Human Capital Development in Green Technology

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1. ILMIA was established in 2012 and its core functions include:
   a) To conduct labour market research and analysis
   b) To disseminate labour market information. To consolidate disparate labour market statistics in a data warehouse to better reflect the evolution of conditions in Malaysia’s workforce and workplace towards a high income nation.

2. ILMIA strives to become the Centre of Excellence for:
   a) Analysing labour market trends and emerging human capital issues
   b) Contributing to the betterment of human capital planning and effective labour market policies
STOCK TAKE: CURRENT POLICIES IN MALAYSIA

National Green Technology Policy 2009
Energy, Building, Water and waste management and Transportation

Malaysia Budget 2010-2011
Developing Putrajaya and Cyberjaya as pioneer township in green technology

National policy on Climate Change
Roadmap for Malaysia to achieve 40% reduction of Green House Gas emission by 2020

Green Neighborhood Guidelines – Department of Town & Country Planning 2010
Smart location, Neighbourhood pattern and design, Green Infrastructure.
Green Township Framework – Guide Towards Low Carbon Cities 2010- Malaysian Institute of Planners
GOVERNMENT INITIATIVES

1. Kementerian Tenaga, Teknologi Hijau dan Air (KETTHA) collaborate with New Energy and Industrial Technology Development Organization (NEDO) to implement Green Action Plan For Putrajaya in order to achieve lower carbon town status.

2. Low Carbon Cities Framework & Assessment System (LCCF) leading to adapt element of low carbon area and reduce ongoing discharge of carbon. LCCF is a performance based system which able to estimate and calculate the level of carbon dioxide discharge.


4. Program MyHIIJAU, launched on 2012 to encourage industries in producing green technologies products. Address sustainable production in producing and sustainable consumption in marketing products.
HUMAN CAPITAL DEVELOPMENT PLANNING FRAMEWORK

DELIVERY SYSTEM
- Education
- Training

Education:
- Early childhood
- Preschool
- Basic education

Tertiary:
- University
- Colleges
- Polytechnics
- TEVT

LABOUR MARKET OPERATION

Issues
1. Unemployment
2. Competitiveness
3. Wage Flexibility
4. Critical Skills
5. Manpower requirements
6. Labour Mobility

Labour Supply
Labour Demand

Flow
Stock

Elasticity of employment and output by economic sector

Economic Growth by Sector
- Factor Intensity
- Production Technology

Population growth + Immigration

Cohort component method to estimate population

- Prices of Labour + Capital
- Industrial Incentives
- Labour Legislation
- Fiscal & Monetary Policy
- Exchange Rate

Elasticity of substitution between labour and capital

Source: Human Resource Development Planning in Malaysia: Method and Analysis, EPU, 1994
Structure of Malaysia’s Labour Force, 2013

Working Age Population
20.3 million

Labour Force
13.6 million

Employed
13.2 million

Outside Labour Force
6.7 million

Unemployed
424.6 thousand

Labour force participation rate (LFPR)
67.0%

Unemployment rate
3.1%

Source: Labour Force Survey Report 2013, Department of Statistics, Malaysia
**Upskilling Concept**

**Flow**
New entrance to labour market

*Industry Demand*

- Bridging Programme and Finishing School (SL1M, GEMS, SKK1M)
- Graduates from Institutions

**Stock**
Existing workers in labour market

- Skilled Worker: 28%
- Semi-skilled: 61%
- Low Skilled: 11%

2010

- 33% (2015)

**Upskilling**
To improve skills and capability of employees fulfilling the changes in technology and evolving environment

**Skills Upgrading**
To improve level of education and employees skills for better job employment with higher wages.
WORKFORCE COMPOSITION BASED ON CATEGORY UNDER 10th MP

Understanding Human Capital requirement for Green Technology

- The level of economic activity related to environment in Malaysia and employment impact of environment related policies.
- Number of green jobs creations
- Involvement of governments, employers and trade unions to promote sustainable development in a resource scarce and climate-challenged world.
- Green approach in implementation of development project.
- Awareness about green technology in education system
**HCD EMPLOYEES UPSKILLING PROGRAM**

4 upskilling program conducted benefiting 510 participants

<table>
<thead>
<tr>
<th>No</th>
<th>Program</th>
<th>Year</th>
<th>Agency</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Analytical Industry Development Program</td>
<td>2011</td>
<td>Aligent Technologies &amp; TalenCorp</td>
<td>30</td>
</tr>
<tr>
<td>2.</td>
<td>Advanced Green Composite Training Program TalentCorp</td>
<td>2011</td>
<td>MIGHT &amp; TalenCorp</td>
<td>50</td>
</tr>
<tr>
<td>3.</td>
<td>Technical Training for Biotech</td>
<td>2012</td>
<td>TalenCorp &amp; Xcell Training Sdn Bhd</td>
<td>400</td>
</tr>
</tbody>
</table>
HCD EMPLOYER INTERVENTION PROGRAM

GREEN TECHNOLOGY FINANCING SCHEME (GTFS)

• Government funded RM3.5 billion from 2010 until 2015 to encourage local companies to participate.
• 131 projects have green technology certificate which able to reduce 10.71 million tone carbon dioxide per year.

