

# SKILLS AND EMPLOYABILITY NETWORK

Asia-Pacific Skills and Employability Network



International  
Labour  
Organization

## Consolidated Response Skills for Green Jobs November 15 - December 2, 2011

### Background of the Forum

During the last decades, climate change adaptation and mitigation policies have increasingly become critical drivers of change for societies, economies, enterprises and workers to shift to a low-carbon economy. A profound transformation in modes of production and consumption can be expected in the future. The growing importance of sustainable development and the pressure for each country to shift to a low-carbon, climate resilient economy also asks for well-integrated policy responses and adjustments in labour markets and the training and skills sector.

According to an ILO/UNEP publication (2009), which is a part of the overall ILO Green Jobs initiative,<sup>1</sup> jobs in all economic sectors are or will be subject to ‘greening’ and effect changes in enterprises and a redefinition of job profiles and qualifications. Millions of green jobs<sup>2</sup> already exist worldwide, and many millions more will be created if investments, policy support and appropriate skills development can be made available. Particular employment drivers in the Asia and the Pacific region are sectors such as renewable energy, energy efficiency, building and construction, transportation, agriculture based industry, tourism and recycling.

Overall, new job opportunities arising from new low-carbon markets seem to offset unemployment, but those who will get green jobs are not necessarily those who will have lost their jobs. Low-skilled people are especially vulnerable as it will be difficult to compete for new jobs. Disadvantaged groups on the labour market need targeted assistance. Portable skills are getting a special value as they increase adaptation of workers and their occupational mobility.

The recently published reports on skills for green jobs ILO-CEDEFOP (2010)<sup>3</sup> and the ILO Global Synthesis Report (2011)<sup>4</sup> discuss occupational changes, emerging skills requirements and shortages and assess the various responses from government, private sector and other stakeholders. While most countries are still in the process of identifying and defining the scope

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<sup>1</sup> The Green Jobs Initiative is a partnership between the ILO, United Nations Environment Programme (UNEP), the International Trade Union Confederation (ITUC), and the International Organization of Employers (IOE). <http://www.ilo.org/public/libdoc/ilo/2009/447728.pdf>

<sup>2</sup> Green jobs help reducing negative environmental impact, ultimately leading to environmentally, economically and socially sustainable enterprises and economies. In practical terms, green jobs contribute to: reduction of energy consumption and use of raw materials, reduction of greenhouse gas emissions, minimization of waste and pollution, protection of ecosystems, while also meeting requirements of decent work- adequate wages, safe conditions, worker’s rights, social dialogues and social protection (ILO/UNEP 2009).

<sup>3</sup> <http://www.cedefop.europa.eu/en/publications/16446.aspx>

<sup>4</sup> [http://www.ilo.org/skills/pubs/WCMS\\_156220/lang--en/index.htm](http://www.ilo.org/skills/pubs/WCMS_156220/lang--en/index.htm) and

and scale of ongoing changes, there are indications that occupational changes are taking place in practically all sectors and occupations, both blue and white-collar jobs. New and emerging occupations more often require higher-level qualifications and managerial skills, while changes in existing occupations happen more often at the low and medium-skill levels. Many existing jobs (i.e. plumbers, electricians, metal workers, and construction workers) will simply be redefined as day-to-day skill sets, work methods and profiles are ‘greened’.

According to the ILO Skills for Green Jobs Report, skills shortages are widespread and bottlenecks are noticed across existing and potential sectors and industries. They can be particularly acute in highly polluting industries, environmental industry and agriculture as well as in emerging energy sub-sectors (solar, photovoltaic, wind, geothermal) and in occupations dealing with energy efficiency in industry, construction and installation.

Education and training systems are challenged to incorporate new skills demands in the development of qualifications, curricula and trainings in a coherent, well coordinated and integrated manner. The principal deficiency reported in public systems is weak responsiveness to changing industry needs. The reports concluded that countries with well-developed and responsive skills development systems have so far been more successful in systematically incorporating environmental considerations as cross-cutting issues in education and training at all levels. Countries that are succeeding in such a challenging task have also been placing a high premium on effective social dialogue, coordination among ministries and communication between employers and training providers. Labour market information systems, institutions for social dialogue and labour market mediation services are prerequisites for being able to anticipate future skill needs and to adapt skills development systems accordingly.

