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Green Jobs for Women and Youth

What Can Local Governments Do?





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Cover Images

Left to right: Adam Rogers/UNDP Nigeria, Steve Sabella/UNDP Palestine, Joydeep Mukherjee/UNDP India, UNDP/Timor Leste, Sophia Paris/UN. Background: Hakki Arslan/Shutterstock.

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ACRONYMS AND ABBREVIATIONS

APP	Areas of Permanent Preservation
BRT	Bus Rapid Transit
CEPAR	Centre for Studies on Agro-ecological Production (Argentina)
CERD	Centre for Empowerment and Resource Development (the Philippines)
CNG	Compressed Natural Gas
CSOs	Civil Society Organizations
FAO	Food and Agriculture Organization
FIRMED	Fishery Integrated Resource Management for Economic Development (the Philippines)
GDP	Gross Domestic Product
ILO	International Labour Organization
INTA	National Agricultural Technology Institute (Argentina)
LPG	Liquefied Petroleum Gas
MCC	Maseru City Council (Lesotho)
NGOs	Non-governmental organizations
OECD	Organisation for Economic Co-operation and Development
PAU	Urban Agriculture Programme (Bolivia)
PPPSD	Public-Private Partnerships for Service Delivery
PV	Photovoltaic
R&D	Research and Development
SSA	Sub-Saharan Africa
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
WMC	Waste Management Consortium

FOREWORD

In a world of rising inequality, local governments play a critical role in building pathways for sustainable development, especially by creating an enabling policy environment and innovating policy solutions. Local institutions such as local government units, both formal and informal local organizations including cooperatives, culture groups and non-governmental organizations (NGOs), are well placed to promote opportunities for green jobs, build rural resilience, reduce urban poverty and ensure a human rights-based approach to local development planning.

These issues will be examined through a policy paper series on the role of local governments in promoting sustainable human development. Each policy paper in this series will provide a set of specific and practical policy options to be considered by local governments in addressing a number of challenges.

The first paper of this series discusses the current employment trends of women and youth and the role of local governments in ensuring that women and youth have access to jobs that are decent and that do not harm the environment. It focuses on real examples from developing countries in which local governments have introduced programmes that have created work opportunities for the youth and women while addressing environmental challenges as well.

While there are certainly no 'clear-cut' answers to addressing the challenges of local development, feasible measures can be distilled from proven approaches and country examples to provide some key lessons and recommendations to guide local development planning. This policy series aims to provide evidence of such examples. It will also provide good references to South-South cooperation partners in exchanging southern solutions to address challenges in achieving sustainable human development.

I hope that the development practitioners will find this issue useful.

Selim Jahan
Poverty Practice Director
Bureau for Development Policy
United Nations Development Programme

1 INTRODUCTION

More than 400 million people will join the workforce within the next decade[1] and the creation of green jobs is an opportunity to simultaneously address this employment challenge and support the transition of countries to green economies. Understanding of the vulnerability of natural systems and the impact of climate change on human development has led to greater efforts to include mitigation and adaptation strategies in the policy making process of many countries, as well as at the highest global level. How can these efforts be translated into effective policies and programmes that improve the livelihood of people and communities? Decent local jobs that can deliver environmental benefits as well as pathways to economic empowerment are often called 'green jobs'. The United Nations Environment Programme (UNEP) contends that the greening of economies is a "new engine of growth" and a "net generator of decent jobs" and as such is a vital strategy for the elimination of persistent poverty.[2]

This paper presents examples of policies and programmes initiated by local governments that promote green jobs especially for women and youth (persons between the ages of 15 and 24). The aim is to inspire more local governments to consider policies that address the economic, social and environmental dimensions of sustainable development.

1.1 Definitions of 'green jobs'

There is no generally agreed upon definition of 'green jobs'. While this topic is of interest across governments, academia and the private sector, various studies define the term differently. The most widely accepted definitions come from the International Labour Organization (ILO) and UNEP. The ILO defines green jobs as "the transformation of economies, enterprises, workplaces and labour markets into a sustainable, low-carbon economy providing decent work".[3] UNEP defines green jobs as "work in agriculture, industry, services and administration that contributes to preserving or restoring the quality of the environment".[4] UNEP further elaborates on its definition by qualifying green jobs as 'good' jobs that meet longstanding demands and goals of the labour movement such as adequate wages, safe working conditions and worker rights, including the right to organize labour unions. These definitions emphasize that green jobs are crucial for the preserving the environment and must also provide decent work, advance the economy and promote social equity.

1 ILO, *Global Employment Trends 2012*, 2012.

2 UNEP, *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication*, 2011.

3 ILO, *The Green Jobs Programme for the ILO*, 2012.

4 UNEP, ILO, IOE, ITUC, *Green jobs: Towards Decent Work in a Sustainable Low-carbon World*, 2008.

1.2 Green jobs: an opportunity for women and youth

Global unemployment has been rising at unprecedented rates, increasing by nearly 27 million people since 2007. In 2012, one out of every three people in the labour force — 1.1 billion people — were either unemployed or living in poverty.[5] Women in general have more difficulty finding jobs than men. In its publication *Global Employment Trends 2012*, the ILO reported that from 2002 to 2007, women had a higher unemployment rate at 5.8 percent in comparison with men at 5.3 percent. By 2012, this rate had increased by 0.7 percentage points, eliminating 13 million jobs for women. Women had higher unemployment rates than men in Africa, the Arab region, South and South-East Asia, and Latin America. Also, women were more limited in their choice of employment across sectors, and they continued to be segregated into particular types of occupations.

Young women, in particular, have more difficulty finding work. The female youth unemployment rate in 2009 stood at 13.2 percent compared to 12.9 percent for young men. This is a gap of 0.3 percentage points is the same gender gap as seen in 2007. Some areas such as South Asia and East Asia have reported decreases in female employment-to-population ratios, but other areas such as Latin America have reported increases as high as 6.3 percentage points. Figure 1 shows changes in employment-to-population ratios by region and sex between 2002 and 2011.[6]

Women worldwide contribute to the economy and its productivity. They face many barriers, however. Legal, social, financial and educational barriers are hindering women's productivity and preventing them from realizing their full economic potential. This is not only holding back women; it is holding back national economic performance and growth. Guaranteeing equal opportunities for women and men is not just the right thing to do; it is smart economics. Also, the benefits go beyond the individual because women who have access to financial resources through employment or income-generating activities are more likely than men to invest in their children's health and education — an investment in the workforce of tomorrow.

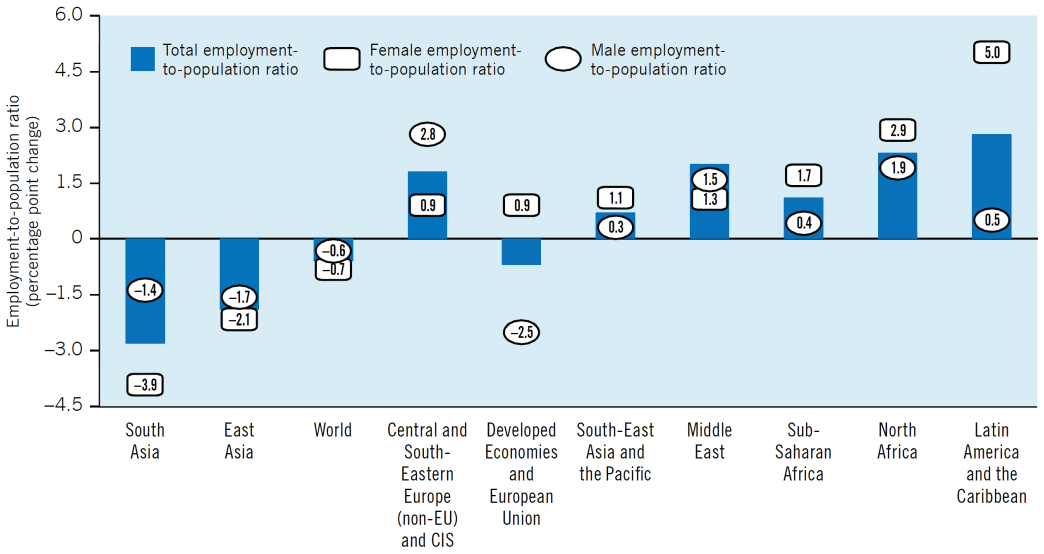
Like women, young people also face many barriers to employment. Youth are nearly three times as likely as adults to be unemployed. The recent financial crises, for example, hit youth the hardest. From 2007, the number of unemployed youth increased by 4.2 million, for a total of 74.7 million unemployed youth in 2011. In fact, the global youth unemployment rate of 12.7 percent remains a full percentage point above the pre-crisis level of 11.7 percent in 2007.

Many young people have given up on finding employment, the ILO reports: "In addition to the 74.7 million unemployed youth around the world in 2011 — a growing number of whom are in long-term unemployment — an estimated 6.4 million young people have given up hope

5 ILO, *Global Employment Trends 2012*, 2012.

6 Ibid.

Figure 1. Changes in employment-to-population ratios by region and sex, 2002–2011



