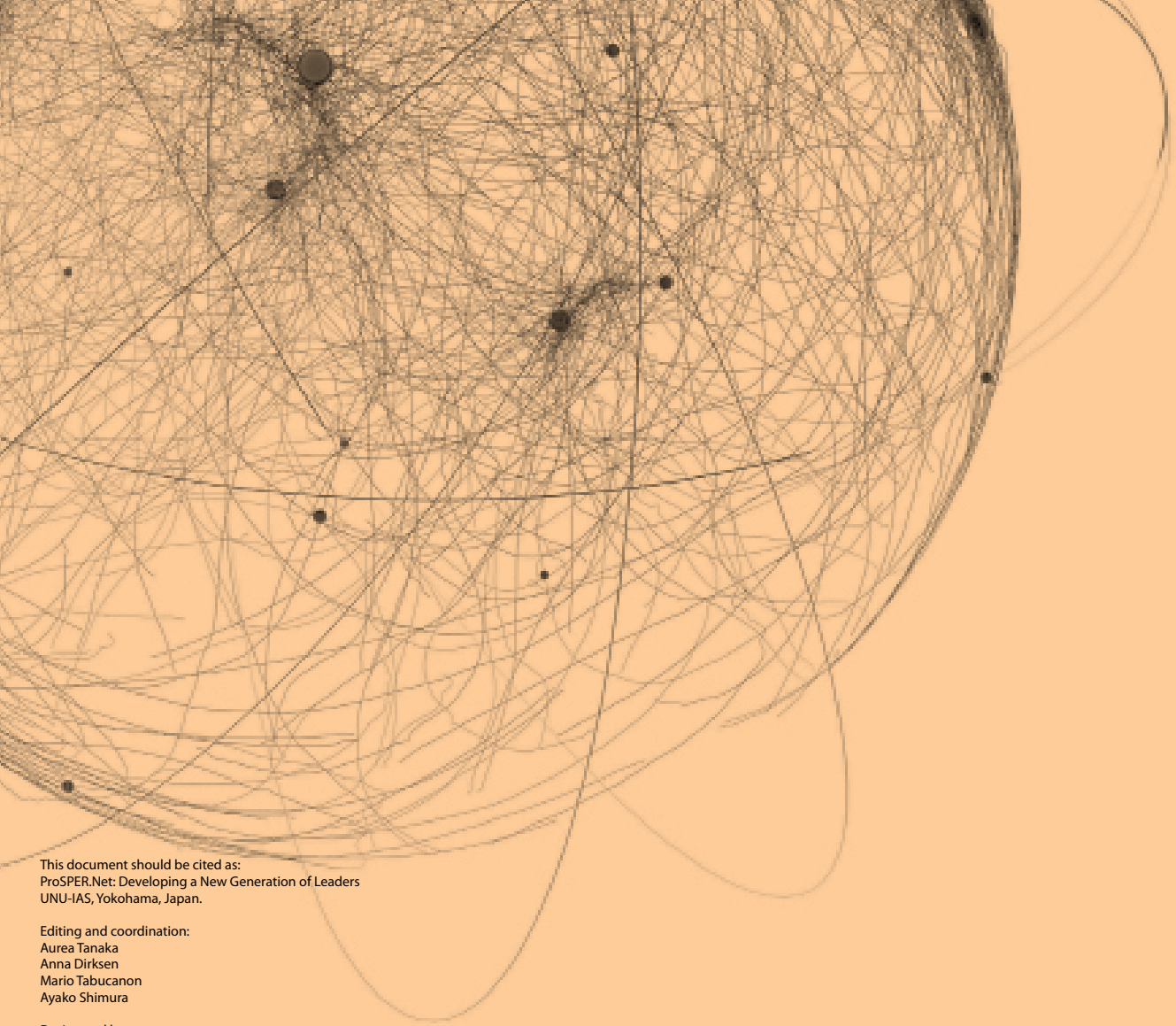
ProSPER.Net

ProSPER.Net:
DEVELOPING A NEW GENERATION OF LEADERS


UNITED NATIONS UNIVERSITY

UNU-IAS

Institute of Advanced Studies



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Editing and coordination:
Aurea Tanaka
Anna Dirksen
Mario Tabucanon
Ayako Shimura

Design and layout:
Fraser Biscomb

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6F International Organizations Center, Pacifico-Yokohama
1-1-1 Minato Mirai, Nishi-ku
Yokohama 220-8502, Japan
Email: ProSPERNet@ias.unu.edu
Web: www.ias.unu.edu/efsd

Promotion of Sustainability in Postgraduate Education and Research

ProSPER.Net

Promotion of
Sustainability in **P**ostgraduate **E**ducation and **R**esearch
Network

"As Higher Education institutions are to a large extent responsible for the training of teachers at the primary and secondary level, they are ultimately responsible for the development of new methods and new approaches to explaining sustainability to everybody, from pre-schoolers all the way to adults."

Prof. Konrad Osterwalder, Ph.D.,
Under-Secretary General of the United Nations;
Rector of the United Nations University

UNITED NATIONS UNIVERSITY

UNU-IAS
Institute of Advanced Studies

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FOREWORD

Just over four years ago, a select group of individuals from 11 higher education institutions in the Asia-Pacific region traveled to Yokohama, Japan to meet with members of the United Nations University Institute of Advanced Studies (UNU-IAS) Education for Sustainable Development Programme. At that gathering, those individuals, along with members of UNU-IAS and its partners at the Ministry of the Environment of Japan, mapped out a strategy that would help transform higher education towards a more sustainable future.

The initial idea was simple yet groundbreaking: recognise the essential role higher education institutions play in forming new generations of leaders and help those institutions impart sustainable practices to future professionals. From that starting point grew a powerful academic and research alliance that is now known as ProSPER.Net – the Promotion of Sustainability in Postgraduate Education and Research Network.

Since its official launch in 2008, membership in ProSPER.Net has grown from 18 founding members to 22. More importantly, those members have launched a wide range of initiatives, regional in scope but able to be applied to the work of higher education institutions worldwide.

In its first year, ProSPER.Net members started three collaborative projects, which integrated sustainability in business school curricula, created an e-learning programme on public policy and sustainable development practice, and developed quality training materials on sustainable development, respectively.

In subsequent years, the need to influence other areas and provide opportunities for different types of capacity development led ProSPER.Net members to work on projects such as innovative pedagogies for poverty reduction and the integration of sustainability in engineering and built environment curricula. Creating a tool by which universities could assess their performance according to education for sustainable development (ESD) principles was another significant ProSPER.Net project, especially because of its ability to recognise and encourage further ESD efforts by higher education institutions.

Perhaps the most well-known of ProSPER.Net projects are its two annual events, which have become flagship initiatives of the network: the ProSPER.Net Young Researchers' School and the ProSPER.Net-Scopus Young Scientist Award in Sustainable Development, which was made possible through a partnership with Elsevier, whose Scopus database is the largest in peer-reviewed literature.

These projects are just a few examples of the exciting and fruitful work of ProSPER.Net members that have taken place throughout the network's first four years. The success of these projects has become the foundation for future network activities and growth. Even whilst network activities are being consolidated, ProSPER.Net is looking to expand. The network is creating new partnerships and strengthening its current ties to similar global and regional networks worldwide. It is also expanding in size, as the network accepts new members and helps old and new ProSPER.Net members develop an increasing number of new, innovative projects.

As we look to the future, we must ensure that ProSPER.Net members continue to learn from each other, sharing their unique perspectives and moving beyond geographic, national and institutional boundaries to collaborate multilaterally. Indeed, it is this sharing of information, experiences, knowledge and work that is at the very heart of the network and is what will ensure its success now and in the years to come.

On behalf of the ProSPER.Net Secretariat, I would like to acknowledge the generous contribution and ongoing support of the Ministry of the Environment of Japan, as well as each member's active participation over the years. Without either of those key elements, ProSPER.Net could never have grown so successfully beyond the initial ideas discussed at UNU-IAS four years ago.

With this book we hope to demonstrate the richness of ProSPER.Net members' work during the past years, keeping in mind further encouragement to reach unexplored areas and promote meaningful actions towards the sustainable future that is our common goal.

