

Facilitating green skills and jobs in developing countries



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Countries Developing countries

Key-words Employment, Skills,
Climate change, Green growth

ABSTRACT

Green growth and green economy policies in developing countries have proven to have positive impacts on the countries' labour markets and economic development, providing opportunities for green job creation, skills development and other social benefits, such as decent jobs. Given that green jobs and skills are emerging concepts, this study aims to provide a knowledge base regarding their role in the transition to a sustainable economy in the developing country context. In order to do this, the study selected and analysed 10 technical and financial organisations active in the field of green economy/ growth and green jobs/ skills at strategic and operational level and carried out 5 case studies on initiatives that aim to promote green jobs and skills in different regions and sectors. Based on this analysis, the study provides recommendations for better integration of green jobs and skills into policies and programmes.

ACKNOWLEDGEMENTS

We would like to thank Thomas GAUDIN (ADEME) and Florian MUGNIER (AFD) for valuable comments all along the process of this study.

ORIGINAL LANGUAGE

English

ISSN

Pending

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4th quarter 2015

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Glossary

Bottom-up green jobs approach	The main aim is to create green jobs and/or develop green skills in a particular sector and/or in partnership with local stakeholders, and in line with local initiatives and activities. Hence, the aim is to start at the local level rather than at national (top-down).
Decent work	Term that sums up the aspirations of people in their working lives – their aspirations for opportunity and income; rights, voice and recognition; family stability and personal development; and fairness and gender equality. Ultimately these various dimensions of decent work underpin peace in communities and society. Decent work is captured in four strategic objectives: fundamental principles and rights at work and international labour standards; employment and income opportunities; social protection and social security; and social dialogue and tripartism.
Direct employment effects	Creation (or loss) of jobs directly through increased (or reduced) demand and output, which in the context of green jobs is stimulated by green-related expenditures.
International financial institutions and development banks	Financial institutions established by more than one country conducting development-oriented finance and professional services on a bilateral or multilateral basis.
Generic skills	A skill that can be applied across a variety of subject domains.
Green economy	An economy that focuses primarily on the intersection between environment and economy. Green economy results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities. In its simplest expression, a green economy is low carbon, resource efficient, and socially inclusive.
Green growth	Green growth means fostering economic growth and development, while ensuring that natural assets continue to provide the resources and environmental services on which our well-being relies.
Green jobs	Jobs that minimize the environmental impact of enterprises and economic sectors to sustainable levels

Green skills	Skills needed in the transition to a green economy including those needed to adapt services, products and processes to climate change and the associated environmental requirements and regulations
Indirect green jobs approach	These are strategies/ projects that support green jobs and skills indirectly. This means that, in its conception, the project did not consider green jobs and skills explicitly as a component or driver.
Indirect employment effects	Creation or loss of jobs in supplier industries and through the value chain.
Mainstreaming	Projects that mainstream green jobs and skills are those that focus on employment and education but include an environmental component or vice versa. These are projects that support green jobs and skills directly and are linked to green growth/ green economy strategies and initiatives.
Specific skills	A skill that is specific to a particular job, in contrast to generic or transferable skills.
Sustainable development	Development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs.
Top-down green jobs approach	These projects focus on supporting the development of national or regional strategies for the promotion of green skills and jobs. Top down projects would include, for example, the development of studies assessing green jobs potential in different sectors and support to implement national policies/strategies for green jobs and skills.
Transferable skills	Skills which can be introduced in a different socio-cultural or technical environment, or which can be used in other occupations.
Technical and vocational education and training (TVET)	Initial and continuing education and training provided by schools, training providers or enterprises that impart the skills, knowledge and attitudes required for employment in a particular occupation, or group of related occupations, in any field of economic activity.

