RESEARCH AND INNOVATION IN EDUCATION FOR SUSTAINABLE DEVELOPMENT

Wim Lambrechts / James Hindson (editors)
IMPRINT

Research and Innovation in Education for Sustainable Development.
Exploring collaborative networks, critical characteristics and evaluation practices.

January 2016
ISBN: 978-3-902959-08-9

Publisher:
Environment and School Initiatives - ENSI, ZVR-Zahl 408619713, Vienna, Austria
Editors: Wim Lambrechts and James Hindson
Proofread: Wim Lambrechts
Assistance: Günther Pfaffenwimmer
Lay-out: Walter Reiterer

CoDeS has been funded with support from the European Commission.
This publication of CoDeS reflects the views only of the author, and the European Commission cannot be held responsible for any use which may be made of the information contained therein.
Schooling for Education for Sustainable Development: The contributions of Asia-Pacific Regional Centres of Expertise

Ingrid Mulà  
RCE Penang, University Sains Malaysia, ingrid.mula@gmail.com
Munirah Ghazali  
RCE Penang, University Sains Malaysia, munirah@usm.my
Mario Tabucanon  
United Nations University Institute for the Advanced Study of Sustainability (UNU-IAS), mario.tabucanon@gmail.com
Sachiko Yasuda  
United Nations University Institute for the Advanced Study of Sustainability (UNU-IAS), yasuda@unu.edu

ABSTRACT
Ten years after the launch of Regional Centres of Expertise (RCEs) on Education for Sustainable Development (ESD), there is evidence confirming that much has been achieved and accomplished by these multi-stakeholder networks, committed to building more sustainable communities through learning and action. Indeed, in Asia-Pacific, RCEs have contributed to advancing understanding of the links between ESD and sustainability challenges such as climate change, health, biodiversity & traditional knowledge and disaster risk reduction. This has been achieved through hands-on projects, research and engagement opportunities in all learning and education spheres. This chapter reviews projects and experiences led by RCEs in Asia-Pacific that specifically support the process of embedding sustainability principles in teacher education and in primary and secondary schools. It identifies current trends, analyses teaching and learning approaches and assesses the contributions of RCEs in the region in bringing about innovation for sustainable development. The chapter concludes with a series of recommendations to enhance the impact and relevance of RCEs for effective implementation of the Global Action Programme (GAP) on ESD.

KEY WORDS
Asia-Pacific; Education for Sustainable Development (ESD); Global Action Programme (GAP); Regional Centres of Expertise (RCEs); Schools.
A DECADE OF REGIONAL CENTRES OF EXPERTISE ON ESD

Ten years ago the United Nations University (UNU) acknowledged the first group of seven Regional Centres of Expertise (RCE) on Education for Sustainable Development (ESD) at the UNU-UNESCO International Conference on Globalisation and ESD and during the celebration of the Asia-Pacific launch of the United Nations Decade of Education for Sustainable Development (DESD) (28-29 June 2005, Nagoya, Japan), (Fadeeva and Mochizuki, 2008; 2014). Today, the network has expanded across the world and consists of 135 RCEs in Africa, the Americas, Asia-Pacific, Europe and the Middle East.

RCEs are regional or local networks of existing individuals, organisations and groups who are committed to building more sustainable communities through education and learning. They include partners with a diversity of backgrounds and from different sectors who work together to develop and implement innovative ESD projects and programmes at the community level. RCEs are unique because they bring together members who might not usually work together, but who are critically placed to create local solutions to sustainability challenges (UNU IAS, 2014a).

The RCE global initiative was created with the aim of translating the overall goals of the DESD into specific actions implemented through multi-stakeholder, partnership and action learning approaches, and which could be relevant and have a direct impact on local communities. It was intended that the global impact would be achieved through collaborative undertakings amongst RCEs, which as a growing ESD community, could inform key education and sustainable development dialogues as well as influence national and international policies.

