



Green Skills: Defining and Reorienting Competencies for Environmentally friendly practices

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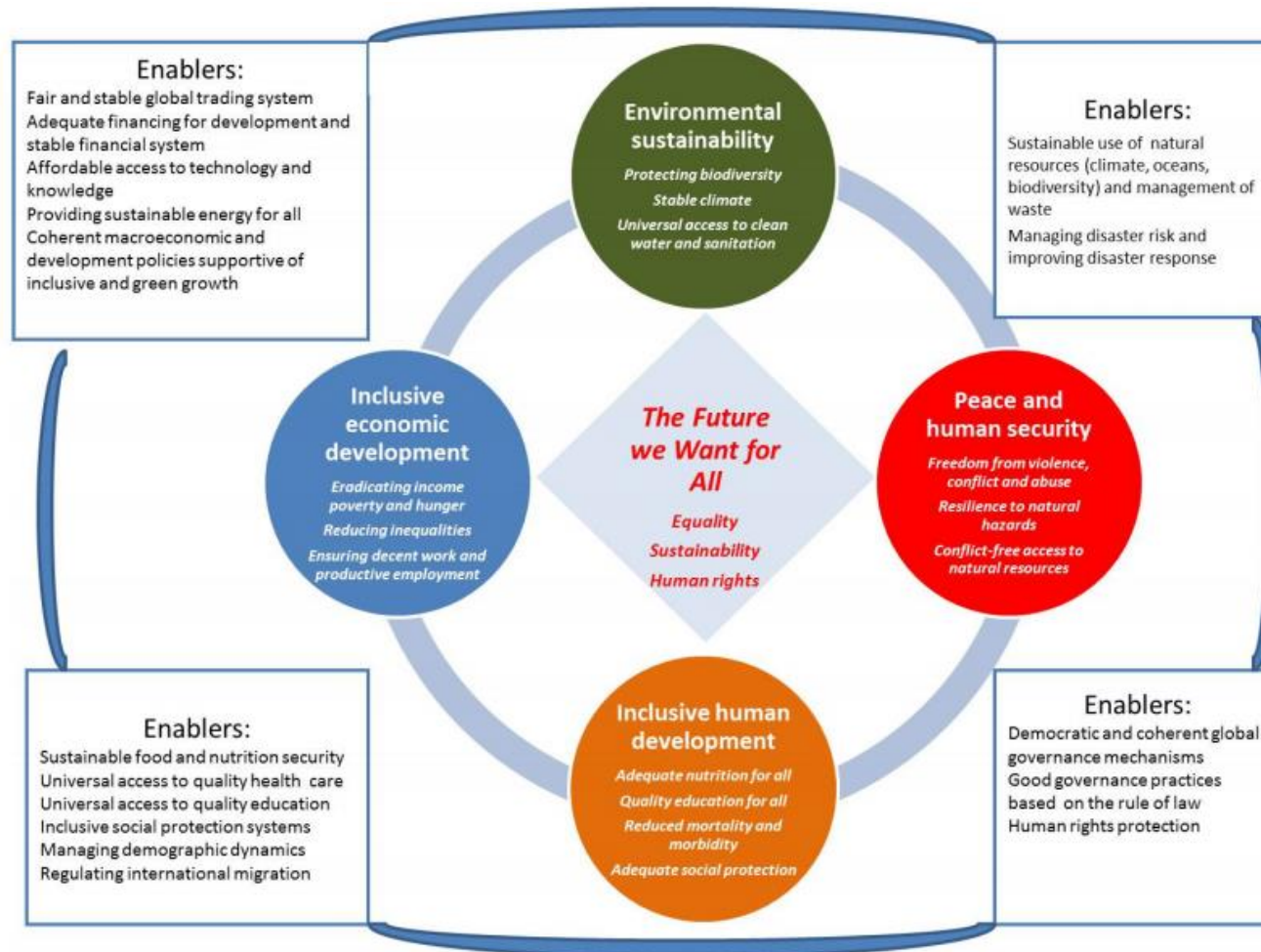
Symposium on The Inclusion of Green Competences in the Recognition of Prior Learning

26 August 2015

Issues to be addressed

- ▶ TVET competencies within Post- 2015 agenda
- ▶ The nature of TVET competencies
- ▶ Green Economy and skills requirements

An integrated framework for defining the post-2015 agenda



The post-2015 development agenda

- ▶ UNESCO recommends to its Member States: **“Ensure equitable quality education and lifelong learning for all by 2030”** as a possible overarching education goal, aiming to achieve just, inclusive, peaceful and sustainable societies.