Numerous countries in the Asia and the Pacific region have requested the ILO to provide support in policy and strategy development for green skills and green jobs. It is in this context that the ILO facilitated an online discussion on this highly relevant topic between 15 November and 2 December 2011. The objective of this online forum was to discuss ongoing occupational changes, emerging skills requirements and shortages and assess the various responses from government, private sector and other stakeholders, which seek to ensure that workers have the adequate and right skills to be able to participate in a smooth transition towards a green, job-rich economy.

The discussion had a particular focus on how developing countries, often hardest hit by climate change, could take advantage of such a transition process to address structural inequality, poverty and the high levels of vulnerability through concerted adaptation and mitigation efforts. The forum encouraged the sharing of good practices and a debate on the ongoing interventions currently applied within the region and globally. The forum invited ILO social partner representatives (Employers’ Organizations, Trade Unions and Government) and many experts from different backgrounds to participate and actively contribute and reflect on their role as change makers.

The online forum was divided into two parts:

**Part 1** introduced the current skills for green jobs debate, which includes the definition of green jobs, emerging skills needs, skills gaps and occupational changes with up-skilling and retraining requirements that are most prevalent in the countries. The forum further discussed policy

responses by Government, ILO social partners and other critical stakeholders and which mechanisms were put in place to identify and address skills shortages. The first part reviewed the existing body of research on skills for green jobs in the region that has been recently built up by the ILO (and others).

**Part 2** aimed at a more in-depth discussion on interest areas raised by the forum members. The forum discussed country specific policies and practices, and how these can be adapted, scaled and replicated in other countries.

## Results of the Discussion

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### Defining and measuring of Green Jobs and Skills for Green Jobs

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The forum started with clarifications on the definition of green jobs. It was found that the definition needs to be better understood by a large number of people as many countries are still grappling with their own categorizations and understanding under green jobs and related skills requirements. The ILO and the international community are in the process of developing a comprehensive list of green jobs and plan to integrate the same in the national and international lists of occupations (ISCO). As several contributions indicated, there is a growing consensus that the current transition into a green and more equitable society will affect all sectors and occupations, which consequently turn into green and decent jobs. Greening of jobs is a gradual process that never stops.

#### What are green jobs?

Jobs are green when they help reduce negative environmental impact ultimately leading to environmentally, economically and socially sustainable enterprises and economies. More precisely green jobs are decent jobs that:

- Reduce consumption of energy and raw materials
- Limit green house gas emissions
- Minimize waste and pollution
- Protect and restore ecosystems

The definition includes a wide spectrum of jobs, which address both sustainability and decent work (see box). Green jobs are jobs in environmentally friendly sectors that contribute to all aspects of environmental sustainability including reducing carbon emissions, protecting biodiversity and ecosystems and adaptation to climate change. From an economic point of view, green jobs encompass those jobs that produce 'green products and services'. Most developed countries use this framework as a reference but differ when it comes to categorization and listing of services and products. Examples of green products are the production of water-efficient valves to be used in the green building industry, equipment in the renewable energy sector, certified wood products or organic food, etc. Green services include R&D, information/training, education, enforcement, but also consulting, or retailing of green products.

It was further suggested that measurement tools start integrating employment and job potentials and assess the impact on reduced carbon footprints or climate change. The CSR compliance and the development of voluntary instruments and codes have increasingly adopted such tools as they integrate social, environmental aspects into economic performance. International labour standards (including the 8 ILO core labour standards) have increasingly been integrated to cover the labour part.

## **Emerging trends for green jobs, sectors and skills needs**

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Contributions from Trinidad & Tobago, Australia, Spain, India and Bangladesh re-affirmed the global reports' findings of current occupational trends, the overall potential positive employment effects and increasing skills needs and gaps in all the sectors and in emerging occupations in particular. These include tourism, hospitality and related supply chains, besides the fast expansion of organic agriculture and food, fishing and processing, re-forestation, renewable energy, construction, waste and recycling sector. Additionally, the overall demand for green management and education jobs will grow and provide employment opportunities, if policies are specifically drafted and incentives set for investments.