Promoted Activities
1. Renewable Energy
2. Energy Efficiency (EE)
3. Waste Recycling
4. Green Transport
5. Building Technology

Pioneer Status: Income tax exemption ranging from 70% to 100% for a period of 5 to 10 years

Investment Tax Allowance
60% to 100% on qualifying capital expenditure for 5 years

Reinvestment Allowance:
60% on qualifying capital expenditure for 15 consecutive years

Import Duty & Sales Tax Exemption
For raw materials/components and machinery and equipment
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GREENJOBS PROJECT MALAYSIA

Relevant Mandates and Rationale

**Reduction in GHG Emissions by 40%**

-2009 Malaysian Prime Minister Najib Tun Razak pledged a 40% reduction in Malaysia’s GHG emissions intensity by 2020 (run up to Climate Change Negotiations in Copenhagen CoP15)

Endorsed by National Policy on Climate Change

**Malaysian New Economic Model (NEM)**

-2010 Strategic Reform Initiatives (SRIs) to propel the country forward towards Vision 2020 goals and recommended that the government set a green economy policy platform for development in-line with the commitments made at Copenhagen CoP 15

**The National Green Technology Policy**

- 2010 Cabinet Committee on Green Technology with the Ministry of Energy, Green Technology and Water to support the development of new green industries and green jobs. The policy promotes the development of new green technologies in four main sectors: energy, buildings, water and waste management
Relevant Mandates and Rationale

**Green Jobs Action Plan Workshop (Kuala Lumpur)**
- **2011**, May  enhanced social dialogue on green jobs in Malaysia (Participants from employers’ (MEF) and workers’ (MTUC) groups as well as the government and academia) and set the stage for further discussions and collaboration between the ILO and tripartite partners in Malaysia on the promotion of green jobs

**Agreement between Government of Malaysia and the ILO**
- **2012** The Green Jobs Malaysia Project was born out and governed by the agreement signed between the parties on 15 May 2012, amended to be valid until 31 December 2014
Development Objective

To raise the capacity of the government and social partners in Malaysia in order to have a clearer understanding of the prevalence of green jobs across the economy, and to identify entry points for further green job creation, but also to identify supply side gaps, for a better understanding of the impacts on the labour market of climate smart policies and the potential for gender responsive green jobs creation.

By scenario modelling, government and social partners will be able to provide policy alternatives and devise programmes for the promotion of green employment opportunities, and conduct national discussions on the mainstreaming of green jobs into development, social and employment policies.
Specific Objectives

(1) Increased information of the environmental and socio-economic impact on employment

(2) Enhanced constituents’ capacity on green jobs and on how to use the analytical tool for green job analysis

(3) Occupational standards on green skills are analysed (developed), promoted, promoted and developed

Project Phases

Phase 1 - Data Gathering, Scoping & Green Jobs mapping Phase

Phase 2 - Construction/Expansion of the Dynamic Social Accounting Matrix (DySAM) Phase (Skills Needs Assessment)

Phase 3 - Capacity development/Training Phase

Phase 4 - Skills Standards Phase
The Project Phases in focus

Phase 1: Data gathering, scoping and mapping of Green Jobs

Profile of the economic and employment structure of the national economy including a review of data on the total scale and structure of employment in Malaysia

Key sectors:
1. Agriculture, fishery and forestry
2. Energy
3. Water and waste management
4. Solid waste management
5. Transport
6. Construction

- environment-related employment therein which are decent (Green Jobs), informal activity, trends of sustainability

Available online at the Community of Practice on Green Jobs AP (http://apgreenjobs.ilo.org)
Green Jobs
Policy Definition

Green jobs are decent jobs in any economic sector that:
• Reduce consumption of energy and raw materials
• Limit green house gas emissions
• Minimize waste and pollution
• Protect and restore ecosystems

(Source: Green Jobs: Towards decent work in a sustainable, low-carbon world UNEP/ILO/IOE/ITUC, 2008)

...help reduce environmental impact, ultimately to levels that are sustainable...
Green Jobs: Statistical Definition

...a subset of employment in the environmental sector that meets the requirements of decent work (i.e. adequate wages, safe conditions, workers’ rights, social dialogue and social protection).