Kazuhiko Takemoto
Programme Director for ESD
ProSPER.Net Secretariat, UNU-IAS

ProSPER.Net MEMBERS

- RMIT University, Australia
- Institute of Applied Ecology – Chinese Academy of Sciences, China
- Tongji University, China
- TERI University, India
- Universitas Gadjah Mada, Indonesia
- Chubu University, Japan
- Hokkaido University, Japan
- Hosei University, Japan
- Iwate University, Japan
- Miyagi University of Education, Japan
- Nagoya University, Japan
- Okayama University, Japan
- Rikkyo University, Japan
- Shinshu University, Japan
- University of Tokyo, Japan
- Yokohama National University, Japan
- Universiti Sains Malaysia, Malaysia
- University of the Philippines, Philippines
- Yonsei University, Republic of Korea
- Chulalongkorn University, Thailand
- Asian Institute of Technology (Regional)
- University of the South Pacific (Regional)

WHAT IS ProSPER.Net?

ProSPER.Net is an alliance of leading universities in the Asia-Pacific region that are committed to integrating sustainable development into postgraduate courses and curricula. The network – the Promotion of Sustainability in Postgraduate Education and Research Network – is developing a new generation of leaders who can best tackle global sustainability challenges in the face of rapid environmental degradation. By changing the way higher education institutions teach students about sustainability, ProSPER.Net improves the ways in which future professionals manage sustainability issues across a wide variety of disciplines.

ProSPER.Net was founded in June 2008 within the framework of a broader international agenda that recognises the importance of education and research to help build a more sustainable future. There are currently 22 members, spread throughout Asia-Pacific, that have strong education and research programmes dedicated to sustainable development and related fields. Together, they work towards a common cause: creating multi-disciplinary solutions, including education and research programmes, to respond to a wide range of sustainable development challenges.

To date, the network has helped integrate sustainable development into the curricula of business schools and it is currently developing similar ideas but in the engineering and built environment field. Members have also created an online postgraduate programme in public policy and sustainable development, have designed short courses and modules on social entrepreneurship skills and managing social businesses, and have trained educators and researchers on sustainable development. The network has also developed training materials for business schools based on the principles of the United Nations Global Compact, set up an alternative university appraisal system and created a researchers' school on sustainable development.

ProSPER.Net has also created the acclaimed ProSPER.Net-Scopus Young Scientist Award in Sustainable Development, which is given annually to young scientists based in the Asia-Pacific region for significant contributions in the field of sustainable development.

The research developed by ProSPER.Net and its regional projects, programmes and policies have been adapted and applied in universities and other higher education institutions across the region. ProSPER.Net is an initiative of the Education for Sustainable Development Programme at the United Nations University Institute of Advanced Studies (UNU-IAS), which uses research and capacity development to integrate components of education for sustainable development (ESD) into formal and informal learning processes in all sectors of society. ProSPER.Net is fortunate to have the patronage of the Ministry of the Environment of Japan for its joint programmes and activities.

Since its inception four years ago, ProSPER.Net has achieved significant success in shaping the ways in which students at higher education institutions learn about sustainability issues. This publication shares the lessons learned from those experiences and highlights successful case studies that can be replicated elsewhere. It is through the sharing of these case studies that we, as a global community, can continue to improve upon our initial successes in building a more sustainable future for all.

THE HISTORY OF ProSPER.Net

In response to the United Nations Decade of Education for Sustainable Development (UNDESD 2005-2014), inspired by regional policymakers' calls for producing a new cadre of leaders for Asian sustainability, and cognizant of the need to strengthen higher education for sustainable development and the importance of networking of higher education institutions (HEIs) in facing the challenges resulting from rapid and uneven growth in the Asia-Pacific region, the United Nations University Institute of Advanced Studies (UNU-IAS) embarked in 2007 on a noble mission to build an alliance of leading higher education institutions in the Asia-Pacific region to promote the sustainability paradigm in postgraduate education and research.

On 19-20 November 2007, an inception meeting was held in Yokohama, Japan among UNU-IAS, 11 HEIs that had a history of collaboration with UNU, and a number of partner organisations including the Ministry of the Environment of Japan (MOEJ). Participants at the meeting mapped out a strategy and pathway toward establishing what would become ProSPER.Net, an academic and research alliance. Under the leadership of UNU-IAS, the group developed the concept upon which the network charter was framed and the by-laws formulated. The timing was opportune since MOEJ was also shaping its own Environmental Leadership Initiatives for Asian Sustainability (ELIAS) and both UNU-IAS and MOEJ initiatives shared a similar vision. It was the consensus to name the network 'Promotion of Sustainability in Postgraduate Education and Research Network' with the acronym 'ProSPER.Net', and for the network to be under the auspices of UNU-IAS. Participants were asked to develop joint projects aligned with the purpose of the network and addressing the goal of integrating a sustainability paradigm into postgraduate courses, curricula and research.

On 5-6 March 2008, an organisational meeting was held in Yokohama where further discussions on proposed joint projects were conducted and the by-laws discussed and endorsed. It was at this meeting where planning for the launch of the network began. By this time, the number of participating HEIs had risen from 11 to 18. Three joint projects were initially identified, namely 'Integrating Sustainable Development in Business School Curricula' led by the Asian Institute of Technology (AIT), 'Developing a Postgraduate Curriculum on Public Policy and Sustainable Development' led by TERI University, and 'Training, Education and Awareness Programme for Researchers and Educators of Sustainability' led by Universiti Sains Malaysia. These inaugural joint projects have been completed and to a certain extent implemented.

The final organisational meeting was held on 19 June 2008 followed by the first meeting of the network's General Assembly on 20 June which, among its other actions, elected member institutions to serve on the Board, which also held its first meeting on the same day at Hokkaido University.

It was on 21 June 2008 in Sapporo, Japan where representatives of all founding member institutions and partners gathered for the official launching of ProSPER.Net. The auspicious event was held in conjunction with Hokkaido University's 'Sustainability Week 2008 – G-8 Hokkaido Toyako Summit Round' celebratory activities leading to the G-8 Summit held in Hokkaido in the early part of July 2008. The heads of the following founding member institutions or their representatives expressed their strong commitment to the new alliance and formally approved the network's concept, charter and by-laws:

- RMIT University, Australia
- Tongji University, China
- TERI University, India
- Universitas Gadjah Mada, Indonesia
- Hokkaido University, Japan
- Iwate University, Japan
- Miyagi University of Education, Japan
- Nagoya University, Japan
- Okayama University, Japan
- Rikkyo University, Japan
- Shinshu University, Japan
- University of Tokyo, Japan
- Universiti Sains Malaysia, Malaysia
- University of the Philippines, Philippines
- Yonsei University, Republic of Korea
- Chulalongkorn University, Thailand
- Asian Institute of Technology (Regional)
- University of the South Pacific (Regional)

Present to witness the ProSPER.Net launching were representatives of partner organisations, namely UNU-IAS, MOEJ, United Nations Environment Programme (UNEP), Ministry of Environment of Australia, Institute for Global Environment Strategies (IGES), Elsevier Japan, and Yokohama National University which later became a member of ProSPER.Net.

Great collective efforts were invested in the shaping and functioning of the alliance, but the vital question is, then and now, how to make the network not only sustain but also thrive and prosper through cooperation and the dedication of members and partners. The network, indeed, has withstood the test of time and now, four years hence, the alliance has continued to expand and is getting stronger.

ProSPER.Net ACTIVITIES

Using ProSPER.Net as a platform of collaboration, ProSPER.Net members pursue postgraduate education and research on sustainable development, with a strong emphasis on education for sustainable development.

ProSPER.Net-SCOPUS YOUNG SCIENTIST AWARD IN SUSTAINABLE DEVELOPMENT

The ProSPER.Net-Scopus Young Scientist Award (YSA) is annually given to young scientists and researchers in recognition of their outstanding work for sustainable development. The award was created in 2009, as a result of a partnership with Elsevier, responsible for Scopus, the largest database of peer-reviewed literature.

As ProSPER.Net strives to integrate sustainability issues in different fields, award categories also change every year to reach a wide range of areas. Therefore, categories such as energy, water, agriculture and food security, economics, business and management, science and technology with a focus on poverty eradication, information and communications technology (ICT) for sustainable development, biodiversity and natural resource management have been chosen in the past three years.