### **Extract, Case of Spain:**

In the case of Spain, while shifting towards more environmentally responsible production methods, two different skills gaps have been identified. First, there is a capital greening gap, which could be narrowed by increasing energy efficiency through capital substitution (generally involving technological change). Second, there is a non-capital greening gap, which could be addressed by increasing energy efficiency through organizational changes or improving attitudes of workers. As an example, a capital greening gap would be the change in agriculture from old harvesters to new and less polluting ones.

By contrast, an example of a non-capital greening gap would be switching off the lights in office buildings when they are not in use. Closing this noncapital greening gap involves training in conceptual skills, such as environmental awareness. A non-capital greening gap could be found in almost every occupation from farmers to highly-qualified white-collar workers, and this is one of the key challenges for greening the economy. Thus, conceptual skills training responses, such as awareness campaigns, should continue and perhaps incorporate new training methods (source: Alberto Martinez, Spain).

Contributions from developing countries emphasized the need for universal education as a priority, while future skills needs (i.e. generic skills which incorporate skills related to sustainability, environment related aspects) are critical for the new generation to ensure their employability.

Several contributions pointed out that overall the education and training sector has to be demand oriented – a challenge of the overall training system to ensure employability of the workforce. Consequently, educational and vocational training needs should be systematically assessed and integrated and required adjustments need to be made to make the status of vocational training more attractive. The required competencies for economic productive activities overall require environmental management and affect various sectors and therefore need to be addressed across sectors in close consultation with industry.

Apart from this social issue, many technical and vocational jobs require retraining in modern techniques to reduce and minimize pollution, promoted energy conservation products and procedures, procurement and life skills in all the occupations and sectors, which have been identified by governments as strategic sectors. Contributions from India referred to the changing skills requirements of engineers, scientists and managers in the future.

A coordinated effort is suggested to train persons in the various disciplines making “green” a mandatory part of the curricula and increase the overall awareness of the population on these aspects.

### **Policy Responses:**

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Most of the contributions confirmed that environmental policies and regulations have increasingly become a priority in their country, but often lack well-coordinated strategies and effective mechanisms and institutional capabilities for successful implementation. Initial policy responses tend to start with environmental policies, reforestation and conservation. It seems that in fewer cases, climate change and adaptation policies are strategically planned and integrate employment and skills related aspects. It was also mentioned that though many developing countries increasingly prioritize ‘greening’ as a part of the development paradigm, they still follow the traditional resource intensive development path instead of taking a bold step towards an integrated approach for greening their economy. The argument was also made that for emerging and poorer economies, where in many instances production processes are dictated by international markets, labour market institutions and vocational training systems need to be strengthened as else, it will be challenging to make an immediate shift towards a green economy.

Most forum members indicated that climate change and environmental policy responses often do not integrate employment and skills related policies. Further, they lack systematic planning for climate change and fall short of human resource planning and trained people to effectively implement these policies.

The contributions from Trinidad & Tobago, India, Bangladesh, Australia and Spain emphasized the need for more binding and stringent laws, the need for empowered institutions and enforcement mechanisms so that current policies are effectively implemented. Most contributions emphasized the need for a stronger role of governments and the business sector as critical. The forum contributions from Spain and Australia clearly referred to the need for strong political will and multi-stakeholder involvement that is required for a paradigm shift. Organizational and institutional changes are as important as investments, which need to be taken into account.

The contributions on government responses were particularly insightful for the countries, Australia, Trinidad & Tobago and Spain. Australia’s current efforts clearly refer to Skills for

Sustainability which embrace the ILO's green jobs definition. One of the contributors felt that there is a need for sector specific skills responses by government and key stakeholders for green jobs and skills development and referred to the case of Bangladesh's skills shortages in their current effort on building up solar power systems, which requires 20,000 skilled workers to service energy needs in rural Bangladesh.