Abbreviations Table

ACP	Africa, Caribbean, Pacific
ADB	Asian Development Bank
AFD	French Development Agency
AfDB	African Development Bank
BMZ	German Federal Ministry for Economic Cooperation and Development
BLS	US Bureau of Labour Statistics
CEDEFOP	European Centre for the Development of Vocational Training
CGE	Computable General Equilibrium
COP	Conference of the Parties
DFID	UK's Department for International Development
DIREKT	Developing Island Renewable Energy Knowledge and Transfer Network
EPI	Environmental Performance Index
ESI	Employment and social inclusion
EU	European Union
GDP	Gross Domestic Product
GEF	Global Environment Facility
GEI	Green Economy Initiative
GGGI	Global Green Growth Institute
GGND	Global Green New Deal
GHG	Greenhouse gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
HCD	Human Capacity Development
IDB	Inter-American Development Bank
ILO	International Labour Organisation
I-O	Input Output
IOE	International Organization of Employers
IPCC	International Panel on Climate Change
ITUC	International Trade Union Confederation
MDG	Millennium Development Goals
LAC	Latin America and the Caribbean
LEED	Local Economic and Employment Development
MOHRSS	Ministry of Human Resources and Social Security
OECD	Organisation for Economic Co-operation and Development
OIE	International Organisation of Employers
PDCA	Plan Do Check Act
PRC	People's Republic of China
R&D	Research and development
SAMs	Social accounting matrices
SME	Small and medium enterprises
TA	Technical assistance
TVET	Technical Vocational Education and Training
UK	United Kingdom
UNEP	United Nations Environment Programme
UNDP	United Nations Development Programme
UNSCD	United Nations Conference on Sustainable Development
USAID	United States Agency for International Development
VET	Vocational Education and Training
WB	World Bank

Executive Summary

I. Introduction

Green jobs and green skills have gained considerable attention through the **Green Jobs Initiative**, established in 2007 between UNEP, ILO, IOE and ITUC. The discourse on green jobs became a natural follow-up on the debate on green economy and green growth as employment and skills created by the transition to a greener economy showed its great potential. A number of international institutions and development banks have endorsed these concepts through explicit strategies on green growth or green economy as well as by dedicated programmes. This is of particular relevance for developing countries, which are affected by climate change and which are vulnerable to the effects of environmental degradation. Green growth and green economy policies in developing countries have proven to have positive impacts on the countries' labour markets and economic development, providing opportunities for job creation, skills development and other social benefits, such as decent jobs. For example, green investments in emerging economies such as Brazil, China, Mauritius and South Africa, were found to accelerate economic growth and employment creation.¹ This is why understanding and supporting green jobs and skills in developing countries is highly important. Even though many governments acknowledge the need to make a transition to a greener economy, green jobs and green skills projects and programmes are often not a priority on the political agenda.

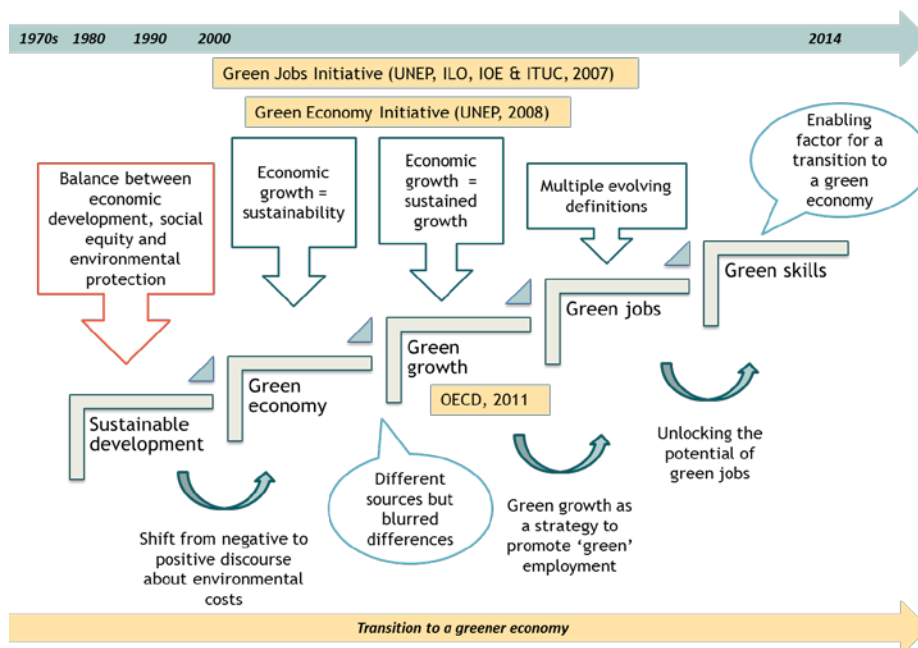
The aim of this study is to provide a knowledge base regarding the role of green jobs and skills in the transition to a sustainable economy in the developing country context. Recommendations for their better integration into policies and programmes are also suggested.

II. What Do all these Green Concepts Mean?

The following figure illustrates the evolution of the key green concepts analysed in this report.