Candidates need to be affiliated with an institution in Asia-Pacific, to have completed their Ph.D. studies within a span of five years and demonstrate their contribution to sustainable development. The top three finalists in each area are invited to present their work in a symposium. A panel of three experts in each category selects the winner, who is awarded a cash prize and a prestigious fellowship provided by the Alexander von Humboldt Foundation.

With this initiative, ProSPER.Net has been rewarding young scientists and researchers who creatively think about our current complex problems and apply their cutting-edge research in concrete initiatives that promote community development, social and economic inclusion, efficient use of natural resources, improved livelihoods, better health care and more.

2011 Winners and their stories

Arul Chib from Nanyang Technological University in Singapore won the Young Scientist Award in the category of ICT for Sustainable Development. Making use of the rapidly growing cellular networks in developing countries, Chib used mobile phone technology to improve communication and medical information between, and amongst, health workers and local communities. In tsunami-struck Aceh, Indonesia, this method proved to be effective, decreasing the response time in critical cases. It also helped stimulate a preventative approach to health care by facilitating medical data-sharing between rural midwives and the urban health infrastructure, leading to improved maternal and infant health. Chib's work has also been applied in remote areas of countries such as China, India, Nepal, Peru, Singapore, Thailand and Uganda.

'It's wonderful to receive the Young Scientist Award because it has become a lever that can be used to influence and inform policymakers and decision-makers. Getting the award brings with it a spotlight that allows me to establish networks in new areas. It's about more than recognition; it's about allowing me to move into and learn more about the pillars in which I wouldn't necessarily consider myself an expert.'
Arul Chib

Rajeev Bhat's research on wild legumes won him the Young Scientist Award in the category of Science and Technology with a Focus on Poverty Eradication.

Concerned with global levels of malnutrition and poverty, Bhat has focused his research work on exploring the nutritional qualities of wild legumes/seeds, with an aim to improve their overall qualities to be an efficient alternative local food supply. Bhat, presently based at the Universiti Sains Malaysia, through his extensive efforts and hard work, identified low-cost, healthy and safe alternative sources of protein among wild legumes, thus providing appropriate scientific basis for local practices.
In addition to the nutritional benefits of his research, Bhat has also opined that cultivating wild legumes may lead to better land use, promoting agricultural development and consequently improve the economic self-sufficiency of local farmers.

'I was really happy and felt honoured when my name was announced for this prestigious award. I felt satisfied that my work and efforts throughout all these years had been finally recognised internationally and by world renowned organisations. This award will help me strengthen my work base at international levels and to collaborate and work with like-minded people whose common aim is to provide a dignified life to all humans. There might be several youngsters all over the world

who, like me, are involved in various arenas of research work aimed at improving the living standards of poor and making this world a better place to live in. Definitely, this type of award and recognition, including the wide publicity it's been given, will inspire them to provide more inputs to that work.'
Rajeev Bhat

A young professor at Beijing Forestry University, Junguo Liu, won the prize in the area of Biodiversity and Natural Resource Management for his research on sustainable use of freshwater and ecosystem services and management. Part of Liu's work is assessing the use of green water (water stored in soil from precipitation) and blue water (water from rivers, lakes, reservoirs, ponds and shallow aquifers), which has led to increased attention to green water management. According to his findings, 84% of the water used for agricultural purposes worldwide in the year 2000 was green water. His research has the potential to significantly impact poverty levels through promoting rain-fed agriculture.

'This is an encouraging award. It gives me encouragement for my past work and will also give me more motivation in furthering my research in natural resources assessment and management. This award shows that the best policy relevant research can make an impact. I hope this will encourage more young scientists to work on natural resources protection.'
Junguo Liu

YOUNG RESEARCHERS' SCHOOL

The ProSPER.Net Young Researchers' School (YRS) is an annual activity that aims to further knowledge, understanding and skills in sustainability research and practice by promoting a network of researchers and future professionals working with sustainability-related projects.

ProSPER.Net members started discussing the best approach and format for a summer school in sustainable development in 2009. The primary goals were to offer a differentiated experience to enhance doctoral students' understanding of sustainable development and foster a network of researchers in the region.

From earlier discussions it was recommended that the programme should be designed in a way to expose participants to sustainability issues, while offering them ample opportunities to discuss local challenges in light of their field of expertise and background. The programme would focus on specific needs of the Asia-Pacific region, given ProSPER.Net's thrust and regional approach, providing a forum to address relevant issues that have transdisciplinary dimensions.

With a mixed programme that includes lectures, field trips and group work, participants shall develop a research proposal on ideas emerging over the course of the programme. Students under the supervision of resource persons within different groups are set out to prepare a focused and structured research proposal.

Also, a component to assist participants in developing research communication skills was added, which has been implemented through activities such as the three-minute thesis competition, an exercise in which researchers present an outline of their research in three minutes using only one slide, and Our World 2.0 workshop offered by UNU Media Centre, where participants are invited to rethink the way research is disseminated and new possibilities opened by web-based tools like Our World 2.0, UNU's web magazine.

With all this, ProSPER.Net managed to design a unique programme to assist students in enhancing their knowledge on sustainable development, developing presentation skills, research planning and networking.

The programme was originally developed by Royal Melbourne Institute of Technology (RMIT) University, with RMIT hosting the inaugural YRS at their Viet Nam campus in Ho Chi Minh City in 2010. The idea to rotate locations to expose students to different sustainability challenges in Asia-Pacific is an integral part of the school.

"When you spend two intensive weeks with a group of strangers you have to step out of your comfort zone and almost speak in a different 'language' – people are from a variety of disciplinary and cultural backgrounds and have different senses of humour. In the process of doing this what often happens is that we come to learn a little more about ourselves, which certainly happened with me."

Jessica Siva
RMIT University, Australia

"I would highly recommend other Ph.D. students to apply for ProSPER.Net summer school as I feel this is an event that helps one grow both personally and professionally. It also aids in developing a network for young researchers and encourages them to pursue further in this field of research."

Richa Sharma
TERI University, India

In 2011 Hosei University welcomed students in Tokyo, Japan and in 2012 the YRS will be held in Yogyakarta, Indonesia, hosted by Universitas Gadjah Mada.

With each new location, there is a new theme: in 2010, RMIT proposed 'A Sustainable Future for the Mekong Delta Region'; in 2011, Hosei University chose 'Learning from Japan's Experience on Urban Sustainability' and in 2012, Universitas Gadjah Mada will take up the challenge to discuss with students local development initiatives for 'Building a Resilient Society in Asia'.

Resource persons and participants are invited from ProSPER.Net member institutions and spend two intensive weeks immersed in sustainability-related discussions, conducting fieldwork, developing research and communication skills, and also working in groups to develop research proposals based on focused lectures and field trips.

The YRS also benefits from a collaborative partnership with the German Federal Ministry of Education and Research, through which winners of the Green Talent programme have been joining ProSPER.Net students, enriching the exchanges with different perspectives, experience and background.

The programme attracts doctoral students from across the world through their affiliation with ProSPER.Net members. The participation of Green Talent winners, the prestigious award from the German Federal Ministry of Education and Research, also ensures that promising researchers from other countries take part in the activities and engage with ProSPER.Net students. Faculty members join these individuals at the school, engaging and fostering a wide range of discussion on transdisciplinary issues, all within an environment that favours interactions that transcend cultural barriers and differing perceptions and perspectives.

According to Professor Yuji Suzuki, Chair of the Organising Committee for the 2011 YRS, for Hosei University, the YRS hosting was a significant opportunity to reinforce the meaningfulness of being a ProSPER.Net member. For all involved, it was an excellent occasion to exchange ideas, methodologies and activities, a challenge for the research and teaching staff to lecture and to discuss with students from diverse disciplines and an enlightening experience for ProSPER.Net members' students to consider learning from diversity.

ProSPER.Net JOINT RESEARCH PROJECTS

Since its inception, ProSPER.Net members have launched a wide variety of joint projects ranging from the creation of an online postgraduate programme in public policy and sustainable development practice to the integration of sustainable development in business school curricula.
The following pages show just a few examples of this exciting work.