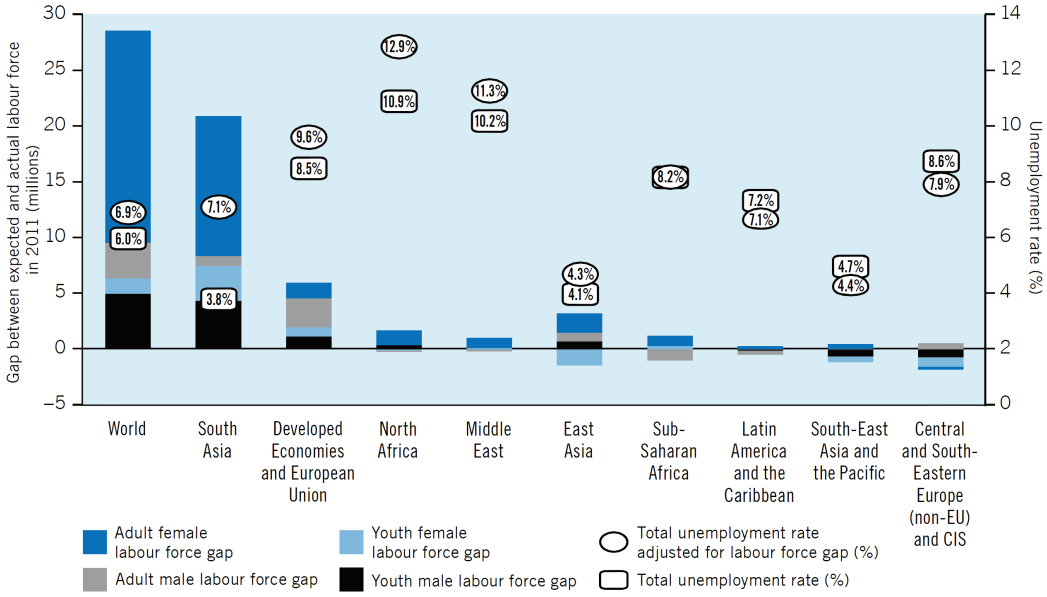
Source: *Global Employment Trends, ILO (2012)*

of finding a job and have dropped out of the labour market altogether."[7] The longer a young person remains out of the labour force, the more difficult and costly it is to return to productive employment. Unemployment is related to social exclusion, including susceptibility to anti-social behaviour (including juvenile delinquency) and social unrest, as was seen in several countries in recent years. The challenges pre-date the financial and economic crisis. Even before 2007, youth unemployment was higher than adult unemployment, and many well-educated youth who were employed, especially young women, were involved in relatively unskilled or informal jobs. This contributed to substantial frustration among the youth and their families. As the outlook for jobs continues to deteriorate at the present, youth might see slight advantage in continuing their education or training, which would have substantial negative socio-economic consequences over the years to come. Figure 2 shows the gaps in the labour force disaggregated by young and adult males and females.

Figure 2 indicates that young women have been particularly affected by the global economic crisis. In South Asia, for example, women account for 60 percent of the region's labour force shortfall but comprise less than 22 percent of the labour force. Youth — both young women and young men — account for a further 35 percent of the shortfall though they comprise only

7 ILO, *Global Employment Trends 2012*, 2012.

Chart 2. Gap between actual and expected labour force in 2011, total unemployment rates and unemployment rates adjusted to account for reduced labour force participation, world and regions, 2011



Source: *Global Employment Trends, ILO (2012)*

20 percent of the labour force. Adding this labour force shortfall to the region's unemployed would dramatically raise the unemployment rate from 3.8 percent to 7.1 percent.[8]

Unemployment in the Pacific Island countries reaches as high as 60 percent in some countries. This has made it difficult for new entrants to the job market to seek employment, with youth and women being the hardest hit. In Samoa and Vanuatu, youth make up nearly 60 percent and 50 percent of the total unemployed population respectively. In the Marshall Islands, economically active youth are nearly three times as likely to be unemployed as their adult counterparts.[9]

The disadvantage of women in the labour market is well-documented in the region. Under-represented in the formal sector, there is also segmentation in the market with jobs still defined as 'traditionally female' (UNESCAP, 2008b). In Fiji, Samoa and the Solomon Islands, less than one third of the employed are women; in some cases they tend to be more employed in urban verses rural economic activities.[10] Men dominate jobs in both the private and government sectors in the

8 Trends for this region are heavily influenced by India, which accounts for 74 percent of the region's labour force.

9 ILO, Asia-Pacific Labour Market Update, October 2012. Available from: *www.tinyurl.com/ILO-AP-oct2012*.

10 UNESCAP, 2008b, p. 4.

region. Sixty-one percent of government employees, totalling approximately 6,500 people, are male, while only 39 percent are female. In Vanuatu, for example, the population of about 246,000 has the greatest gender labour disparities in urban areas, where only 43 percent of women are employed.

In Africa, there are approximately 200 million people between the age of 15-24 years and it is expected that this population will double by 2045. Of the total unemployed, 60 percent are youth. More specifically, in sub-Saharan Africa youth unemployment was fairly stable between 2005 and 2011 at 11.5 percent and increased in 2012 to 12.8 percent. Youth unemployment rates are also higher for females than males. Women in SSA have an unemployment rate of 8.8 percent compared to 7.7 percent for men. They are also more likely to engage in vulnerable employment, mostly contributing to family work or to low-value, low-productivity work than men, which lacks elements of decent work.

The Arab region has one of the highest unemployment rates in the world, reaching 9.3 percent in 2001-2011 versus 6.6 percent for developing regions. Unemployment is predominantly concentrated among youth in the Arab region (aged 15-24). According to ILO and UN data, youth unemployment reached 24 percent in 2005-2011 (more than double the world average of 11.9 percent) and currently accounts for more than 50 percent of the total Arab unemployed. The average unemployment rate for young Arab women is estimated at 35 percent compared to 20 percent for young Arab men, according to the most recent surveys (2004-2011). In 2009, only 14 out of every 100 young women were employed, compared to 41 out of every 100 young men.[11] These figures will most likely increase as the youth population grows. It is expected that by 2040 the youth population will account for 66 percent of the total population in the region.[12]

The unemployment rates for Arab women are the highest in the world and the gap between male and female employment remains high. Arab women's unemployment rate is double that of Arab men (16 percent and 8 percent respectively). This is due to the gendered nature of some jobs, making it difficult for women to take advantage of new opportunities or areas where there is demand. Women in this region tend to be concentrated in social, community service and agricultural jobs. This pattern reinforces to a great extent the traditional division of labour. Women also tend to have less access to education and are relegated to low-productive, low-paying jobs or at times are forced into early marriage that further limits their access to employment.

Governments can take action to create employment opportunities for vulnerable groups such as women and youth, complemented by vocational or tertiary training programmes. Green jobs creation is as an opportunity to address the challenges to employment faced by women and youth at the same time as countries are taking steps to transition to low-carbon economies. In a

11 UNDP, *Arab Development Challenges Report 2011: Towards the Developmental State in the Arab Region*, 2011, p. 40.

12 Ibid, p. 39.

well-functioning labour market, a low-carbon economy cannot be expected to add or reduce net jobs in the long run. However, with the current severe unemployment and underemployment, the net employment creation effect is likely to be larger.[13] The number of green jobs is currently on the rise and it will be the economic driver for years to come. Transitioning to low-carbon economies will require large investments in new technologies, equipment, and infrastructure that will generate new employment and retain and transform existing jobs in many sectors of the economy. As a matter of human rights and smart economics, the participation of poor women and youth workers must not be overlooked.

1.3 Increased vulnerability of women and youth during transition to low-carbon economy

According to UNEP, labour markets are expected to be affected in at least four ways as climate change regulations become enforced in many countries: 1) creation of additional jobs; 2) substitution of jobs such as shifting from waste burning to recycling; 3) elimination of jobs without replacing them; and 4) transformation of current jobs as day-to-day skills and work methods become 'green'. As countries move more towards the creation of green jobs, some economic sectors will shrink and others will expand. Those on the increase might absorb a significant share of the shrinking sector if appropriate skills are available. It will also be important to mitigate the impact on women, who are in general more likely to be laid off when jobs are lost or unskilled jobs are replaced with skilled jobs.

Women are increasingly being seen as more vulnerable than men to the effects of climate change because they represent the majority of the world's poor and are proportionally more dependent on threatened natural resources. The disproportionate impact was noted in UNDP's 2007 Human Development Report when it stated that "climate change is likely to magnify existing patterns of gender disadvantage".[14] In many countries, droughts, floods and deforestation caused by climate change are burdening women with increasing tasks, leaving them less time to earn income or obtain education for new or better jobs. This further slows advancement towards gender equality and hampers efforts to achieve broader goals such as poverty reduction and sustainable development.

Like women, young workers are doubly vulnerable, facing job loss in the shift to green economies and suffering the environmental impact of climate change. Youth from low-income households who cannot afford vocational or tertiary training programmes are more likely to be laid off. As highlighted in the previous section, young women and men represent a large

13 UNEP, *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication*, 2011.

14 UNDP, *Human Development Report 2007/2008, Fighting Climate Change: Human Solidarity in a Divided World*, 2008, pp. 81–82.

segment of the world's population and the majority of them live in developing countries.[15] Youth unemployment is already higher than among adults. Most of the world's young people live in areas where dependence on natural resources (e.g. agriculture, forestry and fisheries) and persistent poverty intersect. In this context, climate change could pose a serious threat to youth livelihood patterns and economic stability. They face gradual disappearance of their traditional way of generating income through farming or fishing, for example. Green jobs could be created to protect their livelihoods or to provide alternative sources of income. Failing to address climate-related challenges could undermine the successful assimilation of youth into society and could eventually perpetuate or even worsen widespread poverty and inequality.

Green investments do not necessarily guarantee equal access to jobs and decent work for women and youth, nor to services and key resources that might help to position them effectively for job opportunities. Since women and youth often have limited training and experience, their access to green job opportunities may be further limited. Worldwide, some 2.3 million women and men have found renewable energy jobs in recent years, and UNEP estimates that a projected investment of US$ 630 billion by 2030 would translate into at least 20 million additional jobs. However there is no indication how many of these new jobs will be for women and youth.[16] Youth jobs on average are unlikely to be green jobs in the United States, for example, where youth aged 16 to 24 hold about 11.3 percent of all green jobs compared to about 12.3 percent of all jobs.[17] Of the 20 million additional jobs projected, half of the newly created green jobs will be in developing countries where gender and youth disparities in the labour market are large. Local governments must thus, implement adequate policies and develop programmes and measures that not only create green jobs, but also make them equitable in terms of access and wages, especially for women and youth.

15 According to the UNDESA, 85 percent of the world's youth live in developing countries, with approximately 60 percent in Asia alone. A remaining 23 percent live in the developing regions of Africa, and Latin America and the Caribbean. By 2025, the number of youth living in developing countries is expected to grow to 89.5 percent. *http://social.un.org/index/Youth/FAQs.aspx*.

16 UNEP, ILO, IOE, ITUC, *Green jobs: Towards Decent Work in a Sustainable Low-carbon World*, 2008.

17 Gracey, Kyle and Michael Davidson, *An Updated Analysis of Youth in the Green Economy*, 2011.

2 LOCAL LEVEL EXAMPLES OF GREEN JOBS INITIATIVES

The green job plan at the local level must take into account women and youth. Almost half a billion young people will join the workforce within the next decade. It is critical to attract them to new sectors, to provide them with green and decent jobs and to ensure the availability and accessibility of skills-enhancing programmes that will promote their assimilation into the labour market. A green job plan also needs to provide opportunities for women and facilitate their employability through anti-discrimination and family-friendly strategies, special programmes and quotas to hire women for non-traditional jobs, green skills training for women, and policies aimed at reducing gender wage gaps.[18] Green jobs also should be relevant for informal workers, again comprising mostly women and youth, and provide them with a pathway towards decent work.