Priority Area: Skills for Work and Life

This priority area aims at ensuring that all young people and adults have:

- ▶ **equitable opportunities to access and complete** formal and non-formal technical and vocational education and training relevant to the world of work
- ▶ **lifelong learning opportunities** that enable learners to acquire diverse and relevant knowledge and skills that foster their professional and personal development.

Governments should provide information and counselling and facilitate **various pathways to learning** depending on learners' choices and potential, taking into account the skills required for the world of work.

Shanghai Consensus, 2012

Recommendation 1.

Enhancing relevance of TVET

Include education for 'green' economies and 'green' societies as a part of TVET qualifications and programmes, and advance the 'greening TVET' agenda towards low carbon and climate-resilient growth and development.

Perspectives on TVET

- ▶ Lifelong learning/pathways
- ▶ Inclusiveness/equality
- ▶ Sustainable/relevant

Global TVET Challenges

- ▶ Educational imperative (increasing enrolments)
- ▶ Social imperative (massive unemployment)
- ▶ Economic imperative (skills shortages)
- ▶ Technological imperative (lifelong learning) (WFCP World Congress 2014, Shyamal Majumdar)

How is competence defined?

In England

- Competencies are directly related to performance, thus - for procedures of assessment and accreditation.

In Germany

- Competencies are designed on a higher level of abstraction to increase a potential of transfer. They consist of five competence fields: action, subject, personal, social and methods or learning competence.

In France

- The emphasis is on balance between personal and occupational development.
- The treatment of personal qualities, attributes and attitudes is the main area in which frameworks differ. (Weigel et al, 2007)

Cedefop: Definition of VET Qualifications Standards

Combining occupational standards, educational and assessment standards

Occupational standards (incl. professional standards for regulated professions)	Educational standards (curricular content and process)	Assessment standards
Show a systematic description of occupational tasks, functions and associated competences	Follow a pedagogical logic, show progressive accumulation of knowledge and skills	Document student competence and progression
Outline the main jobs that people do; professional tasks and activities	Define the expected outcome of the learning process leading to the award of a qualification	May specify the object of assessment, performance criteria, methods.
“What does the student need to be able to do in a particular employment?”	“What does the student need to learn to be effective in employment?”	“How will we know what the student has learned and is able to do in employment?”
<ul style="list-style-type: none">▪ Areas linked to promote relationship between employment requirements and learning in VET▪ Use of learning outcomes facilitates link		Adapted from <i>The dynamics of qualifications: defining and renewing occupational and educational standards</i> . cedefop, 2009.



Green Economy

A Green Economy is one in which the vital links between **economy**, **society**, and **environment** are taken into account and in which the transformation of production processes, production and consumption patterns create decent employment opportunities, promote sustainable trade, reduce poverty, and improve equity and income distribution.

A Green economy contributes to a reduction of waste, pollution, and the use of resources, materials, and energy to revitalize and diversify economies.

Source:[http://www.unep.ch/etb/publications/Green%20Economy/GER%20brochure%20\(normal\).pdf](http://www.unep.ch/etb/publications/Green%20Economy/GER%20brochure%20(normal).pdf)

Enhancing the responsiveness of TVET in a lifelong learning perspective



The UNESCO-UNEVOC Global Forum "Skills for Work and Life Post-2015", 14 to 16 October 2014, the UN Campus, Bonn, Germany.