SUSTAINABLE BUSINESS AND SOCIAL RESPONSIBILITY COURSE DEVELOPMENT

Summary:
Since its launch in 2010, the Sustainable Business and Social Responsibility Course Development project has delivered a useful and practical framework for the development of course materials and case studies in its respective fields. A key element of the initiative is the development of educational materials for both short courses and degree programmes in sustainable business and social responsibility. Aligning course materials closely with the United Nations Global Compact – a strategic policy initiative of the United Nations for businesses that are committed to aligning their operations and strategies with ten universally accepted principles in the areas of human rights, labour, environment and anti-corruption – is also a major part of the partners' work on the project.

Throughout the three-year project a large body of course material has been and will continue to be generated and refined. Among its significant outputs are:

(a) the development of new courses related to sustainability that also helped in launching stand-alone sustainability-focused degree programmes in business schools;

(b) a collection of case studies on corporate social responsibility and social businesses;

(c) an exploration on the integration of sustainability in business curricula in the Asia-Pacific region;

(d) the development of a new set of courses/ training materials and case studies, available for teaching as stand-alone courses or for integration into other sustainability-related courses in business education; and

(e) the development of specific materials covering the contemporary challenges of sustainable development, such as climate change and biodiversity strategies for the private sector.

The Asian Institute of Technology (AIT) led this project in collaboration with Universiti Sains Malaysia (USM), Universitas Gadjah Mada (UGM) and Yonsei University. Shinshu University participated only in the first year of the project and there are plans to continue collaborating from the third year on.

Many of the materials and case studies created thus far have been used by a wide variety of institutions in their teaching for both degree courses and short courses.

Background:
In the field of corporate sustainability there has long been a lack of good, quality course material and teaching case studies. There has also been an absence of strong experiential learning elements that build suitable skills, particularly in the field of social business.

This joint project helps fill that gap through the development of quality teaching case studies on the successful development and operation of social businesses, as well as other materials that address social enterprise within the context of poverty alleviation and pro-poor development. The project also links traditional literature on entrepreneurship to the particular task of developing and managing a social business, something that had also been absent in previous course material.

Prior to the project, there was a dearth of usable materials that closely aligned the ten universally accepted principles of the United Nations Global Compact with the needs of business and management education. As such, part of the project's objectives was to resolve that absence.

ProSPER.Net Joint Project In-depth:
In rolling out the three-year project, partners are ensuring a strong connection between the outcomes of years one, two and three. For example, in the first year, there was a substantial amount of fieldwork done to build case studies on social business and poverty alleviation. During that first year, partners were able to develop new courses related to sustainability that helped launch stand-alone sustainability-focused degree programmes in business schools. They also developed a collection of case studies on corporate social responsibility and social businesses and began to explore the integration of sustainability in business curricula in the Asia-Pacific region.

In the second year, the course development built upon those initial efforts to further enrich the body of knowledge on sustainability in business education. A new set of courses, training materials and case studies were developed and made available for teaching as stand-alone courses and for integration into other sustainability-related business education courses.

The project partners took curricula development initiatives that had been undertaken by partners and further aligned those initiatives with the ten principles of the United Nations Global Compact. Embedding those initiatives into management education was seen as a way to encourage future managers to align companies with the global standard. It would then be possible to further develop the project's work on integrating sustainability into management education curricula through a tangible corporate social responsibility initiative.

As well as developing the teaching materials described above, a particular area of cooperation between partners was in the writing of practical in-class case studies for teaching purposes.
The case studies on social businesses in particular could be used as material for social enterprise and corporate social responsibility courses.

For example, findings from social businesses in Malaysia offered some understanding of how businesses there operate.

Continued overleaf

Continued from overleaf

The case study showed that the owners of those businesses were comprised of young and energetic entrepreneurs and the challenges they faced, especially in regard to financial and human resources, were well-documented along with their strategies for overcoming those challenges.

The case studies on the integration of the United Nations Global Compact showed mixed results in terms of the level of integration. Out of three companies, only one had highly integrated the principles of the Compact. The drivers, challenges and benefits of practicing the principles in the Compact were also investigated. A common driver found across all three cases was the commitment of the top executives and management to the Compact's integration. In addition, that case study showed the difficulties in translating principles into practices, despite the fact that all three companies were practicing some form of corporate social responsibility before they signed onto the Global Compact.

Lessons Learned and Next Steps:
Many of the materials and case studies created thus far have been used by the partners in their teaching for both degree courses and short courses. In particular, the materials have been used on the new AIT Master's Degree on Corporate Social Responsibility with very positive feedback from students. The case studies have also been used by other institutions outside of the group of partners.

While the first two years of the project delivered a useful and practical framework for the development of course materials and case studies, it became apparent that there remained a great need for more specific materials covering some of the contemporary challenges surrounding sustainable development and the role of the private sector. During year three of the project, these more specific materials and case studies will be developed, specifically around climate change and biodiversity strategies for the private sector.

The partners involved in the project expect that all materials will be used more widely in the future by all institutions, providing a deep and positive impact on their students' learning and development.

Key Takeaways:
- In the field of corporate sustainability there has long been a lack of good, quality course material and teaching case studies. There has also been an absence of strong experiential learning elements that build suitable skills, particularly in the field of social business.
- The Sustainable Business and Social Responsibility Course Development project has delivered a useful and practical framework for the development of course materials and case studies in sustainable business and social responsibility.
- Through this project, course materials have also been closely aligned with the United Nations Global Compact, which is a strategic policy initiative of the United Nations for businesses that are committed to aligning their operations and strategies with ten universally accepted principles in the areas of human rights, labour, environment and anti-corruption.
- Many of the materials and case studies created thus far have been used by a wide variety of institutions in their teaching for both degree courses and short courses.
- While the first two years of the project delivered a useful and practical framework for the development of course materials and case studies, there is a need for more specific materials covering some of the contemporary challenges surrounding sustainable development and the role of the private sector.

ProSPER.Net JOINT RESEARCH PROJECTS

CAPACITY-BUILDING FOR POLICYMAKERS:
THE DESIGN AND DELIVERY OF AN E-LEARNING PROGRAMME ON SUSTAINABLE DEVELOPMENT PRACTICES

Summary:
To meet the challenges of sustainable development, policymakers must have a basic understanding of the science, economics and social aspects of the issue, as well as a strong understanding of cross-sectoral linkages.[1] This joint project helps foster the systematic development of core competencies in sustainable development practice among development practitioners and policymakers in the Asia-Pacific region.

Through the project, sustainable development practitioners are given easy access to convenient, quality-controlled and relevant learning opportunities through a unique combination of modern web-based technologies and the pooled resources of a network of experts. Project efforts have also been directed towards the development of an online post-graduate diploma programme on sustainable development practices in public policy.

Launched in August 2008, this project was led by TERI University (TU) in New Delhi with the objective of developing regional sustainable development campaigners among ProSPER.Net universities and of developing open access learning resources relevant to sustainable development problem-solving in the Asia-Pacific region. The joint initiative has the participation of five universities from the Asia-Pacific region: TU, New Delhi; Asian Institute of Technology (AIT), Thailand; University of South Pacific (USP), Fiji; Universiti Sains Malaysia (USM); and Tongji University, China. These universities serve as the core members of the project.

Background:
To help focus the project, TU carried out a needs assessment survey in the South Asia region. The assessment was a modified version of an exercise carried out by TU for the International Commission on Education for Sustainable Development (ICESD).[2] The survey revealed that there is a dearth of training resources that are truly cross-disciplinary in nature. The conventional lecture-based training methodology rarely provides the stimulus to find innovative solutions and has been ineffective for trans-disciplinary aspects of sustainable development, as faculty imparts subject-specific information to participants and does not help draw linkages with subjects in other sectors.

With the emergence of e-learning, there are now new, innovative tools and techniques that help transform the learning process and facilitate learning. Resources can be developed with the active participation of faculties from various knowledge domains to produce learning resources that: explain the trans-boundary nature of natural resources; describe limitations and opportunities at regional-level resource-sharing; and are in coherence with sectoral issues. The e-learning method can also be more effective than traditional learning as it can be less demanding on time and it can progressively add to professional competencies. This project takes advantage of the asynchronous nature of e-learning to make it easier for professionals to easily access quality, cross-sectoral resources.

