



International Labour Organization

Promoting decent work for all

Green Jobs: the Impact of Climate Change in the World of Work

Martin Gasser m.gasser@itcilo.org
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Outline

- Social, economic, environmental challenges
- What's a Green Job?
- High potential sectors for Green Jobs (GJ)
- Green Jobs Programme of the ILO:
 - Examples of ILO projects per country
 - GJ Programmes

Green Jobs: Meeting challenges of 21st century

Achieving economic and social development and environmental sustainability

- **Environmental:** climate-related disasters (262 mill), water shortages (1.8 mill), environmental refugees (50 mill), displacement by flooding (330 mill), food shortages (180 mill now+600 mill 2080), loss of biodiversity
- **Social/decent work:** working poor (1.3 bill), unemployed (190 mill), young job seekers (500 mill), no access to social security (5.3 bill), food, shelter (1 bill), energy (1.6 bill)

Transformation to a sustainable economy

- Reducing climate change and other environmental challenges while allowing ‘clean and sustainable development’ – need for a Great Transformation.
- The transformation needs to be faster, more global and altogether more equitable than the one which led the world to the modern market economy.
- Profound impact on enterprises and workers
- Decent work? Social sustainability?

Green jobs – a definition

- Reduce consumption of energy and raw materials (dematerialize economies)
- Avoid greenhouse gas emissions (decarbonize economies)
- Minimize waste and pollution
- Protect and restore ecosystems and environmental services
- Can be created in all sectors and enterprises (direct, indirect and induced jobs)
- Decent jobs: adequate incomes, social protection and respect for workers rights
- Green Jobs Initiative: ILO, UNEP, IOE, ITUC - Green Jobs Report

GJ Report: High potential sectors

- Energy efficiency in buildings, industry, transport
 - Green building and retrofitting jobs (i.e. German Alliance for Work and the Environment – building retrofit programme serving 342,000 apartments: additional 25,000 jobs + saving 116,000 existing)
 - Jobs for green designers, architects, auditors, engineers, estimators project managers, construction trade, pipe fitters, sheet metal workers, general construction workers, etc.

GJ Report: High potential sectors

- Energy supply alternatives:
 - 300,000 workers globally are employed in wind power – 170,000 in solar photovoltaics
 - Renewables are generally labour-intensive sectors.
 - Higher investment on hiring people and less on acquiring machines, supplies, land and produce far more jobs at all pay levels than fossil fuel industries.
 - Clean energy programmes rely more on local economic activities.

	Average Employment over Life of Facility (Jobs per megawatt of average capacity)		
	Manufacturing, Construction, Installation	Operations & Maintenance/ Fuel Processing	Total
Solar PV	5.76–6.21	1.20–4.80	6.96–11.01
Wind power	0.43–2.51	0.27	0.70–2.78
Biomass	0.40	0.38–2.44	0.78–2.84
Coal-fired	0.27	0.74	1.01
Natural gas-fired	0.25	0.70	0.95

GJ Report: High potential sectors

- Mobility: mass transportation
 - Transportation responsible for an estimated 23 % of energy-related greenhouse gas emissions
 - Green auto-industry jobs: 235,000 (under 120 CO₂) and 800,000 (under 140 CO₂)
 - New transportation systems: shift away from private vehicles, retrofitting private and public transport
 - i.e. China India and Pakistan heavily invested in compressed natural gas (CNG) – introduction of 6,100 CNG buses by 2009 in New Deelhi expected to create 18,000 jobs

GJ Report: High potential sectors

- Recycling, waste management
 - No global figures
 - In developing countries recycling performed by informal network of “scrap collectors”
 - China:
 - 1.3 million people in formal waste collection
 - 2.5 million informal workers or scrap collectors
 - 10 million in aspects of recycling, reuse and remanufacturing
 - Brazil: 500,000 people involved in materials collection
- Challenge: In developing countries recycling jobs are largely driven by poverty (dirty and hazardous)