Adapting to and mitigating climate change will entail a transition to new patterns of production, consumption and employment. Huge opportunities exist to create green jobs through energy and industrialization policies that reduce environmental degradation. These jobs can provide decent work and incomes that will contribute to sustainable economic growth and help lift people out of poverty. Women and youth can be strong change agents and key contributors to climate change mitigation and adaptation programmes especially at the local level. Green jobs in agriculture, industry and services can promote sustainable economic growth with long-term economic impact, according to a report by ILO (2008).[19]

The section below provides examples of existing policies and programmes that are promoted and/or supported by local governments in sectors such as agriculture, public transportation, renewable energy and waste management and recycling, in both rural and urban settings. These local initiatives have been instrumental in creating jobs for women and youth while at the same time preserving the environment.

2.1 Greening rural development

Local institutions often take a central role in promoting green job opportunities in rural settings. Local government units, non-governmental organizations (NGOs), and formal and informal local organizations such as cooperatives and cultural groups each have their part to play. Several local governments have captured green job opportunities by introducing programmes coupled

18 Anabella Rosenberg, *Decent and Green Jobs with a Just Transition: A Step Towards Sustainable Development*, International Trade Union Association, 2012, p. 5.

19 UNEP, ILO, IOE, ITUC, *Green jobs: Towards Decent Work in a Sustainable Low-carbon World*, 2008, p. 5.

with training schemes targeted specifically for women and youth — initiatives that also serve to address the high unemployment disparities that exist within their localities in rural areas.

SOUTH AFRICA: Youth and women employment creation for water security in Keiskammahoek

The local government of Keiskammahoek, one of the poorest areas in the country, launched the Working for Water programme in 1995 to combat the devastating effects of alien species in waters on biological diversity and water security, supported through a partnership with the South African Department of Water and Environmental Affairs. The programme places special emphasis on creating jobs and training for unemployed women and youth.

Workers are selected for jobs including slashing plants, applying herbicides or acting as a section leader, and men and women are paid equally. The selection of workers is done by a community panel made up of district councillors, representatives of local government agencies and organizations, and local church leaders. The programme requires 60 percent of workers to be women, 38 percent youth, and 2 percent disabled. The selection process targets the poorest segment and employment is limited to one person from each household where there is no individual working. The workers are organized in a cooperative at the start of the two-year employment period. Women may be re-employed but men are restricted to a five-year cycle.

To date the programme has cleared more than one million hectares of invasive alien plants, providing jobs and training to approximately 30,000 people per year, of which 52 percent are women. The programme aims to create an additional 4.5 million work opportunities for women and youth, averaging 100 days each in 2009–2014 as it expands it work to other regions in South Africa.

In addition to creating jobs, the programme has increased stream-flows and water availability. It has also contributed to improvements to land productivity, the maintenance of biodiversity in ecologically sensitive areas where invasive plants often overtake native species, greater resilience to fires, and support for the conservation of many protected areas and reserves critical to South Africa's growing tourism industry. It has also facilitated a number of other public employment programmes such as Working for Wetlands, Working on Fire, Working for the Coast, Working for Tourism and Working on Waste. Proposals are being prepared for other programmes such as Working for Energy, which will focus on activities that reduce greenhouse gas emissions such as installing solar water heaters, improving the energy efficiency of government buildings and generating energy from biomass waste.[20]

20 IPC-IG, "Green Jobs for the Poor: Why a Public Employment Approach is Needed Now", No. 105, February 2010.

The example below from the Philippines promoted women's employment in fisheries that were predominately controlled by men. The success of the project eventually resulted in the passing of several decrees that gave equal recognition to women fishermen's rights and work opportunities.

THE PHILIPPINES: Enhancing women's participation in the fishery sector in Caraga

The diverse coastal and marine ecosystems of the Philippines are in sharp decline due to unsustainable exploitation and destructive fishing techniques. Particularly hard hit are the region's mangroves and coral reefs, which have been eroded by dynamite fishing. As of 2008, only 5 percent of the coral reefs in the Philippines were in excellent condition. The loss of mangrove forests has not only resulted in the deterioration of sea grass and coral reef ecosystems, but also substantially lowered the productivity of coastal fisheries and translated to lost incomes for coastal communities, who depend on marine resources for their well-being and livelihoods.

The Centre for Empowerment and Resource Development (CERD), an NGO, implemented a programme for Fishery Integrated Resource Management for Economic Development (FIRMED) in partnership with local government units at the barangay, village or municipal levels. The programme aims to build capacities of the organized fishers in the Caraga region, the poorest region in the Philippines.

This programme emphasizes women's empowerment and awareness-raising on gender issues. Local women are provided with leadership and management training, and supported to participate in decision-making processes at the household level as well as at project sites. More than 50 percent of leaders in each community-based self-help group (what CERD refers to as 'fisher-folk organizations') are women, which is a substantial improvement from the almost non-existent presence of women in leadership roles before the initiative began. Women have improved their income levels and gained more job opportunities. For each fisher-folk organization that is formed, a corresponding gender and health committee is created.

During implementation of its project in Hinatuan, and the development and strengthening of fifteen community-based fishing organizations, CERD was able to influence government programmes and policies both at the barangay and municipal levels. This bridge-building resulted in local and national governments passing several ordinances that were responsive to the demands and needs of local fishers, especially women. The Philippines "Magna Carta of Women", approved in 2009, gives equal recognition to women fishermen's rights and opportunities. And, due to the involvement of local governments in the programme, the use of and access to coastal municipal waters have been more closely monitored, registration of fishers has been promoted and greater controls have been placed on illegal and destructive activities.

The partnership between CERD and the local government units at the barangay, village or municipal levels was essential to the programme's success. This partnership made it possible to address the deterioration of coral reef ecosystems in the region and, at the same time, address

gender employment and empowerment issues. Local government units also provided support through enabling policies related to fisheries management and biodiversity conservation. Support was also provided through budget allocation from local development funds.[21]

2.2 Greening cities

By 2020, developing countries in Africa, Asia and Latin America will be home to some 75 percent of urban dwellers and to eight of the largest cities with populations that will exceed 20 million, according to the Food and Agriculture Organization (FAO). It is also expected that 85 percent of the poor in Latin America and approximately 40-45 percent of the poor in Africa and Asia will be concentrated in towns and cities. These cities will face difficulties in creating sufficient formal employment opportunities for the poor (especially women and youth) and will face increasing challenges in the disposal of urban wastes, water management and maintenance of air and river water quality. This rapid urbanization will increase urban poverty and contribute to many environmental challenges.[22]

A more optimistic future for the world's developing cities is both imperative and possible. Cities are viewed by many of the rural poor as places of opportunity in terms of employment and improved living standards. Cities generally serve as engines of social progress and national economic development. The challenge, however, is to steer urbanization from its current unsustainable path towards greener cities. Greening cities can create jobs in a number of areas including: 1) urban and peri-urban green agriculture; 2) public transport; 3) renewable energy; 4) waste management and recycling; and 5) green construction.[23] The core principles of greener cities can guide urban development towards a future in which cities ensure food security, decent work and income, a clean environment and good governance for all citizens.

Municipal governments must be proactive in planning for the future. In 2008, the share of the urban population exceeded the share of people living in rural areas at the global level for the first time.[24] In least developed countries, where the majority of the population still lives in rural areas, growth of the urban population has now outpaced the growth of the rural populations.[25] Local governments in urban contexts face the challenge of responding to such population changes through policies and mechanisms that create employment opportunities for their rising urban

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21 UNDP, *Equator Initiative Case Studies: Local Sustainable Development Solutions For People, Nature, and Resilient Communities*, 2012. Available from: *www.equatorinitiative.org/images/stories/winners/46/casestudy/case_1348151407.pdf*.

22 FAO and World Bank, "Urban Agriculture For Sustainable Poverty Alleviation and Food Security", 2009.

23 UNEP, *Towards a Green Economy*, 2011.

24 UNFPA, *State of the World Population 2007: Unleashing the Potential of Urban Growth*, 2007.

25 UNEP, *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication*, 2011.

populations, while simultaneously maximizing the positive benefits of urbanization to develop green economies.[26]

2.2.1 Urban and peri-urban green agriculture

A starting point for growing greener cities is for local governments to recognize and integrate into urban policy and planning many of the creative solutions that the urban poor themselves have developed to strengthen their communities and improve their lives. One of those solutions is urban and peri-urban horticulture, an essential feature of green city planning in a number of developing countries. This is defined as the cultivation of a wide range of crops including fruit, vegetables, roots, tubers and ornamental plants within cities and towns and in their surrounding areas. It is estimated that 130 million urban residents in Africa and 230 million in Latin America engage in agriculture, mainly horticulture, to provide food for their families or to earn income from sales, which is mostly done by women.

Urban agriculture has a role in poverty alleviation for the urban population, and awareness of this role is growing. However, urban and peri-urban agriculture still remains an informal sector that is not being integrated in agricultural policies or urban planning for the creation of green jobs. Urban and peri-urban green agriculture not only contributes to local economic development and poverty alleviation of women and youth in particular, but it also contributes to the greening of cities and the productive reuse of urban waste, as UNEP contends: "Green urban agriculture can reuse municipal wastewater and solid waste, reduce transportation costs, preserve biodiversity and wetlands, and make productive use of green belts."[27] Thus, the greening of urban agriculture will have a positive impact on about two-thirds of urban and peri-urban households in developing countries, who are involved in agriculture.[28] Additionally, women marginalized in other forms of employment in the formal sector of the urban economy, often dominate urban cultivation. Research from many countries including China, India, and Turkey, however, shows that women make up a disproportionate share of unpaid helpers in urban agriculture and wages for women are significantly lower than for men.[29] There are many important policy considerations and practices that can help to achieve gender equality in the urban agriculture sector.

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26 For example, essential service delivery (of health, education, etc) and infrastructure development (housing, water, sanitation, transport, etc) in cities can be less costly due to economies of scales benefits. Urbanization can also reduce energy consumption, particularly in transport and housing if construction is well done.