“Include education for ‘green’ economies and ‘green’ societies as a part of TVET qualifications and programmes, and advance the ‘greening TVET’ agenda towards low carbon and climate-resilient growth and development”
Shanghai Consensus



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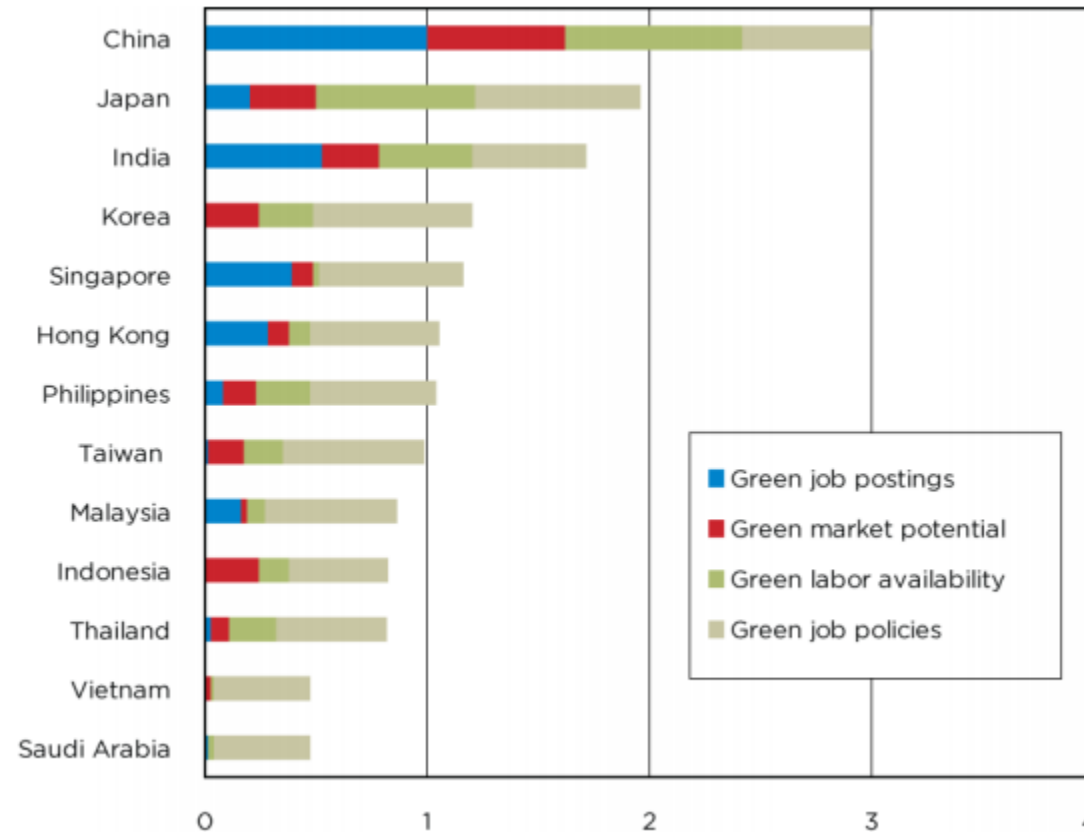


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Green jobs index for Asia



Index scores range from 0 to 4; a higher score means more favorable conditions for green jobs
Source: Asia Business Council (2009).

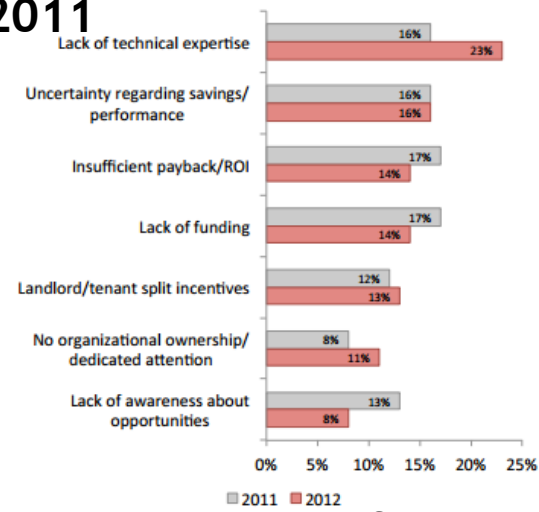
Skills shortages: labor shortages and skill gaps