The survey revealed that there is a dearth of training resources that are truly cross-disciplinary in nature

[1] Report from the International Commission on Education for Sustainable Development Practice, 2008.

[2] Report on South Asia Regional Consultations on Development Policy & Practice, TERI University, June 2008

ProSPER.Net Joint Project In-depth:
In June 2009, after much preparation, the project partners launched a website (*http://elearn.teriuniversity.ac.in/showcat.php?itemid=2&id=6*) with a call for online applications of candidates for a programme consisting of courses on Natural Resource Management, Economic Reasoning for Public Policy, and Science and the Policy of Climate Change (Figure 1). More than 100 applications and expressions of interest were received. Thirty-eight students representing 13 countries and diverse ages, experiences and professions were eventually selected for the programme.

The programme delivered content in a variety of ways, all online and interactive. E-mails, chat sessions and continuous engagement through assignments were all part of the three-semester course.

Figure 1. Home page of the programme

Prior to the programme's launch, a workshop with all partner universities was organised to develop the structure and pedagogy for the three courses. Dissemination workshops were also carried out by the partner universities in their respective regions to get feedback on the programme's course design and to publicise the programme amongst mid-career policymakers. That, combined with a series of video conferences with partner universities and faculty brainstorming sessions, helped to create the design of the model curriculum. The underlying principle in the design of individual course content was the need to:

- Impart an understanding of the global context;
- Address regional capacity needs;
- Emphasise critical enquiry;
- Enhance problem-solving skills;
- Provide the impetus to creative thinking;
- Provide cross-sectoral linkages;
- Illustrate key topics through case studies; and
- List useful web links and other resources for in-depth information.

The programme was developed on a Moodle platform version and supported by a back-end server with a dedicated firewall for security.

Each course was created with well-structured assignments, descriptive in nature and designed to test students for conceptual clarity. Of the 38 participants, eight successfully completed the programme and were awarded a degree by TU.

The project was evaluated at three stages: pre-launch, during implementation and after completion of the programme by the students. The pre-launch evaluation helped partners exchange information and lessons. During the mid-project evaluation students provided feedback about the programme, the courses and on any problems they faced. That feedback guided changes in the interactive features of the website during the semester.

Project evaluation

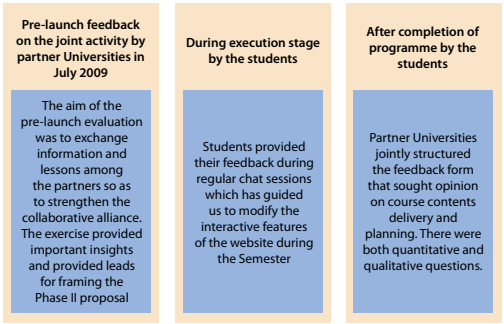

Figure 2. Continuous evaluation for programme development

Lessons Learned and Next Steps:
One of the key challenges in the development of an online programme is the need for a significant investment of professional time and money for the development of useful learning resources. Without upfront budgetary provision or immediate future tangible benefits, the commitment from top management may be lacking. Another challenge proved to be the high dropout rate of students. This might have been due to the lack of face-to-face interaction and the absence of tuition fees for learning. In the future, having a minimum fee to join the programme might reduce the dropout rates to a significant extent.

Overall, this project has enriched the understanding of professionals in the region for sustainable development problem-solving. The learning resources from the project can be put into an open pool where practitioners have easy access. Many of the programme participants have been from developing nations, particularly from small island nations such as the Solomon Islands, Fiji, and Tuvalu, among others. Information-sharing and providing access to best practice case studies will have long-term regional impacts in such areas.

The results of the programme have strengthened the belief that this activity can benefit other ProSPER.Net member universities. The learning resources and training material can also be shared by other universities in the region. In the long-term, universities can convert the material into local languages, customise it to make it relevant to local and regional priorities and issues, and run the programme in their country at a decentralised level. The initiative can be further advanced by adding to the online resources and developing additional course modules. TU in collaboration with partner universities can also offer a capacity-building programme for faculty of non-participating universities of ProSPER.Net who are interested in adopting such programmes.

Key Takeaways:

- Policymakers must have a basic understanding of the science, economics and social aspects of sustainable development, as well as a strong understanding of cross-sectoral linkages in sustainable development.
- This project provides sustainable development practitioners with easy access to convenient, quality-controlled and relevant learning opportunities through a unique combination of modern web-based technologies and the pooled resources of a network of experts.
- The programme consists of courses on Natural Resource Management, Economic Reasoning for Public Policy, and Science and the Policy of Climate Change and delivers content in a variety of online and interactive ways.
- The programme's results have strengthened the belief that this activity can benefit other ProSPER.Net members and universities outside of the network.
- In the long-term, universities can convert the material into local languages, customise it to make it relevant to local and regional priorities and issues, and run the programme in their country at a decentralised level.

ProSPER.Net JOINT RESEARCH PROJECTS

An extensive review of the literature and case studies from various resources was undertaken and the most suitable ones were selected for inclusion in the book

GENERIC MODULES AND RESOURCE MATERIALS FOR EDUCATION FOR SUSTAINABLE DEVELOPMENT

Summary:
This project involved the publication of a book entitled "Education for Sustainable Development – Issues, Principles and Practices for Global Application", which is a joint effort by ProSPER.Net institutions to aid teachers and researchers in their endeavours to integrate a sustainable development paradigm in courses and programmes.

The book consists of a collection of diverse case studies and sustainability endeavours that have been and are currently being carried out by ProSPER.Net members, as well as the best practices of other sustainability-driven organisations that have made integration of sustainability a priority. This publication will function as a manual, playing the role of a working handbook which will assist readers in better understanding the implementation and inclusion of sustainability in areas as diverse as business, education, health and technology. It is also hoped that the manual will provide readers with the inspiration and practical know-how needed to make sustainability integration an integral part of their respective institutions.

The project is mostly designed for the academic community, with the hope that the book can contribute positively toward helping the academic and research communities attain global sustainability goals. The modules in the book are generic and inclusive in nature and contain introductory level material that can be used by faculty members from any academic discipline. Overall, the handbook is not meant to be an exhaustive reference that pushes new approaches or advocates new principles and practices but rather an easy, readable compilation of references and materials developed by many researchers and practitioners in the area of sustainable development.

In November 2008, a group of experts and practitioners met at Universiti Sains Malaysia (USM) in Penang to develop the major framework for the book. Other meetings and exposure workshops were held at TERI University in India in February 2010 and Universitas Gadjah Mada in Indonesia in April 2010 to further discuss the content of the book. USM acted as the secretariat for the book's publication throughout the project.

Background:
Despite an abundance of resources on education for sustainable development (ESD) – including some on good teaching practices and the integration of sustainability into curriculum – there was no handy and practical manual available when this project was launched that could function as a quick reference for ESD initiatives. Resources and publications that were available at the time this project was initiated were either on sustainable development (SD) alone or on the implementation of ESD and SD; there were none that encompassed all three components. Realising this gap, the partners in this project developed a book with a module that included resource materials which would improve one's understanding of SD as well as define its meaning in relation to faculty members and the possibilities through which they can teach SD in their various disciplines.

ProSPER.Net Joint Project In-depth:
A group of academicians, experts, practitioners and activists gathered in a workshop at USM in November 2008 to produce the first major framework for this project. Later, a series of exposure workshops were held at TERI University in India in February 2010 and Universitas Gadjah Mada in Indonesia in April 2010 to further discuss the content of the book.

It was decided that the book would cover a wide range of challenges, complexities, benefits, theoretical concepts and case studies in terms of sustainable development and its relations with higher education. With a host of practical approaches as well as theoretical concepts, it would expand the knowledge of the institutions of higher education over the current sustainability trends.

The hope was that the book would act as an essential guide for its readers - especially practitioners and those at higher education institutions - who are trying to wade through the myriad terms, frameworks, claims, counter-claims and case studies about the importance of sustainability initiatives. The book would thus be useful for academics and practitioners new to sustainability, as well as to well-seasoned sustainability professionals.

Following the initial series of workshops, an extensive review of the literature and case studies from various resources was undertaken and the most suitable ones were selected for inclusion in the book "Education for Sustainable Development – Issues, Principles and Practices for Global Application". The book was finalised in March 2012 and is expected to be published by mid-2012.