27 UNEP, *Towards a Green Economy*, 2011.

28 FAO, *The State of Food and Agriculture 2010–2011: Women in Agriculture: Closing the Gender Gap for Development*, 2011.

29 Rachel Nugent, The Impact of Urban Agriculture on the Household and Local Economies, Thematic Paper 3. Available from: *wentfishing.net/farmlit/Theme3.pdf*.

SENEGAL, BOLIVIA AND ARGENTINA: Sustainable community-gardening development for food security and income generation in poor municipalities

Yards, roofs and vacant places in the cities of Dakar and Pikine in Senegal are the focus of micro-garden project launched by FAO in collaboration with the Ministry of Agriculture and city administrators. The projects for sustainable community gardening introduced micro-garden technology for out-of-land horticultural production in overlooked locations and started community gardening centres in low-income areas. More than 4,000 urban residents, most of them women, have started micro-gardens that produce on average of 30 kg of vegetables per square metre per year, enough to satisfy family needs and build a surplus for sale.

Organic gardening in small greenhouses became popular in the City of La Paz, Bolivia, where the El Alto municipality along with FAO supported a micro-garden programme for low-income families and women. Some 1,500 households participated in training in the organic cultivation of fruits, vegetables and herbs in small greenhouse units measuring 40 square metres. The units provide fresh vegetables all year round for home consumption and sale through neighbourhood markets. The innovative practice has resulted in a significant increase in vegetable consumption and income. Due to its success, El Alto created an urban and peri-urban horticulture unit to manage the expansion and scaling up of the programme in other cities.

Another example of urban agriculture is from the city of Rosario, Argentina, where vacant land no longer goes to waste. After the 2001 political and institutional crisis in Argentina, unemployment and poverty increased across all cities in Argentina, a situation further aggravated by massive migration from rural to urban areas. The city of Rosario launched the Urban Agriculture Programme (PAU).[30] The programme is carried out in collaboration among the Municipality of Rosario and its Secretary of Social Promotion, the Centre for Studies on Agro-ecological Production (CEPAR) and the National Agricultural Technology Institute (INTA). Its objective is to create productive community-based enterprises that could ensure the food security of the poor and generate income.

The Urban Agriculture Programme provides lands, reusing vacant land deemed unsuitable for construction and making available vacant municipal lands for longer-term use to organized groups of urban poor, especially women. The programme also provides training and technical support, linking with the INTA through its Pro-Huerta Programme for workshops to help community gardeners develop their skills and to organize farmers' markets for the sale of produce.

Benefits to city dwellers include the revitalization of degraded urban plots and the increase of green areas. Rosario now has four large park-sized gardens and 791 community gardens operated by 2,000 workers, of which 62 percent are female gardeners. The programme also created five

30 UCLG, *Urban Agriculture and Social Inclusion in Rosario, Argentina*, 2008. Available from: *www.uclg-cisdp.org/sites/default/files/Rosario_2010_en_final.pdf*.

markets in different parts of the city where people sell the vegetables and fruit grown on their plots of lands. These initiatives have increased the level of economic activity in the area, adding an additional USD 40 to USD 150 to the monthly incomes of local residents, according to recent surveys.

2.2.2 Public Transportation

Public transportation, in particular urban transit, tends to be a major employer. As of 2009, the public transport sector employed approximately 13 million people worldwide.[31] In many cities, this sector account for 1 to 2 percent of total employment (UNEP, ILO, IOE and ITUC 2008). In Mumbai, more than 160,000 local jobs are related to its public transport sector; New York almost 80,000; Johannesburg over 22,000; and Berlin about 12,000.[32] Many urban cities, however, still rely on highly polluting diesel buses, suggesting there is significant opportunity to shift to compressed natural gas (CNG) buses that offer pollution-reduction benefits and are already fairly used in China, Egypt, India, Iran, Japan and the Republic of South Korea. For example, authorities in New Delhi, India, announced that 6,100 new CNG buses would be introduced between late 2007 and 2009, resulting in the creation of 18,000 new local green jobs.

Typically, men hold the majority of jobs in public transportation sector. However, in recent years, with the promotion of equal opportunities, actions are being taken to better integrate women into the sector in both developed and developing countries.

One example of such projects includes the TransMilenio transit system in Bogotá, Colombia, which is addressing this issue by increasing women's participation to fill public transportation jobs that are traditionally occupied by men while at the same time reducing harmful gas emissions. Women currently account for 24 percent of the total workforce.

COLOMBIA: The TransMilenio bus rapid transit experience in Bogotá

The TransMilenio is a massive bus rapid transit (BRT) system designed to cope with serious problems from uncontrolled urban growth in Bogotá. The introduction and scaling up of the TransMilenio required substantial investments in infrastructure. The national government provided 70 percent of the investment and 30 percent came from the local government. Revenues from oil and related businesses covered 50 percent of the total costs. The operation of the system is provided by public and private participation.

The TransMilenio has reduced traffic volumes, cut traveling time by 32 percent, reduced greenhouse gas emissions by 40 percent and reduced accidents by 90 percent.[33] It has also created

31 UITP, *Observatory of Employment in Public Sector*, 2011.

32 UNEP, *Towards a Green Economy*, 2011.

33 WHO and UNECE, *Green and Healthy Jobs in Transport*, 2011.

jobs. The TransMilenio system has created 95,000 jobs, including almost 40,000 direct and 55,000 indirect jobs. While traditionally the transport sector has employed men, in the TransMilenio system women have been able to significantly increase their workforce participation. Female participation is currently 24 percent of the total system workforce, accounting for 22,800 jobs; some 62 percent are single mothers. In activities such as fare collection and bus washing, the participation of women reaches 70 percent and 43 percent, respectively.

The system has brought urban planning, and a host of environmental, social, cultural, operational and economic benefits to the city and has improved the environmental quality and the quality of life in the city.

The potential of public transport to provide green, stable jobs that develop professional skills is demonstrated in this example from Colombia. Public transport is a fast-growing sector that plays a dynamic role in the development of the urban economy. Yet measures to lessen the sector's environmental footprint require wide technical changes which in turn require substantial financing. In Bogotá, the cost-sharing mechanism between national and local government, and the cost recovery from businesses, came together to provide a solution.

2.2.3 Renewable Energy

The number of jobs in the renewable energy sector is growing at a very fast pace and is likely to increase in the years ahead as countries transit to green economies. Globally, where data is available, more than 2.3 million people are employed in this sector. Given strong and rapidly increasing interest in energy alternatives, this number is likely to soar globally — possibly as high as 2.1 million people employed in wind energy, 6.3 million in solar photovoltaics (PVs), and 12 million in biofuels related agriculture and industry. This represents a possible total figure of over 20 million jobs in the renewable energy sector by 2030.[34] Perhaps the best-known example of renewable energy jobs and skills training is the Grameen Shakti initiative in Bangladesh.

BANGLADESH: Pioneering and expanding solar home systems: The Grameen Shakti initiative

In Bangladesh, approximately 60 percent of people do not have access to electricity and only an estimated 12 percent of the Bangladeshi population has electricity access over the whole day making it impossible for them to effectively study or work after sunset.[35] Grameen Shakti, founded in 1996 with the support of several local government units, helped to install more than 100,000 solar home systems in rural communities, creating employment opportunities while also empowering local women and youth.

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34 UNEP, *Background Paper on Green Jobs*, 2008. Available from: *labordoc.ilo.org/record/408928*.

35 World Bank, "Renewable Energy Lights up the Countryside by IDA", WB, October 2009. *www.tinyurl.com/cjupkgl*.

Grameen Shakti has always emphasized community participation and motivation as the basis of all its activities. It has employed local youth as technicians, and trained users on home-based trouble-shooting. Ensuring the participation and training of women has been a particular focus. To date, Shakti has trained over 5,000 women as solar PV technicians and maintenance workers. More than 650 women are operating as technicians at the field level.[36] Many more jobs are created indirectly as solar systems enable local entrepreneurs to start up new businesses such as community TV shops, solar-charged mobile phone centres and electronic repair shops. Grameen Shakti, with continued support from the Government of Bangladesh, is aiming to create 100,000 jobs in renewable energy and related businesses in the coming few years.[37] Currently, Grameen Shakti is considered one of the largest and fastest-growing rural-based renewable energy companies in the world.

2.2.4 Waste Management and Recycling

Waste management and recycling make a significant contribution to reducing energy usage and pollution and provides more jobs than landfilling or burning waste. In the United States, for example, USD 236 billion is generated annually from recycling, which offers employment to more than 1.1 million people. In Brazil, more than 2,400 companies and cooperatives are involved in recycling and scrap trading that employs more than 500,000. Recycling activities linked to reprocessing and remanufacturing activities tend to be run by municipal governments, the private sector and local cooperatives. These jobs tend to be diverse, require different job skills and are often labour intensive; but they will be an important source of green jobs in urban areas.

In Zimbabwe, the city of Mutare introduced a paper recycling initiative that created employment opportunities for women and youth while addressing its environmental degradation challenges.

ZIMBABWE: Mutare Paper Recycling and Composting Project in the city of Mutare

Within a context of high unemployment, poverty and hyperinflation, the fourth largest city in Zimbabwe, Mutare, sought to promote sustainable development. Rapid urbanization had led both to environmental degradation and to rising inequality and unemployment. In one of the poorest suburbs of the city, Sakubva, an overused municipal waste dumpsite and the rapid growth of illegal housing in the area had created severe health and environmental problems.

In 1996, Mutare City Council engaged community partners including industries, youth groups and local residents to pilot a programme to increase the life span of the local dumpsite and improve the livelihoods of local residents. As part of the Local Agenda 21 initiatives, the city

36 UNESCAP, Grameen Shakti: Pioneering and Expanding Green Energy Revolution to Rural Bangladesh, 2007. Available from *www.tinyurl.com/d63jpyc*.

37 *www.gshakti.org*.

received funds from the Incentive Grants Project to implement concrete projects to divert waste. A waste paper recycling project was started with the aim to provide employment for women and youth.

The organic waste was composted to be used by local households already involved in subsistence farming. Paper waste was collected and sold to local board and paper mills. These mills use paper, alongside wood, as an input for the production of soft-boards. Until then, this paper was imported from elsewhere. This practice created jobs for the local population alongside benefits for local firms and the environment.