A stated by Fadeeva and Mochizuki (2014), initially one of the most important goals of RCEs was to strengthen the formal education system through progressing learning, research, policy and practice and creating more effective links with the non-formal and informal education sectors. Over the years, the scope, focus and priority areas of RCEs have broadened considerably due to the flexibility provided by each RCE to identify learning gaps, challenges and needs to be addressed within its regional context. RCEs have engaged in social and institutional learning, facilitated community-based learning projects, engaged with policy-makers and supported social entrepreneurship for sustainability. Common sustainable development thematic areas addressed by RCEs include climate change, health, biodiversity & traditional knowledge and disaster risk reduction.
Key ESD documentation and formal RCE evaluations have consistently confirmed the role of RCEs in bringing about change for sustainability and contributing to achieving the goals and ambitions of the DESD (see, for example, Fadeeva et al., 2014 and UNESCO, 2014). The contributions made by RCEs for the past ten years were presented during both the 9th Global RCE Conference (4-7 November 2014, Okayama, Japan) and the UNESCO World Conference on ESD (10-12 November 2014, Nagoya, Japan). Notably, RCEs have provided platforms for the development of educators’ and learners’ competences on ESD; have built a sustainability culture based on collaboration and partnerships for change approaches; have responded to regional and local systems in crises; have brought innovation into teaching and learning systems for greener and more socially just societies; and, have influenced the development and implementation of sustainable development and ESD policies and programmes.

At the global conference on ESD in November 2014 in Japan, the RCE community also renewed commitments to support relevant international ESD frameworks, including the new Global Action Programme (GAP) on ESD led by UNESCO as a follow-on international platform after the DESD. The GAP on ESD has provided new impetus to continue supporting the ESD agenda and up-scaling efforts, but also opportunities for organisations and networks to re-think priorities and strategic directions for the next five years (Tabucanon et al., 2014). Through the Okayama Declaration (UNU IAS, 2014b), RCEs unanimously reaffirm their commitment to the strategies within the GAP priorities in the implementation of actions for advancing policy, transforming learning and teaching environments, building capacities of educators and trainers, mobilising youth and accelerating solutions at the local and regional levels, in order to create more sustainable communities.

These commitments have also been adopted at the regional level. The RCE Asia-Pacific network, which comprises 49 members, developed and approved a strategic document which identifies pathways to support the implementation of the GAP on ESD in the region (see UNU IAS, 2014c). Building capacities of educators and working with the school sector have been identified as regional priorities in order to increase access to education, enhance quality of education systems and re-orient teaching, learning and pedagogies for sustainability.

This chapter provides an overall picture of Asia-Pacific RCE contributions in engaging and supporting the school sector in bringing about innovation for sustainable development. It reviews projects and experiences led by RCEs in the region that
specifically support the process of embedding sustainability principles in primary and secondary schools. The aim is to draw lessons learned and provide recommendations that can assist RCEs to increase their relevance to and impact on this sector as well as progress RCE commitments to the GAP on ESD.

TEACHER EDUCATION AND BETTER SCHOOLS IN ASIA-PACIFIC

The Asia-Pacific region covers approximately 22 percent of the global area and has approximately 4.3 billion inhabitants, more than half of the world’s population. Asia-Pacific is rich in history and cultural diversity, with over 3,200 languages spoken. The region is a remarkable source of economic energy, entrepreneurship, financial dynamism and technological progress. Countries contribute to more than one third of the global GDP (IRA, 2008). Although the region has made significant progress to address poverty and access to education, it still faces many sustainable development challenges such as natural disasters; rapid, uneven and unplanned urbanization; adverse impacts of climate change in vulnerable communities and small island states; job creation and poverty eradication (UNESCO, 2014b).

Sixty per cent of the world’s young people live in the Asia-Pacific region (UNDESA, 2013). Therefore, access and quality of education has been identified as a key priority in the region in order to prepare young learners to cope with and address sustainable development issues. In Asia-Pacific, there is a diversity of national and international programmes for green and sustainable schools and some of these provide comprehensive models of change and whole-school approaches (Mogensen and Mayer, 2005). However, schools engaged in this agenda are still a minority and, thus, engagement opportunities on ESD are limited.