Other government responses successfully implemented programmes, targeting vulnerable groups through green jobs initiatives (the urban and rural poor, youth, unemployed) with the objective to accelerate more inclusive and sustainable growth. Many countries, with China, Japan and the Republic of Korea in the lead, have, as a part of their crisis response packages, actively promoted green job creation (e.g. Republic of Korea, China, Australia, Indonesia), and in some cases,

**Extract, Case of Australia's Skills for Sustainability:**

A number of policies and initiatives have been put in place to facilitate the development of the skilled and qualified workforce that Australia will need to sustainably grow its economy.

One key example is the Green Skills Agreement, which was led by the Prime Minister's office and endorsed by the Australian, state and territory governments in late 2009. A multi-stakeholder taskforce convened a Working Group that comprised of key representatives from state and territory governments, peak industry groups, unions, the tertiary education sector, community groups and Industry Skills Councils (ISCs). The mandate given to this group is to draft an agreement which is a statement of commitment to work collaboratively with employer and employee representatives, the vocational education and training sector (VET) and community organizations to ensure that training in skills for sustainability is an integral part of the national VET system and is relevant to the needs of industry.

Major achievements under the Agreement to date, include the embedding of skills for sustainability in all relevant Training Packages; the development of a new sustainable practice skill set to underpin professional development for VET practitioners; and the undertaking of pilot projects to identify new green opportunities for vulnerable workers in regions that may be affected as Australia transitions to a cleaner economy.

Additionally, through its commitment to ensure Australia secures a clean energy future, the Australian Government announced the Clean Energy and Other Skills package in July 2011, which will provide training opportunities for both professionals and trades people to up skill in energy efficiency and clean energy skills, so that the workforce is prepared to take up the opportunities afforded by the transition to a cleaner, greener future.

At an international level, Australia supports the green growth agenda, and specifically, the ILO's Green Jobs Agenda and has committed to providing funding for two years for the Green Jobs in Asia Project.

(Source, Natalie Mc Kinlay; Asha Sharma, Australia)

linked these targets with training and re-training initiatives (e.g. Denmark, Ireland, Switzerland). Training and re-training, however, are with some exceptions, still marginally addressed. Some of the green stimulus packages tried to link green investments and policies with job and green jobs creation targets, which is something to be underlined. Such sectors and activities as reforestation, river management, public transport, water and waste systems were promoted in countries like the Philippines, South Korea, Australia, Indonesia, Bangladesh and China. In this regard, public investments in collective assets and infrastructure remain a very important driver for the expansion of environmentally friendly economic activities with decent jobs.

One can expect additional employment creation through interventions designed to develop socio-economic resilience against the adverse impacts of climate change in the coming years. The Asia Pacific region is particularly vulnerable to such risks and investments are required to improve irrigation and watershed management in rural areas, protect low-lying areas to prevent erosion, floods, and sea invasion as it will be the case in exposed many mega polis in the region such as Shanghai, Manila, Mumbai, Bangkok, Jakarta and others.

The business sector has been identified as critical to ensure effective implementation and has in many countries increasingly been a driver in promoting the greening of the economy and identifying new business niches for the future. The forum addressed the importance of joint collaboration between the government and private sector to take a strategic step towards cleaner production and consumption. It was emphasized that enterprises, which have initiated a long-term process to green their supply chain and improve productivity with a changing working culture, occupational safety and health mechanisms and training of their workforce need to be supported by balanced policies to provide the legal and institutional framework for compliance to labor and environmental standards. However, it is finally their buy into the overall vision and long-term business perspective, which changes the culture of the enterprise. It requires a gradual shift with a strong corporate vision, where the workforce is continuously engaged and motivated to take this process forward. In such a case, workers can benefit from a cleaner, more pleasant and safer workplace and are able to take pride in being part of an organization that takes sustainability issues seriously.

### **Sustainable Development as overarching theme and new paradigm**

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For several forum members a paradigm shift is required, which is embedded in much broader system related changes that are required in the entire society to ensure a transition towards a more sustainable economy. Consequently, it was argued that the creation of jobs in the emerging Green economy should not be just a case of providing employment but should be a subset of sustainable development policies and strategies nationally and internationally. Promoting sustainable development means changing and adapting current growth pattern to new models so that the society will begin to see changes in its lifestyle and working habits in the coming years. Such a new paradigm needs to effectively address these changes through economic and institutional efforts in production and other traditional sectors, educational and knowledge sector and strong support from public administration.