GJ Report: High potential sectors

- Sustainable agriculture and forestry
 - In 2006 31% of the Earth's population (1.3 billion) made their living from growing food and raising livestock (44.4 % in 1995)
 - Trends: intensive plantation of soy and palm oil, export-oriented production of tropical fruits, vegetables, wine, cut flowers, intensive livestock (meat)
 - Working conditions in “high-value” agriculture are extremely poor, affecting disproportionately women, high energy and chemical inputs needed, serious effects on biodiversity
 - Increasing distance from plough to plate, sharp increase in food-related trucking – many jobs but not green jobs

Examples Existing Green Jobs

- Renewable energy: 2.3 mill jobs globally
- Environmental industries US: 5.3 mill jobs
- Green jobs France: 220,000 (in 2 years) - -
efficient buildings, renewables, public transport
- Environment related jobs in EU 27: 8.67 mill
- Solar thermal China: 1,000 manufacturers,
600,000 jobs

Climate change and labour markets

- Employment affected in at least four ways:
 - Additional jobs created: i.e. pollution control devices
 - Some employment substituted: i.e. shifting from fossil fuels to renewables
 - Certain jobs eliminated without direct replacement: i.e. banned products
 - Many jobs transformed and redefined: i.e. plumbers, electrician, metal workers, IT managers...

On balance

- **Net gain in jobs** from active climate and environmental policies
- **Large potential in developing countries** and emerging economies
- Greening and green jobs **effective as economic stimulus**

Which implies:

- Major gains and losses, mostly within sectors
- Transformation of most jobs + sectors

Green Jobs Report policy messages

- **No need to chose** between climate protection and development/social justice
- Condition: **coherent policies**, scaling up investments and finance
- **Inaction** would massively destroy jobs and incomes
- **Prepare for change** and guide: anticipation, mapping
- **Pro-poor, decent jobs and fair transitions** to sustainable economies (adaptation and mitigation)

ILO programme on GJ: Priorities

- 5 Building blocks/priorities:
 - Tools to diagnose labour market impact and to inform policy
 - Practical approaches to greening enterprises
 - Promotion of green jobs in waste management and recycling
 - Green Jobs in renewable energy and energy efficiency
 - Job creation and enterprise in adaptation to CC

ILO country programmes on GJ

- Asia
 - China: mapping labour market impacts due to CC, energy efficiency, improving management at enterprise level for cleaner and greener productions
 - Bangladesh: waste management and access to renewable energy (with Grameen Shakti)
 - India: local development and renewable energy (i.e. biogas, composting)
 - Thailand: greening enterprises
 - Philippines: local development for adaptation to CC (UN joint programme on “Strengthening the Philippines Institutional capacity to Adapt to CC)

ILO country programmes on GJ

- Americas
 - Costa Rica: sustainable agriculture and eco-tourism
 - Brazil: biofuels, green jobs in social housing
 - Haiti: infrastructure for adaptation to CC (prevention of natural disasters)
- Africa
 - Tanzania: sustainable waste management

ILO programme on GJ: HQ

- ILO Turin Center: Green Jobs course:
 - Two editions of the GJ course for ILO constituents have been undertaken in 2009. Third course October.
 - Training in specific regions: Asia in October
- Skills department:
 - Skills for Green Jobs: 15 country studies
 - Analytical tools for identification of skills needs for green jobs
 - Collection of case studies to analyze skills responses to promote green jobs

ILO programme on GJ: HQ

- International Institute of Labour Studies:
 - Chapter of the World of Work Report to analyze the labour market and distributional effects of different policies used to address climate change
- ACTRAV (Workers)
 - Global Union Research Network Workshop on Green Jobs and Climate Change
 - Strengthening Social Dialogue
 - ACTRAV-TURIN: On-line Training on Sustainable Development for Trade Unionists
- ACTEMP (Employers)
 - toolkit on Climate Change

Thank you for your attention!

More information about the work of ILO on
Green Jobs:

www.ilo.org/integration/greenjobs/lang--en/index.htm