As stated by Ferreira et al. (2007), teachers play a key role in changing schools and ensuring that the learning content and curriculum are relevant to the learner’s context. They also provide knowledge, skills and values which better prepare students to live and learn in a complex world and uncertain future (UNESCO, 2014c). Although there exist initiatives in the region focused on supporting the development of teachers’ competences in ESD, most of these tend to engage with teachers already interested in or committed to this agenda. The challenge is to engage the ‘disengaged’, so that sustainability principles can be effectively mainstreamed in the school life and learning experience (Henderson and Tilbury, 2004).
Acknowledging the need to bring contextual relevance and innovation into the school curriculum, many RCEs are focused on engaging key stakeholders in primary and secondary school education to re-think teaching and learning; facilitating projects which support the student learning for sustainability; and, providing training to pre-service and in-service teachers.

**A REVIEW OF ASIA-PACIFIC RCE PROJECTS AND EXPERIENCES IN THE SCHOOL SECTOR**

This chapter presents the results of a review of sustainability projects carried out during February 2015 and experiences on teacher education and schools facilitated and led by RCEs in the Asia-Pacific region during the period 2010-15. The purpose of the review is to; draw an overall picture of RCE activities and contributions to the DESD; identify the teaching & learning strategies and pedagogical principles aligned with ESD supported by RCE initiatives; analyse challenges and opportunities in supporting change for sustainability processes in the school sector; and, finally, identify recommendations which can assist RCEs to enhance their relevance and impact to the school sector and contribute more effectively to the goals defined by the GAP.

A total of 32 projects from 13 RCEs in 9 countries of the Asia-Pacific region (Australia, Bangladesh, Cambodia, China, India, Indonesia, Japan, Malaysia and Republic of Korea) have been studied in the process of drawing up the review. From these initiatives, 12 were targeted to the whole school community (teachers, students, school managers and administrators, parents and community); 10 to school teachers and students, 5 to solely teachers, and 5 to solely students.

The case studies have been selected by reviewing key RCE reports and activities and identifying those projects focused on school education carried out during the period 2010-15. The following materials were reviewed:

- annual reports submitted by RCEs through the network’s web portal from 2010-14;
- projects nominated for the annual RCE Award (2013 and 2014); and,
- templates developed, circulated and completed by RCEs in the region during February 2015. The aim of the templates was to identify projects which were not documented in RCE resources. The response rate from RCEs was low. Therefore, while some additional projects were identified, it was difficult to review all the actual RCE school and teacher education initiatives carried out from 2010-15.
In addition, preliminary results of the review were shared and discussed with RCE participants attending the 8th Asia-Pacific RCE Meeting held during 5-8 March 2015, in Cebu City and Tagbilaran in the Philippines. Comments made by RCE colleagues during the meeting have been particularly valuable in refining the findings of the study and identifying recommendations for collaborative future actions.

**KEY OBSERVATIONS**

A diversity of ESD initiatives and approaches are documented by the RCEs that took part in this review. ESD processes facilitated tend to be contextualized, taking into account environmental settings, cultural diversity, and socio-economic, political and educational systems. A common element from all the initiatives reviewed is that ESD is viewed as an action and participatory learning process where the needs of students and teachers are explored and addressed in order to draw meaningful paths for the future. This section briefly summarises the key observations arising from the review.

- **ESD capacity building and development of resources**

  The various experiences reviewed address the need for capacity-building, pedagogical resources and curriculum innovation at the local and national levels. Capacity-building processes aim at providing tools and competences to teachers and schools to embed ESD in their daily teaching practice. Many RCE projects have also focused on developing pedagogical materials which are culturally and locally relevant and on training teachers to use these resources effectively. The use of these materials has had a great impact in many different countries. For example, RCE Chandigarh (India) has developed an activity book for students and a guidebook for teachers on the carbon footprint and handprint, using a participatory approach involving over one hundred key school stakeholders. These materials are now used by over 5,000 students in the region.