Job in any economic unit involved in the following:
- Environmental protection activities (primary purpose to prevent, reduce, eliminate pollution and other forms of degradation of the environment)

- Resource management activities (primary purpose to preserve and maintain the natural resources stock and safeguarding depletion)

Source: ICLS 2013 – Guidelines concerning a statistical definition of employment in the environmental sector
Phase 2: Construction of a Dynamic Social Accounting Matrix (DySAM)

A final DySAM report showing the links between environmental policies and the economy and how selected examples of exogenous shocks or policy intervention can impact the economy, labour market and CO2 emission with placeholders is already completed in collaboration with an international and Malaysian team of experts.

Develop a tool to integrate the national occupation standards on green skills developed in selected occupations in key sectors – energy, transportation, waste and water management and building. In the process, the project would help to better define the different Green Jobs Skill categories and official certification linked to training or upskilling courses that would need to be designed.
GJ-DyESAM Extension: Employment & Emission Indicators

DySAM

Demographic Indicators

Systems of Social Indicators

GJ-DyESAM Labour and Employment Equivalent

GJ-DyESAM CO2 (System of Environmental Indicators)
Phase 3: Capacity development/Training of DySAM users in Malaysia

By the end of the two level of trainings, the participants formed the “core” of DySAM users and updaters (national and international experts’ pool) possessing deeper understanding on the following:

key concepts of DySAM having undergone hands-on experience in the construction
Phase 4: Skills Standards

2011- “Building on the results of the Green Jobs Mapping and DySAM Analysis, pilot test the application and implementation of national occupational standards on green skills developed in selected occupations in key sectors”

Current Focus:
Awareness raised and compliance to developed national competency standard on green technology and national occupational skills standards supported through promotional activities and creation of pool of masters trainers (as confirmed by the Tripartite Project Committee, June 2014)

- 2 runs of Masters Trainers Course on national competency standards/national occupational standards (selected sectors) resulting into the creation of a pool of 40 trained Master Trainers
- Green Skills HR Summit for 400 stakeholders resulting in better understanding and general endorsement of the relevant skills standards by 20 November 2014.
Challenges for GreenJobs Skills

1. Skills shortages are already hampering the transition to a green(er) economy

<table>
<thead>
<tr>
<th>Impact on Jobs/Skills</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Created</td>
<td>Manufacturing of green technologies, green equipment, green services</td>
</tr>
<tr>
<td>Substituted</td>
<td>Shifting from fossil fuels to renewables</td>
</tr>
<tr>
<td>Transformed and redefined “greening”</td>
<td>Skills sets, work methods and profiles of plumbers, electricians, metal workers, and construction workers greened</td>
</tr>
</tbody>
</table>
**Challenges for GreenJobs Skills**

1. Skills and environmental policies need to come together (coordination at industry/sector/national level)- STANDARDS
2. Green structural change will be profound in certain sectors

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<tr>
<td>Substituted</td>
<td>Shifting from fossil fuels to renewables</td>
</tr>
<tr>
<td>Eliminated (without direct replacement)</td>
<td>Packaging materials are discouraged or banned and production is discontinued, mining of asbestos</td>
</tr>
</tbody>
</table>
Skills for Green Jobs

Main findings of 21 country study:

- Underestimated growth of green sectors
- General lack of scientists and engineers
- National skill structure does not meet skills demand
- Low reputation of sectors - failure to attract trainees
- Poor coordination

Source: ILO 2011 “Skills for green jobs: A global view” and other products from the EC and ILO joint management agreement “Knowledge sharing on early identification of skill needs”
Conclusion & Way Forward

Quality supply of human capital and efficient labour market to drive future growth

Supply and development of human capital
- Strong pipeline of relevant workforce into the labour market from Education Institutions
- High proportion of skilled workers in Green Technology through up-skilling existing workforce

Labor market efficiency
- Labour market that able to match demand and supply
- Effective management of alternative sources of labour (i.e., expats, foreign labour, women)
- Effective of current wage system

Sector-driven demand
- Identify demand in green technology industry existing sectors or new sources of growth
- Drive further investments in key growth sectors identified

To improve workforce quality, the Human Capital Initiative will tackle supply-side as well as labour market efficiency issues.

Sector-driven demand (e.g. Green Technology Industry) will be aligned with this Initiative.
THE END

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THANK YOU

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