Members from Bangladesh, Trinidad & Tobago and India see current challenges in policy coherence, lack of strategic planning and effective implementation, as there are no proper systems for enforcement of policies and laws. Many times the reluctance by both private and public enterprises in adopting many 'green' practices exists because it was and still is not mandatory.

### **Systemic changes and policy coherence**

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As several contributions suggest, there is a need for an overall system change that reviews the entire current development and economic paradigm to ensure that overall policies, strategies and implementation support the shift towards sustainable and more equitable inclusive development.

There are indications that in many countries, the training and education system are not sufficiently prepared for these shifts, while the private sector has increasingly taken on the proactive role to meet these needs in many countries. Till date, very few countries have taken the strategic step to integrate greening skills competencies for employment into their environmental policies and strategies. While latter are well developed, skills and employment related aspects are mentioned but not part of an overall strategy.

Further, there are needs for better-integrated inter-ministerial and multi-stakeholder coordination and commitment to seriously pursue sustainability. Consequently, as pointed out by several contributions, any strategy, intervention, whether at the planning level or at the company level will need to shift towards a modus operandi that clearly reflects a sustainability culture and includes the various environmental as well as the social aspects of decent work.

### **Skills for Sustainability and Lifelong Learning**

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The forum addressed the close connection between sustainable development and the knowledge economy, for which primary, secondary and higher education appear to be basic requirements for success and therefore high priority areas for developing countries.

Australia has, as a part of the strategy defined Skills for sustainability’ as “the technical skills, knowledge, values and attitudes needed in the workforce to develop and support sustainable social, economic and environmental outcomes in business, industry and the community.”

Environmental education is critical at all levels of the educational system and needs to be extended beyond the classroom to society to increase environmental awareness. Quality of environmental education and effectiveness must be carefully monitored, whether it has an impact on actual behavioral change.

The Australian Government’s focus on skills for sustainability recognizes the critical importance of education, training and skills development in creating an innovation culture and building capability to drive green growth, sustainable development and a just transition to a low carbon economy.

Contributions from Trinidad and Tobago observed the overall low levels of awareness about sustainability and ‘green’ in society. Some forum members suggested that government and private enterprises should increase investment into overall awareness of the population to make more informed decisions on their course of study as well as the areas where employment opportunities exists.

References were made to the current UNESCO programme on Education for Sustainable Development (ESD), which supports member states to integrate sustainable development in the educational system. A strong connection needs to be made between lifelong learning and skills for sustainability. According to one contribution, education and training programmes need to:

1. Develop an understanding of a range of environmental concepts
2. Encourage reflection on the effects of personal attitudes, values and lifestyle choice;
3. Promote skills for critical thinking and practical action.



The generic and core work skills include critical thinking and practical problem solving skills and need to be enhanced to promote environmental sustainability.

The forum briefly addressed that the effectiveness and quality of the overall increased investments into environmental education needs to be systematically monitored and assessed as recent research studies (A Policy and Practice Review Tool JOHN FEIN: <http://unesdoc.unesco.org/images/0019/001908/190898e.pdf> ) suggest.

## **Concluding Remarks**

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The discussion forum overall touched upon many broad definitional and policy related aspects of the current green jobs and skills for sustainable development debate and emphasized the need for further research on definitions, measurement and employment and skills related aspects.

Overall, there seems to be a consensus that all sectors and occupations will undergo changes in the transition process and will rely on new technologies and related organizational and managerial, technical and generic ‘green’ skills, which increasingly report shortages.

Implementation and enforcement of current policies and strategies seem besides policy coherence and integration of employment and skills policies to be the current challenges for developing countries. An enabling policy environment and political will of government/stakeholders are besides the institutional capacities critical for a paradigm shift.

The overall awareness of the population about sustainability needs to increase through campaigns and the mandatory integration of sustainability and environment aspects in the educational and TVET system and their relevance and effectiveness assessed and monitored. Strategies for skills for green jobs need to be demand driven and introduce new pedagogies to ensure that skills lead to higher employability of the workforce.