- **Range of thematic entry points into sustainability**

  Over 50% of the projects and initiatives reviewed share the purpose of creating awareness and building capacities on thematic areas associated with environmental issues. Mostly they cover areas related to climate change, biodiversity, water and waste management, forestry and sustainable agriculture. However, some RCEs such as RCE Western Sydney (Australia) and RCE Tongyeong (Republic of Korea) have also facilitated innovative programmes that connect with contemporary issues facing students and their local and global communities. These projects have focused on building students’ and educators’ leadership capabilities for sustainability and
global citizenship; connecting sustainable development with cultural heritage and diversity; and, exploring values-based approaches to sustainability.

• **ESD quality and teaching and learning processes**
The different projects reviewed highlight the efforts made in embedding ESD within the formal curricula. Although whole institutional approaches are promoted by some RCEs such as RCE Goa (India), RCE Okayama (Japan) and RCE Tongyeong (Republic of Korea), the reality is that many of these efforts are still based on piecemeal approaches or short term sustainability projects. In order to fully embed ESD within the education system there is a need to challenge existing structures and systems (Mulà and Tilbury, 2011). None of the projects reviewed reflect on this complex process.

Change towards sustainability in schools requires more than just re-orienting curricula. It implies deeper levels of commitment where schools are not only concerned about what is taught, but how student learning occurs. ESD ultimately must engage all members of the school community at the very core of the school culture, influencing curriculum, operations, management procedures, partnerships and relationships with the local community.

The focus of most initiatives studied is on the reorientation processes of formal curricula within existing educational systems. Little attention is given to links with non-formal and informal curricula. An exception is RCE Penang (Malaysia) which is currently facilitating a co-curriculum initiative focused on creating a network of schools engaged in implementing sustainability clubs. This initiative is focused on providing capacity building opportunities to both teachers and students engaged in the clubs and linking the school formal and informal curriculum experiences.

The review also attests that RCEs have still to engage in reviewing the quality of processes taking place to embed ESD in teacher training and school initiatives. Most RCEs highlight participatory, action and context-based learning as pedagogical approaches adopted. Pedagogies related to cultural diversity and intercultural dialogue also appear to be important for RCEs in the region. However, few examples are given about how these pedagogies are used or developed in practice.

• **Culture of cooperation, quality and relevance**
The creation of partnerships, especially with government agencies and NGOs, is viewed as a crucial component in most of RCE projects analysed. Also, some RCEs
such as RCE Greater Shangri-la (China), RCE Goa (India) and RCE Okayama (Japan) have started to work with the business sector in search of new funding mechanisms and bringing innovative ideas into school initiatives. All the initiatives studied show evidence of genuine and formal partnerships being established for ESD. For example, the Water School project, led by RCE Shangri-la (China) in collaboration with Swarovski, the China’s Ministry of Education and the UNESCO Beijing Office, works with 12 Regional Coordination Centres in four river basins in China. Each of these Regional Coordination Centres works with a group of schools which in turn form a Leadership Team usually composed of teachers, students, community members, NGO representatives and university educators. The project also works directly with communities, including villagers, nature reserve organisations, monasteries, local NGOs, Community Learning Centres, youth organisations and government agencies.

RCEs also report on projects which have taken place in collaboration with other RCEs in the region. As an example, RCE Western Sydney (Australia) has worked with RCE Tongyeong (Republic of Korea) and RCE Penang (Malaysia) in its annual Youth Eco Summit (YES!) - a unique, curriculum-based sustainability event for school students and their teachers that promotes student leadership and showcases sustainability achievements and practices in both primary and secondary schools. International collaboration among RCEs has proved to bring an added-value to existing initiatives. Local schools and teachers seem to be particularly interested in sharing sustainability practices with other schools and learning from experiences carried out in different parts of the region.