By working with community partners, the city of Mutare reduced waste going to their dumpsite through composting at both the municipal and household levels, and through recycling initiatives on the part of the local authority, private sector and community. As well, the community was mobilized to ensure support and participation in waste reduction and recycling. Combining the information about the nature of the waste problem with the activities within the local economy, Mutare created employment opportunities for both women and youth, while addressing environmental challenges.

The most significant benefit of these projects has been the bringing together of different stakeholders, including youth and women, low-income communities, businesses and city council officials, to open communication channels and initiate a dialogue on how integrated urban environmental management can be achieved in Mutare.[38] This is a good example of how social dialogue and sharing of information can create projects that have both economic and social benefits.

This example from Zimbabwe demonstrates that urban environmental management works best when it addresses the root causes of environmental degradation; that is, poverty alleviation must be the starting point. Its success also yields many lessons learned. Certainly, this type of recycling should be done in a way that does not create other risks such as sanitation and hygiene challenges. Environmental efforts are more likely to be viewed as legitimate when they address poverty and basic human needs. Youth groups and women are an important part of the local community structure, possessing the energy and willingness to try out new concepts, especially where there is a potential for self-improvement and sound financial growth.

A solid waste management in Lesotho provides another example of a project that created green jobs and empowered women and youth.

38 ICLEI, *Mutare: Paper Recycling and Composting Project*, 2000. Available from: *www.tinyurl.com/dywf7lm.*

LESOTHO: Maseru City Council Public-Private Partnership Project for solid waste management

The Maseru City Council has successfully used the public-private partnership approach to improve urban service delivery and meet local development goals such as creating jobs for women and youth, improving living conditions, improving environmental management and public health, and fostering gender equality and empowerment. Between 2006 and 2007, six contractors in the city of Masuru, Lesotho, formed the Waste Management Consortium (WMC), which was paramount in improving service delivery in Maseru. The consortium expedited the implementation of refuse collection, disposal service and investment in equipment.

Public services in unplanned settlements in Maseru had been under severe pressure, with limited access to waste management services, safe drinking water and proper sanitation for low-income households. In 2006, the Maseru City Council extended waste management service and addressed waste reduction and waste recycling. The pro-poor framework featured a public-private partnership with the support of UNDP Public-Private Partnerships for Service Delivery (PPPSD) and UN-HABITAT and the national government of Lesotho.

As a result of the service delivery project, the coverage of waste management service increased from 30 percent to 70 percent. The project has directly contributed to reducing extreme poverty, empowering women and youth and ensuring environmental sustainability. Income for small local business and revenue for the city have also increased. The project created approximately 104 direct jobs for the poor, mostly filled by women and youth. The project also contributed to the capacity building of its direct beneficiaries.

2.2.5 Green Construction

Job opportunities in green construction can be found in new construction, renovation of existing buildings, the promotion of cleaner cook stoves, use of solar panels and other PV technologies. Three quarters of the 111 million people worldwide who earn their living from construction live in developing countries. The construction sector provides employment opportunities to 7 percent of the world's formal workforce and contributes to 5 to 15 percent to the national gross domestic product (GDP). For the informal economy, this figure is expected to be much higher. And, given at least 1.2 billion residential buildings in the developing world, the need for building refurbishment suggests major employment opportunities for decades to come. There is vast scope for greener building practices. Studies suggest that construction is responsible for 25 to 40 percent of global energy use and produces 30 to 40 percent of the global greenhouse gas emissions. Buildings produce 33 percent of the global carbon dioxide (CO_2) emissions alone.[39]

39 ILO, "Promoting a Recovery Focused on Jobs", No. 70, December 2010. Available from: *www.tinyurl.com/ilo-no70*.

Job opportunities in green construction also can be found in clean energy. Promoting the use of liquefied petroleum gas (LPG) stoves and hot plates for cooking can create job opportunities in sales, transport and maintenance of the stoves, capsules and the development of hot plates. Approximately 2.5 billion people in developing countries rely on charcoal, wood, agricultural waste and animal dung for cooking fuel — a number that is expected to increase to 2.6 billion by 2015 and 2.7 billion by 2030. This means that by 2030, 0.61 billion households will require these cleaner-burning and more energy efficient technologies in their homes. Demand for LPG stoves and hotplates can create additional jobs for women, and reduce the amount of time women spend on collecting more traditional sources of fuel for cooking, and provide health benefits.

Likewise, promoting PV technologies will create jobs from the use of PV systems for direct lighting (6.33 million jobs by 2030 in installation and servicing) and water pumping for local residents. Local jobs also can be created if local governments invest in meeting or reducing space and water heating requirements by installing appropriate sustainable technologies, such as efficient heat pump systems, into residential buildings. A South African study undertaken in 2003 found that over 355,000 new jobs can be created if local governments implement more ambitious policies for domestic solar penetration. Investments in the improvement of air conditioning and lighting systems and implementation of insulation technologies will also create an unprecedented number of jobs, especially in such countries as India and China.[40]

Opportunities abound for countries, especially developing countries, to take practical steps to ensure that new buildings are built to high environmental standards and, given that most of the world's building already have been built, appropriate retrofitting and refurbishment of those buildings is even more important.

The construction sector tends to attract new entrants to the labour market and low-skilled labourers, and this provides local governments with the opportunity to offer specialized training on green construction for youth and women, who tend to have limited work opportunities in this sector.

THE PHILIPPINES: Environmentally sustainable construction in the social housing sector in Rizal

In the Philippines, which is vulnerable to natural disasters and effects of climate change, sustainable construction that creates green jobs is a timely target. The local government of Rizal integrated a green/greener job employment model for environmental sustainable construction in collaboration with the National Housing Authority, the ILO and the private sector. The project focuses on the social housing sector in order to address environmental challenges, poverty and to promote green jobs for low-income communities especially youth. Training is equipping Rizal youth with the skills necessary to produce and install environmentally-friendly construction

40 ILO, Green Jobs Creation through Sustainable Refurbishment in the Developing Countries, 2010.

materials, improve their employment prospects. In the process, the project is creating healthier, more climate-secure communities.

The employment model in sustainable construction is establishing a strategy for the creation of green jobs. It does so by supporting innovative partnerships and developing curricula for skills, entrepreneurship and financial training to promote green jobs for low-income communities, with a particular focus on youth. This strategy is based on the construction of new-building projects, involving a multi-tiered approach, with partners drawn from both the public and private sectors.

3 RECOMMENDATIONS FOR LOCAL GOVERNMENTS AND THEIR ROLE IN PROMOTING GREEN JOBS

For many local governments, climate change is a novel and at times a confounding issue. The topic may seem abstract when much of the policy debate concerning climate change takes place at the global level. Furthermore, the creation of low-carbon economies and green jobs relates to many factors that fall outside of the direct control of local governments, including everything from national climate and energy policy to international market forces, involving multiple players and especially the private sector. In practice, however, local governments are likely to have some comparative advantages. They are the closest to local businesses, job seekers, and the vulnerable and disadvantaged communities in the local labour market. They are well-positioned to focus on women and youth.

Local governments can do many things. They can support and reward sustainable economic activity. They can develop adequate responses to business practices that continue to pose a serious threat to a sustainable future. They can take steps to foster changes in the pattern of local private investment, as well as environmentally friendly or 'green' practices, through appropriate regulations, policies, public investments and partnerships. Furthermore, they can implement policies that help to create jobs and improve the employability of workers, such as those related to skills development. They can identify practices of good governance. As the level of governance closest to the people, they also play a vital role in educating, mobilizing and responding to the public to promote sustainable development. Learning from examples including the ones introduced in the above section, local governments can promote green jobs for women and youth through taking specific actions.

3.1 Setting green jobs indicators

What is a green job? Local governments will need to understand what a green job is before they can design and implement policies and programmes aimed at supporting their growth. For example, OECD developed a set of indicators (see Box 1) that include a set of criteria and indicators with reference to the industry, the production method, value-chain position, the occupational profile, and the quality of green workload. Localities can customize this list based on their environmental local conditions to identify green jobs. Moreover, since environmental degradation tends to be localized, local governments need to develop a set of green job indicators by collecting data based on robust and workable measures. This data can feed into policy development for assessing the creation, substitution, suppression and transformation

Box 1. Green jobs indicators

Industry	
Sector	The sector or industry refers to the fields of economic activity into which firms can be categorized. The sectors most often referred to as 'green sectors' or the EGS sector include renewable energy, building, transportation, recycling, food and agriculture, forestry and tourism. These sectors are usually the focal points of studies on green jobs not only because of the nature of the goods and services they are producing, but also because they tend to be labour intensive.
Product/ service	This refers to the specific output of the businesses in the different industries or sectors. There are specific products and services that can be considered 'green' due to the eco-innovative processes involved in their production. For instance, products/services aimed at reducing or limiting the negative impact of human activity on the environment (e.g. energy-efficient home appliances) or at improving the environment directly (e.g. waste recycling services). Look for changes in human consumption habits as awareness for green products and services increase.
Organization	
Production method	The production method refers to the environmental quality standards used by firms in their production process. Firms can set in place measures to reduce energy consumption and waste production and build environmentally-friendly infrastructure for their production processes. This criterion allows for the classification of jobs in a firm that does not belong to a green sector but uses energy-efficient techniques considered to be green.
Green Awareness	Organizations have different levels of commitment to green and environmental issues (Connection Research, 2009, p. 17). In some cases, the heads of firms are individuals that are deeply committed to the environmental cause and engage in associations, partnerships or community movements to protect the environment. Green awareness is often reflected in the levels of corporate social responsibility of the organization. This is often dependant on the history and structure of the organization (Potts, 2009).
Position on the value chain	The implication of a job in the green economy might vary along the value chain of the good or service being produced. A job in a company producing energy-efficient automobiles might be considered to be green, but would a job in the company producing the steering wheel for that specific car?

Source: *Green jobs and skills: the local labour market implications of addressing climate change, OECD (2010).*

Job	
Occupational profile	This refers to the nature or purpose of the job, irrespective of the sector it is performed in. Almost any occupation can be considered green as long as it contributes to reducing harmful impacts of human activity on the environment, either directly or indirectly.
Required skills and abilities	Certain jobs require workers to possess certain specialized green skills and abilities. Determining whether a job can be considered as being green can in some cases be done based on the necessary skills and competences required to perform it.
Job decency	UNEP and the ILO emphasize the condition that 'green jobs' need to be decent jobs, i.e. good jobs that offer adequate wages, safe working conditions, job security, reasonable career prospects, and worker rights (UNEP 2006, p. 4). The Apollo Alliance has taken up this dimension in its definition of green jobs stating that "if a job improves the environment; but doesn't provide a family-supporting wage or a career ladder to move low-income workers into higher-skilled occupations, it is not a green-collar job". Job decency is thus a key dimension of green jobs.
Green workload	Some workers may do some of their work in green areas and some of their work in traditional areas (Connection Research, 2009, p. 17). In this case, it is important to adequately measure the part of the workload that is officially dedicated to green tasks in order to determine if the job can be considered as green.