Difficulties in filling positions due to lack of available talent

Countries	Percentage of employers who experience difficulties
India	67%
China	24%
Japan	80%
Australia	54%
New Zealand	44%
Singapore	44%

Source: Aring, 2012

Barriers to invest in green buildings in China, 2012 versus 2011



Source: EU SME Centre, 2013

Estimation of green job numbers in two sectors

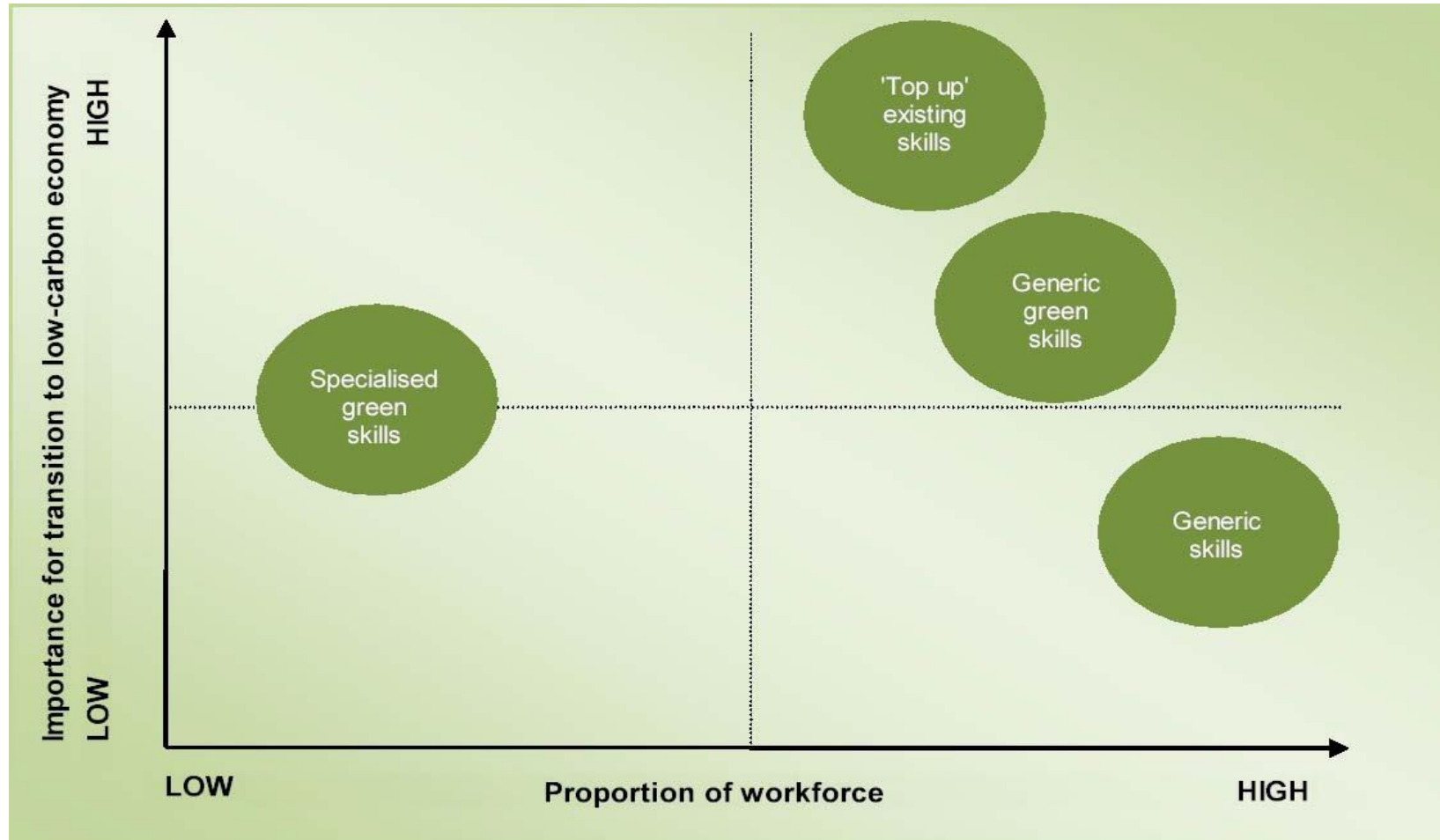
Country	Green jobs or environment-friendly job estimates (% of total employment) and N of places		Total No. of Jobs	
	Construction	Agriculture	Construction	Agriculture
Malaysia	1.11 to 4.74% (10,906 - 46,155)	8% (111,253)	974,488	1.4 million 15
Philippines	11% (211,090)	1.2% (118,000)	1.9 million	9.5 million*
Mexico	5.2%	11.5%	60,300	403,500