Lessons Learned and Next Steps:

Prior to the publication of this book there had been no handy and practical manual that could function as a quick reference for ESD, despite an abundance of resources on education for sustainable development. This book will now be the go-to manual to assist readers in obtaining a better understanding with regard to the implementation and inclusion of sustainability in different areas and fields.

It includes resource materials that provide general reading to improve understanding of sustainable development and define the meaning of sustainable development in relation to various disciplines. It also helps faculty members understand the many ways in which sustainability can be taught in their diverse subject areas.

A multi-disciplinary approach was taken to creating this book and the outcome of the project has shown that similar collaborative approaches should be encouraged in the future. The thoughts and ideas collected from experts in different disciplines have extensively enriched the final output of this project. Future projects should build on this highly successful approach.

Key Takeaways:

- Despite an abundance of resources on ESD, there was – prior to this project – no handy and practical manual that could function as a quick reference for ESD initiatives.
- The book created through this joint project functions as a manual which will assist the reader in obtaining a better understanding with regard to the implementation and inclusion of sustainability in different areas and fields.
- The book also provides inspiration and the practical know-how needed to make sustainability integration an integral part of a reader's institution.
- It will hopefully become an essential guide for its readers – especially practitioners and those at higher education institutions – who are trying to wade through the myriad terms, frameworks, claims, counter-claims and case studies about the importance of sustainability initiatives.
- A multi-disciplinary approach was taken to creating this book and the successful outcome of the project has shown that similar collaborative approaches should be encouraged in the future.

ProSPER.Net JOINT RESEARCH PROJECTS

INNOVATIVE PEDAGOGIES IN POVERTY REDUCTION

Summary:
Following the successful implementation of the Poverty Reduction and Agricultural Management (PRAM) Programme by the Asian Institute of Technology (AIT) and local partners of the Wetlands Alliance, AIT proposed, in early 2010, a project aimed at distilling lessons learned from the PRAM programme.

PRAM focuses on poverty reduction as a priority and measurement of success. The programme targets local governmental officers - often based in remote rural areas - and offers them an educational platform with a practical programme of professional competency development. The programme suits local needs and has the potential to positively impact poverty levels.

With this model as a case study, AIT and partners, namely the University of the Philippines, Universitas Gadjah Mada and Universiti Sains Malaysia, developed a project whose main objective was to identify innovative educational approaches to improve postgraduate curricula, incorporating the needs of the region's poorer groups and serving as a guide to change educational practices.

Providing a comprehensive overview of the PRAM initiative and its educational processes, partners worked on analysing opportunities and constraints of implementing such an innovative programme.

Training people to solve problems is a far more effective and empowering long-term strategy

Background:
The lack of capacity of government officials has been cited as one of the main hindrances to the further development of some regions in Asia-Pacific, particularly in Lao People's Democratic Republic (PDR), one of the poorest countries in Southeast Asia. Although some training programmes were offered by internationally supported initiatives, none of them were specifically designed with a particular attention to local challenges and needs.

As the PRAM concept describes, the programme was developed under the vision that 'rather than solving problems for people, training people to solve problems is a far more effective and empowering long-term strategy'.

The successful implementation of the PRAM programme stimulated ProSPER.Net members to develop a research project in which key lessons would be identified to guide changes in curriculum transformations, which could create meaningful educational initiatives that address existing needs with a specific focus on reducing poverty levels in the region.

ProSPER.Net Joint Project In-depth:
With a view to identifying innovative pedagogies that may assist curriculum transformations of educational activities primarily focused on poverty reduction, members engaged in consultations and a workshop with partners of the PRAM initiative, conducting field research and interviews.

The workshop and field visit were organised in Savannakhet Province, Lao PDR, from 20 to 23 October 2010. The main purpose of the workshop was to document its achievements and challenges, and to discuss future developments. Distilling lessons learned from the implementation and assessment of the PRAM initiative was also an objective of the workshop.

Participants started with a field visit to a Technical Service Centre located in one of the poorest areas in Laos. Divided into groups and sent to observe projects being implemented by PRAM students, participants engaged in an assessment exercise complemented by presentations on elements pertaining to the PRAM initiative and discussions.

A number of positive outcomes were readily identified following the field visits: improvement of local people's livelihoods; stronger and closer ties with the local community; use of local and inexpensive solutions to improve their activities; multiplying effect in terms of creating alternative solutions; establishment of local networks that can provide useful information, improving the sharing of information and awareness raising on simple measures that can be taken to secure food and a better livelihood.

These first-hand observations stimulated discussions and assessment of the PRAM initiative with regards to its teaching and learning methods, its multi-partner approach and expertise, its contribution to the development of curriculum, identification of challenges, needs and possible solutions, as well as future steps.

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One of the outstanding conclusions was that the same characteristics that make the PRAM initiative unique and effective also pose challenges for its improvement and development. The diversity of stakeholders involved in the project (i.e. government, universities, non-governmental organisations) ensure creativity and a fresh approach to traditional ways of thinking, teaching, learning and doing things; at the same time there is a need to establish a clear governance mechanism with well-delineated roles and responsibilities.

Flexibility of curriculum design to meet the needs of poor communities and to bridge educational gaps among students is also highly desirable. However, a minimum standard should be determined not only for the subsistence of the initiative, but also to comply with quality control requirements. In this connection, constant evaluation of both student and community needs is indispensable for the overall design, development, implementation and outcomes of the initiative and should be regularly carried out.

Project-based learning and problem-based learning methods used by PRAM teachers require openness, constant evaluation for improvement and adaptation to changing realities. Since this approach was identified as the key to the successful impact observed among students and the implementation of their projects, it was strongly recommended that these methods continue to be used and improved.

The PRAM initiative is a multi-stakeholder endeavour that empowers government officials through a capacity-development programme designed to attend to local needs of both students and the community. It promotes an efficient use of existing resources, complemented by teaching and learning methods and project implementation towards improving livelihoods and food security for poverty reduction.

Although some aspects should be further developed to increase accountability, improve the implementation process and ensure its continuation through regular quality assessment control, the model has been successfully implemented and ProSPER.Net members may consider replicating it in their countries, thus contributing to the overall development of local and poor communities.

Lessons Learned and Next Steps:

The project highlighted the importance of partnerships to design and deliver a tailored programme that builds capacity whilst addressing local community needs. Also, it emphasised the importance of creativity and flexibility to adapt to different circumstances that may, for example, bridge educational gaps amongst students, as well as methods such as project-based learning and problem-based learning, which stimulate students to work with a participatory approach, use existing resources efficiently and implement meaningful actions.

Key Takeaways:

- This project has helped to identify important elements for designing and delivering tailored programmes focused on poverty reduction.
- By involving various stakeholders in the project, partners were able to ensure that all perspectives were fully encompassed.
- It is necessary to ensure the use of creative, open and flexible tactics to address community needs and bridge educational gaps.
- The use of project-based and problem-based learning methods helped secure a "fit-for-purpose" approach.
- Constant evaluation is required to improve and adapt the programme to a dynamic reality.

ProSPER.Net JOINT RESEARCH PROJECTS

ALTERNATIVE UNIVERSITY APPRAISAL

Summary:
The Alternative University Appraisal (AUA) project, launched in June 2009, created a new collaborative system to enable colleges, universities and other higher education institutions to better assess their education for sustainable development (ESD) activities. Proposed by Hokkaido University as a joint ProSPER.Net initiative, the AUA project has also created a learning community to advance ESD, in which higher education institutions can consult and share concerns, as well as best practices.

The AUA system consists of three components: Self-Awareness Questions (SAQs); Benchmarking Indicators Questions (BIQs); and Dialogue. SAQs and BIQs serve as a data source and make up the foundation for dialogue among universities. Dialogue is the component through which the institutions share concerns, best practices and generally foster an ESD learning community. In addition to these three components, the AUA project also created an ESD Archive, which is a repository of ESD activities conducted by higher education institutions.

Hokkaido University assumed the role of secretariat for the AUA project. Other participating member institutions are Asian Institute of Technology, TERI University, Universiti Sains Malaysia, Yonsei University, the University of Tokyo, UNU-IIST and UNU-IAS. The project is funded by ProSPER.Net, as well as Hokkaido University and the International Cooperative Initiative 2009–2011 of the Ministry of Education, Culture, Sports, Science, and Technology of Japan.