Source: *Green jobs and skills: the local labour market implications of addressing climate change, OECD (2010).*

of jobs. This is important in order to estimate impacts of green jobs on direct and indirect employment and the need for new skills.[41]

3.2 Developing training and skills development programmes

Creating green job indicators provides a framework for progress. It also is crucial for local governments to develop and provide training and skills development programmes as they shift toward low-carbon economies. Neglecting to do so can create significant skills gaps in the local market. UNEP asserts the importance of skills, explaining that a shortage of skilled labour could put the brakes on green expansion: "It is important both to prepare the workforce at large for the skills requirements inherent in green jobs and to ensure that green industries and workplaces do not face a shortage of adequately skilled workers."[42] Specific skills will be needed for the

41 OECD, *Green Jobs and Skills: The Local Labour Market Implications of addressing Climate Change*, 2010.

42 UNEP, *Background Paper on Green Jobs*, 2008.

development of sustainable low-carbon economies such as knowledge of sustainable materials, carbon-foot-printing and environmental impact assessment. Beyond the existence of a qualified workforce in possession of traditional skills, new skills will have to be assimilated into training and education programmes that specifically target youth and women. It should be kept in mind that each local government will have to customize its training and skills programmes in accordance with their local environmental conditions.

With climate change anticipated to bring about major changes in the labour market and with a large number of youth entering the labour market in the years to come, local governments must strive to ensure that young people within their localities are prepared to take advantage of new environment- oriented employment opportunities. Presently, too few of the new green jobs that are being created are occupied by youth, mainly because most lack the required skills. This is also hindering growth in green sectors. For example, in some countries, green energy operators have stated that one of the main barriers to sustained growth in the coming years will be the inadequate access of new talent and employees who possess the knowledge and skills to perform green jobs. Some progress has been made in equipping young people with the knowledge and technical skills they need to take full advantage of new employment prospects afforded by the shift to a low-carbon economy. However, much remains to be done.

Youth, as new entrants to the labour force, have an advantage over many of their adult counterparts in that they are less likely to experience the negative effects of technological change brought upon by the transition to low-carbon and clean economies through the replacement or creation of green jobs. While older workers may experience job displacement with the introduction of new technologies to address or combat climate change, youth are well-positioned to acquire the necessary skills while they are still enrolled in education or training programmes. In reaction to the increased attention in greening the labour force, universities and other postsecondary institutions have set up specialized programmes. Over the past several years, the number of university courses and degrees focusing on environmental issues such as renewable energy and sustainable practices has increased drastically.

Post-secondary education can equip students with the skills for a professional career in the environment sector, yet many green jobs do not require a tertiary degree. Encouraging youth to take up technology-related courses in secondary school is an essential step. Vocational training focused towards new technologies is required, whether courses at secondary schools and workforce development centres or longer, more specialized post-secondary programmes that prepare candidates for positions requiring particular skills.[43]

Recent experience in green job training in several countries has produced valuable lessons: 1) certification programmes must be established in order to guarantee the maintenance of high standards and job transferability; 2) local governments, industry leaders and the private sector

43 UN, *Youth and Climate change*, 2010. Available from: *www.tinyurl.com/2dd5cty*.

play a central role in this regard; 3) vocational training institutes must work closely with local employers and industry associations to identify and meet emerging labour demand; and 4) local government needs to raise awareness among employers about climate change and its challenges and the future potential of green jobs.

Entrepreneurship can also be an important source of job creation and can offer women and youth the chance to effect change. Entrepreneurs, both youth and women, can take advantage of opportunities to promote environmental sustainability in a number of different sectors including agriculture, renewable energy and recycling. However, their lack of experience and inadequate resources and networks place them at a disadvantage. Starting a new business has uncertainty and risk, and prospective entrepreneurs must be well equipped and prepared. In order to ensure the sustainability of green youth projects, youth and women must be provided with adequate entrepreneurship training, including support in the development of business plans and access to technology and technical know-how. Both youth and women entrepreneurs must also have access to seed grants and manageable financing options to help them start their own businesses. For example, the city of Rosario in Argentina, created green jobs through a programme that provided land plots for women, trained them to develop their farming and sales skills, and helped them organize farmer's markets in order to generate income while preserving the environment.

Labour market policies must also include targeted skills development and adaptation for the female and young labour force; this is a necessary and strategic condition for a smooth and feasible transition to a green economy. It helps to ensure equity and access for women and youth and prevents a mismatch between existing skills and opportunities. Skills development not only prepares the workforce but is a necessary pre-condition for reaping the economic, carbon-reducing and job opportunity benefits of green investments. New skills can themselves act as drivers of change, such as when increased environmental awareness and attitudes of consumers lead to subsequent behavioural change.[44]

Ultimately, training and skills development programmes must empower women to not only seize economic opportunities but also to take on leadership roles and create opportunities. For example, the Fishery Integrated Resource Management for Economic Development (FIRMED) programme in the Philippines raised awareness on gender issues and provided management and leadership training, empowering women to participate in decision-making processes at the household level as well as at project sites. It also ensured that for each fisher-folk organization that was formed, a corresponding gender and health committee was created. As a result, women now make up more than 50 percent of fisher folk organization leaders.

The growth of green jobs is coming up against an unfortunate reality. In most developing countries and in many sectors, skills shortages slow down the shift to greener economies because the required technology cannot achieve the expected returns or cannot be used at

44 CEDEFOP and ILO, *Skills for Green Jobs: European Synthesis Report*, 2010.

all. The skills required for green jobs are in perpetually low supply, as too few young people choose to study these subjects. Many developing countries also report shortages of teachers and trainers in subjects related to environmental awareness and in fast-growing green sectors such as renewable energy and energy efficiency.[45] Local governments must therefore promote investments in green education and vocational training for green jobs, particularly for women and youth. South Africa's Working for Water programme, for example, not only provided tailored training for women but also prioritized the selection of female and young workers to fill newly created positions. The transition to a low-carbon economy often requires multiple skills as tasks and industries converge. Efforts must be made to ensure the quality and relevance of these programmes, as well as to provide incentives for teachers and trainers in this area.

3.3 Getting it right: Social protection, labour market policies and green economic opportunities

Local government can identify and implement policies to protect those who are negatively affected. Yet a good labour market policy is only part of the solution. Another requirement is to institutionalize the mechanisms of social dialogue, e.g. participatory local planning, the design and implementation of local resource-based approaches, and multi-stakeholder consultations. Local governments will also want to invest in building strong institutions that serve a number of social dialogue purposes:

- incorporate the needs of local communities into the implementation of appropriate labour market policies;
- inform and shape appropriate education and skills development policies;
- ensure that social dialogue informs and shapes pro-active policies and programmes for retraining women and youth for new green economic opportunities;
- promote stakeholder consultations to identify skills needs and therefore ensure that training policies respond to changes in the labour market.

In Zimbabwe, for example, the city of Mutare reduced the amount of waste going to dumpsites through composting and recycling initiatives by mobilizing the community in a way that ensured support and participation in waste reduction and recycling. Mutare initiated a series of projects that brought together different stakeholders including women and youth, low-income communities, businesses and the city council, to open communication channels and initiate dialogues on how to achieve urban environmental management. Its emphasis on social dialogue and the sharing of information delivered economic and social benefits.

Environmental public employment programmes also create green jobs. Social protection includes basic social security such as healthcare, income support and relocation assistance. It reduces

45 CEDEFOP and ILO, *Skills for Green Jobs: European Synthesis Report*, 2010.

the vulnerability and risks faced by women and youth due to the transition to green economy. For instance, development of green jobs and social entrepreneurship should be assimilated in existing national or local initiatives. Environmental public employment programmes can provide young people and women with marketable skills and work opportunities while at the same time engaging them in environmental rehabilitation and conservation jobs. Public employment programmes have been used to create jobs for the poor and the unemployed in times of economic down turn and crises. In some cases, these jobs have contributed to environmental sustainability while also providing income for those in need, similar to the Working for Water programme in South Africa.

Another example of a public employment programme is the 'Blosa Verde' (Green Grant) programme in Brazil, which is a sub-programme of the conditional cash transfer programme known as 'Bolsa'. The green grant variation was launched by the Government in 2011 to promote sustainable social development and encourage conservation of Brazil's ecosystems. The programme provides R$ 300 every three months to Brazilian families living in extreme poverty that develop environmental conservation projects and work in them. Qualifying projects include work in national forests, extractive and sustainable development reserves, forest settlements, Areas of Permanent Preservation (APP), and sustainable development and extractive settlement projects. Additional environmental preservation activities covered by Bolsa Verde include sustainable extraction and fishing practices. More than 3,500 families, mostly headed by women, have benefited from this programme to date. Public employment schemes based on this model could be a useful mechanism for involving youth and women in specific industries that might otherwise not seem like an obvious career choice.

Environmental public employment programmes must include components that facilitate the transition of youth and women to more permanent employment, in order to ensure sustained success. One option might be to establish a link between these public employment programmes and existing training programmes. The aim is to provide young people and women with targeted skills and environmental awareness so that they will be able to identify entrepreneurship opportunities in the field of environmental conservation and rehabilitation.

Local governments can also improve the labour conditions of women and young workers by establishing meaningful dialogue with their employers, such as through the municipal 'decent work' programmes of Belo Horizonte in Marikina, Philippines, and Sao Paulo, Brazil. Active support for coalitions of workers can also promote workers' rights. In Brazil, coalitions of urban workers have drawn attention to and reduced informal labour.[46]

46 UNEP, *Towards a Green Economy*, 2011.

3.4 Mobilizing fiscal spaces and financing mechanisms

Local governments tend to be left out of the large-scale external funding for climate change adaptation and mitigation measures in developing countries that is being mobilized through bilateral projects and multilateral initiatives. Projects or initiatives related to climate change are often drawn up by national governments and seldom focus on adaptation and mitigation activities suitable for local governments to engage in. National governments generally maintain project control. Local governments are overlooked in the implementation process, too, which is done through local ministry offices, project implementation units, civil society organizations (CSOs) and private bodies.