Sources: Compiled by the author, based on ILO (2014)

Four challenges for 'greening skills' development

- ▶ Identification of major drivers behind skills and occupational changes;
- ▶ Identification of green skills composition and the ways to deliver training;
- ▶ Development of a normative framework and curricula
- ▶ Inclusion of greening skills in informal learning

Identification of green skills composition



Definitions

Greening of skills - refer to the process of moving from traditional processes, services or organizational arrangements to production processes, services or organizational arrangements that have a reduced environmental impact.

Topping up skills for greening means:

- ▶ (a) adding skills to meet the skills required at a certain level of competence to perform tasks for "existing occupations" with environmentally friendly practices at work; the addition of these skills DOES NOT LEAD to a different occupation;
- ▶ (b) adding skills to meet the skills required at a certain level of competence to perform tasks; the addition of these skills LEADS TO A NEW OCCUPATION.

Green jobs are related to work in different sectors *“that contribute substantially to preserving or restoring environmental quality. Specifically, but not exclusively, this includes jobs that help to protect ecosystems and biodiversity; reduce energy, materials, and water consumption through high efficiency strategies; and ... altogether avoid generation of all forms of waste and pollution”*
(UNEP/ILO/IOE/ITUC, 2008, p.3)

'Top up' existing skills

Australia: Updated the Electrotechnology Training Package includes three Competency Standard Units (CSU) on:

- Participate in environmentally sustainable work practices
- Implement & monitor, policies & procedures for environmentally sustainable electrotech work practice
- Develop effective strategies for energy reduction in buildings

Cognitive competencies

Environmental awareness and willingness to learn about sustainable development
Systems and risk analysis skills to assess, interpret, and understand both the need for change and the measures required
Innovation skills to identify opportunities and create new strategies to respond to green challenges
How to be a part of the solution
How to think about things differently
How to be aware of the habits in what you do and think
How to deal with complexity
How everything is connected
How to judge the truth of the matter

Technological competencies

Quantification and monitoring of either waste, energy or water
Management systems of either waste, energy or water
Selection and acquisition of goods and services from external sources that are appropriate in terms of quality and environmental impact
Material use and impact quantification
Impact assessment
Minimization of environmental impact
Minimization of materials used
What can be recycled
Environmental laws and regulations
Environmental risk management
How learnt skills contribute to greening of industry

Interpersonal competencies

Strategic and leadership skills to enable change
Coordination, management and business skills to develop approaches that encompass economic, social and ecological objectives
Communication and negotiation skills
Marketing skills to promote greener products and services
Networking, IT and language skills to enable participation in global markets
Consulting skills to advise consumers about green solutions and to spread the use of green technologies

Intrapersonal competencies

Adaptability and transferable skills to enable workers to learn and apply the new technologies and processes required to green their jobs
Entrepreneurial skills to seize the opportunities of low-carbon technologies

Based on Pavlova (in press) *Green skills as the agenda for the competence-movement in TVET*.²⁰

Factors that could influence greening of TVET

- ▶ Generic green skills will be different for low, medium and high levels. Generic skills can be included in anticipation of industry demands.
- ▶ It is also important to pay attention to capacity building for industry, so companies can think in terms of skills requirements and can predict skills requirements and convey this to TVET.
- ▶ All key stakeholders should be involved in the process of greening skills development.
- ▶ There is a significant potential for improving TVET responses to greening through a targeted effort across different ministries and different levels of education and skills training, to ensure that green skills are included in the curriculum and other practices of TVET providers.