With continuous refinement, the AUA system can become a guiding force to shape the universities of today and tomorrow towards a more sustainable future for all.

Background:
Higher education institutions (HEIs) have expressed a strong desire to be recognised for sustainability initiatives. While creating assessment tools for universities has long been an object of study, there has been little agreement on the evaluation methods, frameworks and indicators that would be appropriate for the assessment of ESD performance in HEIs. The AUA project addresses that gap.

The recent increase in popularity of HEI comparisons, rankings and classifications can be attributed to the growth in the number of HEIs and fast-growing competition among those institutions. Higher education stakeholders, such as heads of HEIs and academic and administrative staff, closely monitor such comparisons and cite positive results when possible. However, the higher education community continues to contest the value and question the methodology utilised in many of these rankings.

HEIs have expressed a need for new, alternative and more comprehensive tools for university appraisal systems that would better address the multiple roles of higher education. In addition, there is a desire for these systems to better respond to the needs of the 'users', to increase transparency about institutional differences of mission and performance, and to provide a new way of collecting and presenting objective and comparable data.

ProSPER.Net Joint Project In-Depth
The AUA project responds to the demands from HEIs for an alternative to their current appraisal systems. The AUA system reorients higher education and society toward sustainability, valuing HEIs that strive for sustainability, improving ESD practices, and creating forums for the exchange of ideas. The ultimate goal of the project is to establish strong relations among HEIs to help further ESD as a whole.

The strategic vision of the project is to:

1) Evaluate and assess an institution's ESD activities by using the new assessment tool;

2) Enable the institution to consult with the AUA dialogue committee on ideas, concerns, problems and solutions based on the results of the new assessment; and

3) Invite the institution to an ESD learning community where they can provide, receive and share best practices with other institutions and partner organisations.

In order to create the AUA assessment tool, several existing ESD assessment tools were carefully analysed and evaluated: the College Sustainability Report Card, the Earth Charter (EC)-Assess, Monitoring and Assessing Progress during the UN Decade of Education for Sustainable Development (UNDESD) in the Asia-Pacific Region, and the Sustainability Tracking, Assessment, and Rating System (STARS). Several meetings in Japan, Malaysia, and India were held and extensive tours undertaken to collect feedback and promote the

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new model. Dialogue with a variety of stakeholders at local and international conferences, meetings, and other events helped shape the system, as did dialogue within sustainability-related networks such as the International Association of Universities (IAU), Association for Advancement of Sustainability in Higher Education (AASHE), International Conference on Sustainability Science (ICSS), and Higher Education for Sustainable Development (HESD) Forum in Japan. Thanks to these efforts, the AUA Project was recognised by more than 150 institutions. AUA core member meetings also helped shape the design of the system.

The system has three main components:

Self-Awareness Questions (SAQs)
SAQs are a set of self-awareness questions designed to help interested HEIs enhance their ESD-related activities and identify their strengths and weaknesses.

Benchmarking Indicators Questions (BIQs)
BIQs are an objective assessment tool that evaluates the quality of institution in the general field of sustainable development. Designed to provide quantitative data, indicate sustainability trends and visualise the location of individual institutions, there are four indicators under this concept: Governance, Research, Education and Outreach.

Dialogue (Peer-Consultation)
The Dialogue Model, previously known as the Peer-Consultation Model, helps HEIs share ESD practices and activities.

In 2010, an ESD Archive was added as part of the project. The archive is a web-based ESD resource library that collects and offers examples of good practice developed throughout the AUA project, as well as by other ProSPER.Net projects and external sources.

Together, the AUA system addresses a number of key challenges, including:

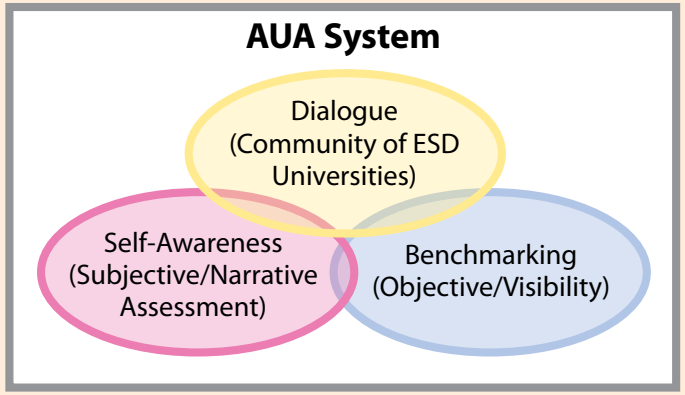
- How one measures ESD and the ESD knowledge of graduates from HEIs;
- How one best teaches sustainable development's multidisciplinary concepts in a way that is relevant to various subjects;
- What the barriers are for including sustainability-related content in HEI curricula and how one overcomes those barriers;
- How one implements sustainable development and reporting within academic institutions; and
- How one creates incentives to further innovation in pedagogy that incorporates sustainable development in education.

Lessons Learned and Next Steps:
To date, AUA project members have reported satisfaction with the overall self-assessment process. The AUA system has afforded them an opportunity for critical self-reflection, helped them reconsider their ESD practices and helped pinpoint various strengths and weaknesses.

There have been several concerns raised throughout the project regarding quantitative data. Feedback suggested that it was not possible or too labour-intensive to collect information dating back to 2005 and that some terms and expressions, such as "ESD courses", "full time positions", and "ESD-related jobs after graduation", were poorly defined and understood across countries, institutions, and even individuals. Those questions have since been revised and the latest version is more focused on narrative and qualitative questions that can be used as a gateway to dialogue by a growing number of institutions.

The objective is to transform the AUA system from a project to a service in 2012. The new service would be known as SUSTAIN (SUSTainability Appraisal for Academic Institutions) and would continue to expand the ESD learning community, raising the quality and impact of sustainability-related activities. Greater discussion is required in order to better define this new direction. In addition, the Dialogue component requires further financial support and greater assistance from external ESD specialists. The ESD Archive continues to operate well and will remain available for basic and comprehensive ESD references.

As AUA members recognise diversity, innovation and change towards sustainable development, the project will continue to be refined. This continual improvement can help the AUA system become a guiding force that shapes the universities of today and tomorrow.



Key Takeaways:

- The Alternative University Appraisal (AUA) project, launched in June 2009, was developed as a viable alternative to existing and conventional university ranking systems.
- The AUA system enables colleges, universities and other higher education institutions to better assess their education for sustainable development (ESD) activities.
- Universities can aspire to be rated highly according to both traditional and ESD measures.
- While project members have reported satisfaction with the overall self-assessment process, there have been several concerns raised regarding quantitative data.
- With continuous refinement, the AUA system can become a guiding force to shape the universities of today and tomorrow towards a more sustainable future for all.

INTEGRATING SUSTAINABILITY EDUCATION INTO EXISTING ENGINEERING AND BUILT ENVIRONMENT CURRICULUM

Summary:
This ProSPER.Net project is aimed at developing a guide for university academics and curriculum developers to integrate sustainability thinking and practice into built environment disciplines, such as engineering and architecture at undergraduate and postgraduate levels.

The project's main objectives are to:

1. Integrate sustainability thinking and practice into engineering and built environment curricula through a professional development programme for university academics;
2. Identify key priorities for inclusion in the professional development programme; and
3. Contextualise the priorities within global and local policy commitments for sustainability in the built environment, and climate change and biodiversity strategies for the private sector.

In addition, the project will also help expand and develop further courses and offerings and will help forge links and partnerships with industry.

The rationale behind the project is capacity-building in education for sustainability for the built environment and skills development and enhancement for graduates in an increasingly globalised market.

The immediate partners in the project are faculty members in engineering and built environment curricula at ProSPER.Net institutions and industry stakeholders - including government bodies - of ProSPER.Net institutions. Participation is not restricted to just ProSPER.Net institutions, as a broader partnership will lead to broader outcomes and greater benefits. Due to time and budget constraints, eight universities are currently participating in the project. Those universities are: Asian Institute of Technology (Thailand), Tongji University (China), University of the Philippines (Philippines), National Institute of Advanced Studies in Architecture (India), Universiti Sains Malaysia (Malaysia), Universitas Gadjah Mada (Indonesia), Vietnam National University – HCM (Vietnam), and RMIT University (Australia).