If local governments are to play an effective role in the creation of green jobs, they will need access to additional financial resources. One option is lobbying for the national government to provide local governments with earmarked green jobs funding windows. Local governments can use this funding to finance programme or projects that promote green jobs along with training programmes to build the capacity of women and youth as they shift more toward low-carbon economies. This funding can be earmarked to protect livelihoods in localized areas that are especially vulnerable to climate change. Such schemes will need to ensure that they are targeted toward poor local governments instead of those able to finance such programmes on their own.

National governments can disburse funding to local governments by using a performance-based grant system, which provides tangible incentives for local governments to improve their performance. Access to grants and/or the amounts disbursed is linked to their performance in mitigating climate change challenges and in promoting green job creation for women and youth at the local level. By using a performance-based grant system, communities and their local governments can cooperatively determine the sectors in which they choose to promote and create green jobs, keeping in mind the likely climate scenarios and risks.

The performance-based grant system should build on national systems that provide an incentive for local governments and communities to integrate climate change concerns and green job creation into their regular planning cycle. Such grants should be complementary to national-level climate resilience actions. The grants should be disbursed as part of a local government's regular budget envelope and can thus finance the 'adaptation and mitigation' elements of larger projects at the national level, allowing for holistic responses to climate change challenges while addressing employment opportunities for women and youth. After the budget cycle is completed, an assessment should be conducted by the central government to verify that the funds were indeed spent on creating green jobs and programmes for training and capacity building.

Performance-based grants reward local governments which spend the funds on effective adaptation measures by providing them with further funds for the next budget cycle. A system of performance measures allows for the monitoring and tracking of expenditure at the national level. This system also allows the generation of data for policy makers on the cost of green job

creation programmes complemented with training programmes at the local level. It provides an effective channel for global adaptation resources to be spent locally. This method not only holds local government accountable but it also strengthens monitoring and evaluations systems and promotes community participation. This system also acts as an important tool for improved links between central and local governments on the one hand and for closer engagement between local governments and citizens on the other hand.[47]

In many countries, especially where decentralization is still in its infancy, the introduction of performance-based grants may place poorest municipalities at a disadvantage compared to better off ones. This may be due to the conditioning of transfers on tax collection performance or local financial performance. Differentials in capacities among poor and more prosperous local governments/areas should be accounted for. As noted above, poor local governments may be among the neediest in terms of reducing vulnerability to climate change, but also the weakest in terms of capacities for resource mobilization and implementation. Performance-based financing mechanisms for green investment and job creation should facilitate the access of local governments to grants supporting capacity development and facilitate improvement of performance.

Local governments can also establish cost-sharing financing mechanisms with the national government, as well as the private sector, as illustrated above in the case of the TransMilenio initiative in Bogotá, Colombia. Establishing the TransMilenio required substantial investments in infrastructure, and the national government provided up to 70 percent of the investments, while 30 percent came from the local government. Revenues from oil and related businesses covered 50 percent of the total costs, and the system was operated by both public and private partners. To date the TransMilenio system has created jobs and dramatically reduced traveling time, greenhouse gas emissions and accidents. This project was relatively affordable for the local government through mechanisms for cost-sharing and joint operations with the national government and the private sector.

Whatever the specific financing options offered to local governments, green job creation should become part of the regular business of local government. It is not a new functional obligation or a new expenditure assignment. Local governments are already required to provide public goods and services. Facing the challenges posed by climate change often will amount to a re-orientation or re-prioritization of routine local government functions in terms of planning, regulation and revenue management.[48]

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47 UNCDF, Performance-Based Grant Systems, 2010. Available from: *www.uncdf.org/sites/default/files/Download/pgbs.pdf.*

48 UNDP, UNCDF & UNEP, "Local Governance and Climate Change", 2010.

While much of green growth relies on appropriate fiscal policies developed at the national level, local governments can also implement policies that maximize the use of resources to create green jobs for women and youth and take a variety of actions:

- preserve public investments in infrastructure and expenditure in social sectors (e.g. education, health, social welfare);
- provide incentives for small and medium enterprises;
- invest in and procure environmentally-preferable products;
- phase out subsidies for industries that pollute or use natural and financial resources inefficiently;
- invest in energy research and development;
- promote energy alternatives;
- invest in employment-intensive disaster risk reduction and preparedness; and
- revitalize unused municipal land for public services that promote green jobs.

The city of Rosario, Argentina, took action locally by revitalizing unused or vacant municipal land plots to create jobs and income-generating activities for the poor. It turned unused land into four large park-sized gardens and over 791 community gardens operated by 2,000 workers, of which 62 percent are female gardeners.

Local governments can also create demand for green programmes and products by highlighting and supporting best practices and regulating for desired environmental outcomes. Local governments must therefore maximize synergies through integrated planning and regulatory instruments.

3.5 Establishing and harnessing innovative partnerships

Partnerships are crucial for maximizing synergies and ensuring cost-effectiveness, and should be built on reciprocity, trust, and legitimacy fostered by mechanisms and opportunities to facilitate meaningful dialogue (including debates on trade-offs and priorities), as well as by well-structured organizations in civil society, the private sector and the relevant government level. Local governments should establish both formal and informal relationships with national and local institutions, including CSOs and the private sector, and seeking partnerships with institutions that have significantly supported the creation of jobs for women and youth.

There are many examples of innovative partnerships. The internationally-based Cities Alliance, created in 2007, promotes City Development Strategies (CDS) as appropriate tools to address the nexus between sustainable economic growth and ecological preservation and restoration. The strategies are based on the premise that local governments have little power and funding to promote or impose change, and that partnership is the only practical way forward. Another

example, introduced above, comes from Lesotho, where the City of Maseru responded to severe pressure on public services due to urbanization by partnering with the national government, UN-HABITAT and UNDP's Public-Private Partnerships for Service Delivery initiative. The partners established an effective pro-poor framework for municipal service delivery that successfully used the public-private partnership approach to improve service delivery and meet other local development goals including the creation of jobs and improvement of environmental management. A consortium of six contractors also expedited the implementation of a refuse collection, disposal service and investment in equipment. In Rosario, Argentina, the initiative that transformed unused land into parks and community gardens was realized through a partnership involving the Municipality of Rosario and its Secretary of Social Promotion, the Centre for Studies on Agro-ecological Production and the National Agricultural Technology Institute.

BURUNDI: A local pro-poor partnership initiative in Bujumbura

Burundi's recent political crisis exacerbated extreme poverty and led to a lack of socio-economic infrastructure and basic services that left poor women in extremely vulnerable to economic and social shocks. In urban Bujumbura, health and environmental problems resulted from a lack of municipal capacities, which deprived the city of an effective system of solid waste management and sanitation. The Municipality of Bujumbura responded with an innovative initiative offering female victims of war (i.e. widows, wives of ex-combatants, demobilized, displaced and repatriated women) the possibility of becoming service providers in the capital city through a local partnership with the municipality and a non-governmental organization, Women for Development (AJAD).

Women became providers of solid waste service in selected areas of the city, responsible for street sweeping, waste collection and separation. The partnership has helped improve the cleanliness of the city and has contributed to the improvement of living conditions of war widows, vulnerable women and their extended families. The initiative also has contributed towards restoring the women's image and self-worth, giving them the confidence to pursue other self-empowerment activities such as financial literacy and better education and opportunities for their children.

The success of a partnership like this example in Bujumbura lies in the commitment of both local authorities and non-state partners to pursuing a win-win solution to address local service delivery and social challenges. For the City Council, success was in the implementation of pro-poor and inclusive partnership as a mechanism to promote women's empowerment and employment while still serving their citizens. For the NGO partner, AJAD, success was strengthening institutional and technical capacities. The City Council is planning to scale up the small scale initiative and

to include other municipal services.[49] A number of actions for such partnership building are recommended by UNDP:

- Partnerships must be "backed by effective resource allocation and decision-making systems" that demonstrate to everyone in the community that local governments are committed to achieving progress towards a low-carbon economy;
- Local governments should initiate various forms of partnerships with local businesses and community organizations, and set the framework for engagement, act transparently and accept the return on investments for private actors in order to leverage private-sector capital;
- Local governments must establish both horizontal and vertical networks that allow for "cross-municipal cooperation and regional and international participation in various local government policy forums."

3.6 Promoting green technology innovation and transfer

Cooperative technology development and technology-sharing could help accelerate the development, replication and scaling up of best practices to address environmental challenges and create green jobs for women and youth. To avoid or decrease the negative impacts of climate change, it is critical to develop innovative forms of technology and promote the transfer of technology to spread green methods within countries and across regions.

Local and national governments are well situated to promote environmentally-sound technological development and dissemination through leading by example. This is true despite various barriers of many types, including institutional, political, technological, economic, financial, cultural, legal, access to information and participation and consultation. Local governments can identify and respond to local needs. National governments play an important role in coordinating decentralized government units, setting policy, and providing legal and regulatory frameworks to encourage the introduction and development of green technologies and their transfer to other sectors and other localities within and across countries.

A central aspect of green technology development and transfer is building the capacities of local government agencies, the private sector and local communities to absorb, adapt and diffuse green technology and knowledge into their local economy — and ultimately develop new technologies. National government backing is essential to establishing national systems of innovation. This entails mechanisms to disseminate the technology or knowledge such as agricultural extension services for green agricultural technologies and similar mechanisms to transfer and disseminate knowledge about better building practices to construction firms, and

49 UNDP, Partnerships for Local Development: Developing Capacity to Turn Local Service Delivery Challenges into Opportunities, June 2010. Available from: *www.ipc-undp.org/pressroom/files/ipc597.pdf.*

about energy-saving technologies to small and medium-sized manufacturing firms, etc. It also requires growing public, academic and private research and development (R&D) and teams that adapt imported technology and eventually contribute to generate new technology. Such local capacity development is also critical for the development of new products, services and technologies that promote green jobs, benefit society and support economic diversification, all of which will address or combat environmental challenges.

