

Skills for Green Jobs: A Global View.

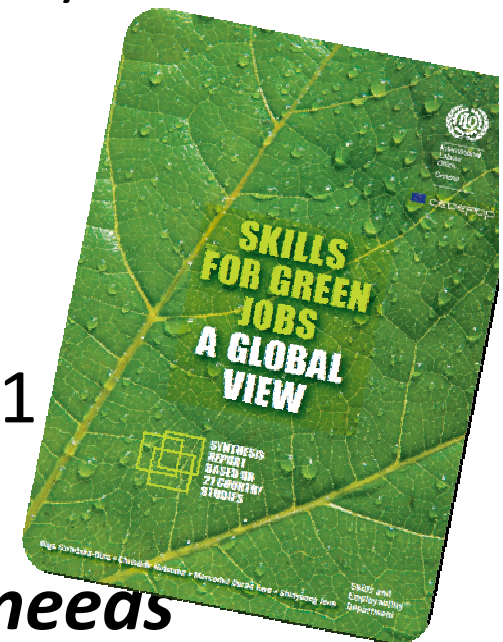


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Green Jobs & Skills by ILO

- Initial focus on defining ‘Green Jobs’ and employment impact (ILO-UNEP Green Jobs Report, 2008)
- A study on ‘**Skills for Green Jobs**’ in partnership with Cedefop, 2011
 - Qualitative research. Methods varied.
 - 148 case studies (107 by the ILO and 41 by Cedefop), covering 21 countries
- Studies on ‘**Early identifications of skills needs**’ with European Commission, 2011
 - Comparative analysis of methods and approaches
 - Two sector studies: Green building & renewable energy



What are green jobs? –ILO -1

- Green jobs are jobs which help to:
 - Reduce negative environmental impact;
 - Protect ecosystems;
 - Reduce energy consumption and use of raw materials;
 - Reduce green house gas emissions;
 - Minimize waste and pollution;and which are decent.



What are green jobs? –ILO -2

- Two types of ‘Green Jobs’:
 1. Newly created ‘green’ jobs
 2. Existing jobs which are made ‘greener’

Green structural change

- Additional jobs will be created.
- Some employment will be substituted
- Certain jobs may be eliminated without direct replacement
- Many existing jobs will be redefined

- New jobs created will offset those lost to some extent
- But those who will get green jobs are not necessarily those who will have lost their jobs

Retraining matters



Impact on employment

Country	Green Fund % of total GDP	Energy and Environmental Spending (USD)	Green Fund % of Economic stimulus	Estimated Employment
Japan	0,74%;	12.25 billion	6%	1,000,000 j
<ul style="list-style-type: none"> The “green” initiatives cover energy-saving and new energy technologies ; development of high-speed railway; investments in energy-saving and new-energy; research and development, including for carbon dioxide capture and storage 				
Philippines				110'000 j
<ul style="list-style-type: none"> Jobs to be created in reforestation, renewable energy in rural areas, retrofitting of public utility vehicles and the building of bicycle lanes for out of school youth. 				
Singapore		0.68 billion	4.96%	11,000 j
<ul style="list-style-type: none"> 11,000 jobs for environment and water technology, 7,000 for clean energy industry by 2015. 				
Renewable energy:				
<ul style="list-style-type: none"> By 2030, up to 12 million people in bio-fuels related agriculture; up to 2.1 million in wind energy, and 6.3 million in solar energy 				

Korea Green New Deal: employment targetting (2008)

Green New Deal's nine major projects

(Units: people, billion won)

Project	Jobs	Investment
Refurbishment of the four rivers	199,960	14,477.6
Eco-friendly traffic network (railroads, etc.)	138,067	9,653.6
National green information (GIS) infrastructure	3,120	371.7
Water resource facilities (small and midsize dams)	16,132	942.2
Green cars and clean energy	14,348	2,052.7
Recycling resources (refuse-derived fuel, etc.)	16,196	930.0
Forest restoration	133,630	2,417.4
Energy conservation village and school	170,702	8,050.0
Environmentally friendly living space	10,789	483.8

Source: Ministry of Strategy and Finance

Sectors affected and retraining needs



- Agriculture, forestry and fisheries
- Extracting industries and fossil-fuel energy generation
- Emissions intensive manufacturing, in particular:
 - ✦ Automotive sector and related supply chains;
 - ✦ Ship-building and related marine engineering activities.