Background:
Buildings and cities are measures of economic health in most developed and developing economies across the globe. Half of the world's population live in urban areas, and this share is increasing over time, projected to reach 60% by 2030 (Kamal-Chaoui & Robert 2009).

The built environment is constantly changing, reflecting government policies, legislative changes and community expectations. The building sector has major impacts not only on economic and social life, but also on the natural and built environment. The building and construction sector is a key sector for sustainable development and typically provides 5% to 10% employment nationally and generates between 5% and 15% of a country's gross domestic product (GDP) (UNEP 2007).

Strategies to deliver low carbon resilient built environments require a range of different stakeholders to work effectively. Government targets, both voluntary and mandatory are putting pressure on new graduates to be fully abreast of relevant global and local issues to make them work-ready and be prepared to face the challenges of the working life. This, in turn, is putting pressure on the academic staff to ensure that a fine balance of theory and practical knowledge within the constraints of other issues such as accreditation requirements are maintained.

Further, increasing globalisation is finding graduates and senior professionals working on projects away from their home bases. This is putting additional pressures on graduates to understand not just the requirements for meeting the local regulatory minimum but also best practice requirements for sustainability in these regional centres.

This joint project addresses an urgent need for integrating sustainability thinking and practice in built environment curricula.

The built environment is constantly changing, reflecting government policies, legislative changes and community expectations.

ProSPER.Net Joint Project In-depth:
The project was launched in December 2011. In focusing on the main issues about applying the principles of sustainability in the built environment and the tensions with regulatory and best practice approaches, a regional approach is required. The regional approach of this project considers international, national, local and sub-regional concerns in relation to sustainability teaching and expectations of both graduates and the industry.

One of this project's core activities is a workshop that will bring together relevant participants to share their knowledge and experiences, and to recommend practical approaches for integrating sustainability issues in a way that works best for all stakeholders. The colloquium will contextualise the current state of sustainability integration in the existing built environment curricula in the Southeast Asia-Pacific region and establish opportunities for networking, building close links within academia and industry.

The project also espouses a collaborative inquiry process wherein the role of the industry in assisting to achieve outcomes and ensuring that sustainability goals of projects are met is vital. Preliminary survey of literature demonstrated that this inquiry process will not only help build the capacity of institutions but also maintain enthusiasm and interest in change and sustainability issues through partnerships, linkage and networks established which in turn further enhances opportunities for collaborative actions (Lyth, Nichols & Tilbury 2007). Other key activities in the project include desktop research, the integration of learnings into existing curricula and evaluation and monitoring leading to a report.

Dissemination of the project will not just be through the United Nations University Institute of Advanced Studies (UNU-IAS) and participant universities but also through other fora such as regional and international conferences, learning and teaching expos, industry bodies and groups such as national and international engineering/architecture/building peak bodies as well as Green Building Council bodies in the respective countries.

The wider aim of the project is to ultimately expand and develop further courses and offerings to students within this rapidly changing environment. Wherever possible, this applied research project will draw on links with industry, creating opportunities for networking and creating close links with academia and industry.

Lessons Learned and Next Steps:
An initial literature review of what is currently taught in each partner institution will lead to the development of a template to streamline and compare programmes and curricula. This will help ascertain the state of play amongst the institutions and guide the structure of the workshop.

The completed literature review has highlighted the need for the definition and resolution of the following issues:

1. Pedagogical implications in the built environment discipline;
2. Learning outcomes – student experiences;
3. Industry input – students as employable graduates;
4. Challenges to the professionals in the field of the built environment, their institutional structures and their boundaries; and
5. Clarification of the multi-disciplinary nature of the built environment area both from education through to practice.

To address those issues effectively in the guide, the participation of the industry in the workshop is viewed as crucial.

Once completed, the project is expected to provide a guideline for key priorities that can be included in the built environment curricula of participating institutions, with attendant suggested content information. Monitoring these priorities for a whole year and seeking academic, student and industry feedback will determine which of these priorities have the best impact from academic, industry and student perspectives.

The information collected throughout the various stages will lead to the development of a guide for curriculum developers, programme/course coordinators and teachers in the engineering and built environment discipline. It is expected that the guide will catalyse change in existing curricula. The education framework informing the guide will be set within an industry context where possible.

ProSPER.Net JOINT RESEARCH PROJECTS

Key Takeaways:
- Government targets are resulting in increased pressure on new graduates and, in turn, on academic staff to ensure that graduates are fully abreast of relevant global and local issues so they are ready to work and face the challenges of today.
- This joint project is aimed at developing a guide for university academics and curriculum developers to integrate sustainability thinking and practice into built environment disciplines, such as engineering and architecture at undergraduate and postgraduate levels.
- The project takes a regional approach that takes into consideration international, national, local and sub-regional concerns in relation to sustainability teaching; it also espouses a collaborative inquiry process wherein the role of the industry is made vital.
- One of this project's core activities is a workshop that will bring together relevant participants to share their knowledge and experiences, and will result in recommendations for practical approaches for integrating sustainability issues.
- Overall, the project will lead to the development of a guide for curriculum developers, programme/course coordinators and teachers in the engineering and built environment discipline; this guide has the potential to catalyse change in existing curricula.

BECOMING A ProSPER.Net MEMBER

Membership in ProSPER.Net is limited to higher education institutions located in the Asia-Pacific region that offer postgraduate education and research in sustainable development and in education for sustainable development related fields. ProSPER.Net also has an affiliate membership category. Affiliate members of ProSPER.Net are higher education institutions located outside the Asia-Pacific region working together with the network for the benefit of the region. Application for membership should be made through the network's Secretariat (UNU-IAS). The application should include a statement of intention and should be accompanied by a formal dossier demonstrating the institution's strength and expertise in the areas of SD and ESD at the postgraduate level. The ProSPER.Net General Assembly (GA) takes decisions on membership. There may also be ProSPER.Net partners representing higher education institutions or other stakeholders such as private sector, governments, research institutions and international organisations, who would work with the members of ProSPER.Net to achieve the network's goals.

To find out more about becoming a ProSPER.Net member, please contact *prospernet@ias.unu.edu*

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UNITED NATIONS UNIVERSITY

UNU-IAS

Institute of Advanced Studies

CONTRIBUTORS

Sustainable Business and Social Responsibility Course Development

Richard Welford is Adjunct Professor at Asian Institute of Technology

For more information, please contact: *dferguson@ait.ac.th* or *rjwelford@gmail.com*

Capacity-Building for Policymakers

Arun Kansal is Associate Professor at TERI University

Arabinda Mishra is Associate Professor at TERI University

Rajiv Seth is Professor at TERI University

For more information, please contact: *akansal@teri.res.in*

Generic Modules and Resource Materials for Education for Sustainable Development

Zainal Abidin Sanusi is Deputy Director of the Higher Education Leadership Academy (AKEPT Malaysia)

Hamoon Khelghat-Doost is Research Officer at the Centre for Global Sustainability Studies at Universiti Sains Malaysia

Govindran Jegatesen is Research Officer at the Centre for Global Sustainability Studies at Universiti Sains Malaysia

Asyirah Abdul Rahim is Coordinator of RCE Penang at Universiti Sains Malaysia

For more information, please contact: *hamoonk@hotmail.com*

Innovative Pedagogies in Poverty Reduction

For more information, please contact: *prospernet@ias.unu.edu*

Alternative University Appraisal

Arun Kansal is Associate Professor at TERI University

Tae Joon Lah is Associate Professor of Department of Public Administration and Director of the Institute of Public Affairs at Yonsei University

Tomoka Haraya is Project Coordinator at the Office of International Affairs, Hokkaido University

Eijun Senaha is Director of Sustainability at the Office of International Affairs, Hokkaido University

For more information, please contact: *aua@sustain.hokudai.ac.jp*

Integrating Sustainability Education Into Existing Engineering and Built Environment Curriculum

Usha Iyer-Raniga is Associate Professor at the School of Property, RMIT University

Mary Myla Andamon is Research Fellow at the Centre for Design, RMIT University

For more information, please contact: *usha.iyer-raniga@rmit.edu.au*