For this to be successful, local governments need to scale up support for education and training, small business development, continual improvement in resource efficiency and access to innovative financing. In addition, they should provide practical tools that support intellectual property rights (IPR) and the know-how to enable the transfer, adaptation and widespread use and dissemination of green technologies that translate into the creation of green jobs at the local level and even regionally. It is critical that local actors have ownership of the innovative process and new technologies, and that local knowledge is part of the transition.

Additionally, it is widely known that the private sector is the innovator and distributor of green technology. It also provides most of the resources through direct investment, commercial lending and equity investment. At times, the transfer of technology is controlled by the private sector, in which patents or IPRs are placed on the new technology or knowledge, thus hampering its transfer to other sectors or regions especially when it comes at a high cost. In this case, local and national governments could create incentives for their companies to transfer green technology and knowledge; purchase the patents and licenses, if IPR laws exist, for their further transfer to other sectors and other localities within the country or even regionally; provide funds for technology transfer; and develop mechanisms for technology access and transfer.[50]

Local governments could also create a network of research centres, collaborating jointly with the private sector, national and local state-owned companies, and even individuals from the local communities. Local governments could look to women and youth who possess knowledge and expertise in creating green technology. They could offer support for cooperation and assistance

Local and national governments can foster an enabling environment for technology and knowledge innovation and transfer, by taking key actions:

- Build local capacities to absorb, adapt, diffuse and develop green technologies
- Scale up education and training, small business development, resource efficiency and access to innovative financing
- Create incentives for private sector companies to support green technology transfer
- Create a joint network of various stakeholders

50 International Energy Agency, UNEP and Climate Technology Initiative, *Technology Without Borders*, 2001.

programmes between government entities and the private sector. Moreover, the national and local governments could promote the design of policies and programmes for the effective transfer of green technologies that are publicly owned or in the public domain. Products that are developed from publicly funded R&D should be placed in the public domain and shared with the different sectors and localities. Those that are partially funded should be in the public domain to the extent to which it is publicly funded.[51] This will prevent barring and monopolization of technologies and benefit more people. The goal is a balance between protecting the technology and allowing sectors to innovate, and not hampering knowledge and green technology transfer and further innovation.

Technology transfer works best when all stakeholders communicate and actively participate in developing, distributing and transferring knowledge and technology. Many stakeholders are engaged in green technology transfer, including local and international private firms, national and local state-owned companies, and individual consumers. Investors, international donors, national and local governments, international institutions and local community groups also play vital roles in green technology transfer. A technology's successful transfer relies not only on the value of the idea or innovation, but also on intertwined socio-economic, technological and political factors.[52]

Local and national governments can foster an enabling environment for successful green technology innovation and transfer by taking key : 1) building local skills through the sharing of information and strengthening of technical capacities; 2) engaging the private sector through a healthy business environment and incentives for developing and transferring green technologies; 3) using development assistance effectively through market stimulation and improved coordination; and 4) developing innovative financing through pooled resources and shared risks.[53] This enables technology to be either developed or adapted based on local environmental conditions and needs. Technology transfer can occur both within the country and across borders, opening the door for South-South knowledge and technology transfer among countries, in order to build more sustainable societies that will benefit a wider spectrum of people.

An example of development cooperation between two cities — Ho Chi Minh City in Vietnam and Bogotá in Colombia — demonstrates the importance of sharing and transferring knowledge and technology between regions.

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51 UN, UNEP and UNCTAD, *The Transition to a Green Economy: Benefits, Challenges and Risks from a Sustainable Development Perspective*, 2012.

52 International Energy Agency, UNEP and Climate Technology Initiative, *Technology Without Borders*, 2001.

53 Ibid, p. 14.

VIETNAM: Improving urban transportation in Ho Chi Minh City

Ho Chi Minh City in Vietnam will double its population to 13.5 million by 2020, and like many Asian cities, its poor transportation infrastructure is causing traffic, pollution and accidents, and is slowing economic growth. City officials have made plans to improve the roads and build a six-line metro network and implement a bus rapid transit (BRT) system, a cost-effective complement to the metro system. However, they did not have the knowledge or expertise required to transform this plan into reality. After learning about Bogota's TransMilenio transportation system Vietnam's government sought the help of the City of Bogotá through an official study tour.

During the tour, Vietnamese city official saw first-hand Bogotá's BRT system, famous for its efficiency, and learned about integrating transport and urban planning, public transport management, and BRT maintenance. They saw how this new system not only decreased harmful emissions but also created green jobs for many men and women. The tour provided an opportunity for senior Vietnamese officials and technical staff involved in urbanization and public transportation to benefit from the exposure to best practices and increase their skills and technical knowledge to plan, implement, and maintain urban transport systems, particularly BRT systems. The Vietnamese visitors learned about new approaches for designing transit systems, planning land use for urban transportation, mitigating environmental and social impacts, and communicating strategies to the public. The exchange also improved consensus between city planners and key ministries in a range of critical areas. The city officials also learned about private sector participation issues, including structuring operational concessions, monitoring quality of service, and developing coalitions and strong political leadership to build BRTs. Their counterparts in Colombia emphasized the importance of distinguishing between the government role (investment in the infrastructure_ and the private role (operating the system based on open contracts) to encourage further private investment and improved passenger services.

After they returned to Vietnam, the officials from Ho Chi Minh City along with participants from the Ministry of Planning and Investment began discussing the development of an urban transit corridor, including BRT lines, and relying on environmentally-friendly practices. The officials also considered how they might use revenues to finance green spaces and cultural heritage preservation areas, and to create green jobs and low-income housing.

Source: *Improving Urban Transportation in Ho Chi Minh City, Vietnam, World Bank, April 2013.*

SCALING-UP LOCAL INITIATIVES

While local governments can play an important role in promoting green jobs for women and youth, it is important for local governments to seek synergies and forge strong linkages with national-level policies and partnerships. Only by doing so can the local initiatives be scaled up and sustained to achieve wider coverage and lasting impact. Examples provided above yield several good practices and scaling-up strategies we can learn from.

As seen in the example from Lesotho,[54] the City Council of Maseru and the national government jointly established a pro-poor framework for effective service delivery. And in Hinatuan, the Phillipines, through influencing meso-level institutions, several national government policies were passed in response to local needs of fishery communities, especially women in these communities. These examples demonstrate that a common policy framework is instrumental in ensuring coordinated efforts at national and local levels.

The introduction and scaling up of the TransMilenio in Bogotá benefited from the cost-sharing financing mechanism between national government and local government engaging private sector, serving as an example of what can be accomplished when financing mechanisms are established jointly by national and local government.

In its effort to promote sustainable housing, the local government of Rizal in the Philippines presents a good example of benefiting from ILO support in collaboration with the National Housing Authority. Local government's collaboration with national governments will leverage more international support. Many international organizations are striving to achieve upstream policy influences in the programme countries that they support, expecting to contribute to sustainable and transformational impact with limited resources. It is important for local governments to partner with national government ministries in seeking support from international organizations.

The internationally-based Cities Alliance is an example of how local governments are forging global alliances, seeking to share their challenges and solutions globally and to influence global changes. In today's world, local economic opportunities are increasingly linked with global economic climate. Local governments should also seek to have a strong voice on global issues, though this is accomplished primarily and traditionally through their national governments

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54 UNEP, *Towards a Green Economy*, 2011.

*VOICES FROM THE YOUTH**

I think one of top priorities is definitely to stop the currently worsening situation in terms of air and water pollution. I hope governments can effectively establish regulations that can put the existing pollution under control and come up with more solutions and jobs that will be beneficial to the environment in the long run. …I also think workers in some energy sectors are working under harsh conditions, like installing wind mills. They should be granted generous salaries maybe subsidized by the government.

Xiang, female, 16 years old, China

I come from Tehran, where considerable amount of car emissions and industrial wastes have been brought forth by industrialization. Iran also keeps energy prices artificially low, and that leads to inefficient and wasteful use of resources. I hope the government can create part-time jobs to have more people involved in reporting on activities that damage the environment. In this way, we can effectively decrease and eventually make pollution in any form disappear.

Pedram, male, 16 years old, Iran

The Basic Environment Law in Japan has been really effective in a way that it provides all people in Japan with environmental boundaries so that people are aware whether or not they are doing any damage to the ecosystem. It clarifies the measures to be taken by the national and local governments, as well as actions to be carried out by citizens, businesses and private organizations. But I think Japan needs a much better environmental law in terms of ocean protection. The surrounding ocean is critical to Japan's future development and it needs to be taken care of. Otherwise Japan would lose one of its most important natural resources…And, car pollution is doing tremendous damages to our environment. Our lives would be greatly improved if electric cars were to be introduced to the consumers. Not only these products will be beneficial to the environment, more jobs will also be created for those who are in desperate need. I suggest that government should financially support electric car companies more than ever.

Millie, female, 17 years old, Japan

* Interview conducted by Tianyou Xu, male, 17 years old, China, in March 2013.

One of the policies that I know of is the Enforcement Decree of the Management of Drinking Water Act. This is the act that really relates to people's everyday life. Its purpose is to strictly supervise those who produce drinking water to the market so that people would have secure access to clean drinking water. …Workers who supervise and measure air pollution always breathe in wasted chemical gases that are poisonous and harmful to their health. I think it's inhumane and unjustified to make them sacrifice their health in exchange for a better environment. I hope the government can provide them effective protections when they're on the job, frequently get them physical checks, and make sure they are in good health.

Hye Rin, female, 16 year old, Republic of Korea

I know when people think of environmental preservation, the first few countries that come up on their minds must be China, India, or some other burgeoning countries. But Morocco, as a relatively smaller country, also has been going through tough times in terms of preserving the environment. Almost 80 percent of Moroccan land could potentially be affected by desertification and turn into wasteland. In order to battle desertification, Morocco adopted its National Program to Combat Desertification in 2001. Large portions of grassland have been eaten out by flocks of sheep and goats and are irreplaceable. The barrens are extremely likely to form sandstorms that can cause destructive damages to the environment. If the government proposes a type of job that specifically supervises and hinders animals from eating the roots of the plants, sandstorms will be less likely to happen and further put our environment in danger.

Leyna, female, 16 years old, Morocco

Workers who clean our streets on a daily basis have the most common jobs that protect and better our environment. While we enjoy their hard work, some of us mistakenly regard them as lower beings and look down upon them. I pledge the government to pass laws and regulations, offer those workers better treatments and benefits, and set up moral standard for all to respect their work.

Duyen, female, 18 years old, Vietnam

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