- **Monitoring and evaluation processes**

RCE Greater Phnom Penh (Cambodia), RCE Greater Shangri-la (China) and RCE Goa (India) are the only RCEs with formal monitoring and evaluation systems in place to review progress and change resulting from the implementation of ESD projects and initiatives in the school sector. This is due to formal requirements from funding organisations. Other RCEs such as Greater Sydney (Australia), Chandigarh (India), Okayama (Japan) and Tongyeong (Republic of Korea) attest that informal evaluation processes and in-house discussions take place in a continuous basis to reflect on learning processes, challenges and achievements. Some RCEs in the region have also participated in the monitoring and evaluation processes facilitated by UNU IAS, but these are focused on the overall RCE performance and engagement and governance strategies, and do not specifically review school projects promoted and facilitated.
LOOKING FORWARD
The projects and initiatives analysed as part of this review reflect on the sustainability complexity and challenges that RCEs are facing in supporting teachers and schools. At the heart of all the ESD initiatives studied are multi-stakeholder processes and partnerships for change, which seek to embed change within school activities and the curriculum experience. Change for sustainability is a long term process. While the projects and initiatives studied have started to engage schools, teachers and students in rethinking teaching and learning, more efforts are needed to transform the school culture. The following recommendations have been identified as part of this review, with the aim of increasing RCEs’ relevance and impact to the school sector and contributing to the ambitions set out in the GAP on ESD:

- **Supporting projects that promote whole-institutional approaches and institutional culture change for sustainability**
  Most initiatives and projects studied have focused on re-orienting the curriculum towards sustainability through providing capacity building for teachers and engaging students in action learning activities. Change toward sustainability requires more than just rethinking educational curricula. There are significant opportunities for schools to not only rethink what we learn, but also how we learn it. To be successful, transformation will require the involvement of all the school community and rethinking school operations, management, communications and relationships with local partners.

- **Sharing and reviewing capacity building programmes and resources**
  This study has identified critical opportunities to collaboratively share and review capacity-building programmes and educational materials developed by RCEs. The aim is to ensure that there is no duplication of efforts among RCEs and look at how resources and programmes could be transferred and adapted to different national and local contexts. Drawing upon pooled resources, capacities and expertise is critical for RCEs to learn from each other, increase the impact of projects and enhance the quality of ESD processes.

- **Engaging with a wider diversity of thematic entry points to teach and learn for sustainable development**
  Most of the projects studied are focused on environmental themes such as climate change, biodiversity or water management. This study has identified the need for RCEs to address a wider variety of thematic entry points into sustainable development, which can provide a more complete understanding of regional challenges and
bring different perspectives to sustainability. Some examples may include cultural diversity and equality, intercultural understanding, food security, and health and wellbeing. Asia-Pacific RCE annual meetings are critical platforms to explore and discuss these emerging themes as well as develop collaborative inter-RCE projects.

- **Enhancing regional RCE cooperation**

  This study has confirmed the key role of RCEs in brokering partnerships for change. There exist many examples that illustrate how RCEs have involved key national and local school stakeholders to develop and implement collaborative ESD undertakings in school settings. In order to increase the RCE impact and upscale ESD efforts, more attention should be given to inter-RCE collaborations. Networking partnerships among RCEs can be used to connect RCE members from different geographical contexts to share best practice and discuss regional challenges.

- **Reviewing the quality of ESD projects and building RCE capacities on monitoring and evaluation**

  ESD monitoring and evaluation is a complex area, which needs to be further developed in order to assess the learning processes and outcomes of ESD initiatives (Mulà and Tilbury, 2011). This review has identified the need for monitoring and evaluation mechanisms based on multi-stakeholder participation and focused on assessing the quality and learning processes of ESD projects. Indeed, monitoring and evaluation systems which help to build RCE capacities are required to ensure the quality of facilitation processes. Moving forward, it is recommended that RCEs in the Asia-Pacific build a network of critical friends in order to encourage reflection on teaching and learning quality for sustainability. One RCE can act as a critical friend of another RCE, encouraging critical reflection and providing honest and constructive feedback about projects, processes and initiatives.

**REFERENCES**