Skills shortages

Skills shortages **already pose a major barrier to transitions to green economies and green job creation**

- In certain sectors and occupations
 - Wind, wave and tidal power in the UK
 - Renewable energies for manufacturing, and installation in the US
 - Environmental industry in Germany
 - Construction sector in Australia, China or South Africa
 - Lack of teachers and trainers in new green areas
- Particular soft skills



Changes in existing occupations outnumber new ones

- **Quantitative and qualitative changes**
- Skill content for occupations to become greener is far from being uniform across countries
- Many changes relate to knowledge about regulation and new technologies, some to new markets and demand
- **Emerging occupations** more often **require higher level qualifications**
- **Changes in existing occupations are most profound** and happen more often at the low and medium-skill level

Changing and emerging occupations

Degree of skill change	Occupational change	Typical skills response	Examples
None	None or only quantitative	None or increased training in existing occupation	Bus driver in CNG driven buses; forester
Low	Changing occupation	On-the-job learning or short training courses	Welder in wind turbine production; Organic farmer
Medium	Changing or emerging occupation	Short courses or longer continuous training	Energy consultant in building; car mechanic for electric cars or CNG cars
High	Emerging occupation	Initial training, university degree or longer continuous training	Solar energy technician; eco-designer; biofuels technician

Skills responses for greener economies

- At different levels: enterprise, industry, government (national, regional, local), by universities, training providers, research institutes, NGOs and international donors
- **Generally stronger in basic and higher education and weaker in TVET**
- Inside and outside existing education and training systems and mechanisms
- Effectiveness often too early to assess
- Combine top-down and bottom-up approaches



Why are there skills shortages?

- **Underestimated growth of some sectors**, such as for green technologies
- **General lack of scientists and engineers**
- Low reputation of sectors – failure to attract trainees
- **Lack of awareness** among new job opportunities
- **Weak policy coordination** between green growth strategy/technology, and skills strategy
- **National skill system is not responsive enough** to meet new skills demands

Summary findings

- Transitions to greener economies impact skill needs. Skills shortages may prevent successful implementation of environmental policies.
- Policy coherence between environment and skills policies have still a long way to go
- Most change occurs in the composition of existing occupations. Adjustment of curricula, standards etc. is thus required at all levels of training.
- The rate of change depends on the degree of effects of environmental degradation, policy, legislation and technology diffusion, as well as the role of market and consumer demand
- Vocational education and training is catching up less efficiently than higher education
- Effective responses are targeted, at industry level, through PPPs, and coherent multi-level cooperation
- Key role for identification and anticipation of skill needs!

Anticipation of skill changes

- Paucity of data on classification and incidence of green jobs
- The established LMI and skills identification systems proved useful, although not always used, and not always sufficient in the GJs context
- **Combination of quantitative estimates and qualitative surveys**
- Reliance on the grassroots level of research in all countries
- Tripartism in identification of qualifications' content and of competences needs is crucial
- **Sectoral approaches alone are seen as delimiting**
- More coordination is asked when it comes to skills for GJs
- Developed countries: look beyond established structures.
- Developing countries: emerging industry level analysis and establishment of relevant institutional mechanisms for social dialogue appear both useful and feasible.

For more information

- Early identification of green occupations and skills needs
 - Comparative analysis of methodologies and approaches
 - Green building
 - Renewable energy

http://www.ilo.org/skills/projects/WCMS_140837/lang--en/index.htm