¹ ILO (2013) Sustainable development, decent work and green jobs

Figure 1 – Evolution of the key concepts analysed in the report



Source: own analysis based on literature review

The key idea behind **sustainable development** was to achieve three goals: economic development, environmental protection and social equity. However, it became clear that the commitment to sustainable development had not been sufficient to reach these goals. At the same time, it spurred a lot of discussion on environmental costs. The development of concepts of **green growth and green economy** led to a shift from the negative and politically unattractive discourse of costs and limits to growth, to one of sustainable growth (economic growth being decoupled from environmental impacts) and environmental benefits.

In parallel to the development of the green economy and green growth concepts, '**green**' employment has been seen as a positive impact of green economy and green growth programmes. Similar to other green concepts, **green jobs have multiple definitions** and their interpretation is time and context variant. Being closely linked to the green economy and green growth sectors, green jobs evolved from including merely jobs in environmental services and low-carbon industries, to those protecting nature and environment, reducing consumption of materials and making countries climate resilient. Most of these definitions, in particular from a key organisation, ILO, advocate for green jobs that are decent and socially inclusive.

III. Measuring the Impacts of “Green Economy” and Green Jobs

There have been several tools developed to measure the impacts of green economy and green jobs. Global indices currently measure the environmental performance of countries; however, at the moment, there is no systematic and comprehensive assessment on green growth and green jobs. While existing literature identifies the impacts of a green economy on the labour market, also empirically through case studies, these impacts are unevenly spread across countries, regions and types of workers. The most affected economic sectors are built environment, waste and recycling, water management, agriculture, transport and tourism where green jobs are significantly being created but also disaster risk management and insurance and financial services sectors.

The difficulty in measuring green jobs spurs from their unified definition. One of the most comprehensive approaches has been to measure green jobs in businesses that produce ‘green’ products and services, and those in which worker’s duties include environmentally friendly processes. This shows that **the crucial aspect of measuring green jobs** in any country is to first **adopt a clear definition of what one wants to measure**. Once this definition is adopted there are several methodological tools how to collect data on the number of jobs or make estimates, such as inventories and surveys, employment factors or computable general equilibrium models. The choice of a tool will depend on available data and objectives of what one wants to achieve. For example, in order to use economic modelling, existence of a good dataset is a must.

IV. Knowledge gaps

The study identified several knowledge gaps in the field of green jobs and skills. First, it should be noted that these concepts are still **emerging concepts**. It will still take some time before they are better implemented in practice. There is also a **risk that these concepts are popular but hollow and not implemented in practice**. Further a comprehensive picture on the impacts (mainly benefits) of green economy and growth and resulting labour impacts is lacking. It is still currently unclear what the impacts are compared to business-as-usual scenario. Next, green jobs and skills are difficult to measure, mainly due to the ongoing process of transformation and difficulty to separate green

jobs from non-green jobs statistically. Skills are even more problematic as many skills are transversal, hence applied across a number of sectors and disciplines. In particular, developing countries have even more difficulty developing and applying green jobs and skills in practice, since they often lack sufficiently educated labour force to address the skills needs for a transition to a green economy. What is also missing is an effective policy framework with targets and indicators that would speed up a transition to a green economy.

V. How are Green Jobs and Skills Implemented in Practice?

This study selected and analysed 10 technical and financial organisations active in the field of green economy/ growth and green jobs/ skills at strategic and operational level. The summary overview of the analysis can be found in the figure below.

Figure 2 – Position of strategic international partners



Source: own analysis based on literature review

The findings show that from the six development banks analysed, all except of GIZ, have **at the forefront social aspects such as poverty reduction** as their main mission, **integrating green (and inclusive) growth into their strategies and programmes** (not green economy) explicitly or indirectly, while treating

environment and employment & education themes as separate topics at the strategic level. Nevertheless, at the operational level, mainstreaming of environmental concerns into employment & education projects - and vice versa – happens regularly to some extent, without any specific high-level green jobs and skills strategy or specialised fund. Research on these topics is still being done by these institutions. This shows few or even none specific green jobs and skills initiatives are being set up by the development banks, and green jobs are promoted implicitly through green growth strategies and programmes. GIZ on the other hand, has **capacity development** as its core business across a variety of sectors, including climate change and energy, and as such indirectly promotes green jobs and skills through its vocational and training programmes in such sectors. From the four technical partners reviewed, **ILO** (and UNEP) is a **clear champion** in the field of green jobs and skills, considering green jobs directly at strategic as well as operational levels. This is not a surprise given its constituency in promoting labour markets across the world. The EU is also a key player in the field of green economy, green growth and green employment at EU level but it also applies its strategies and values to its development work and funding programmes. Similarly, also the OECD is working with green growth and skills strategies. This implies that while financial institutions and development banks are only publishing research on green jobs and skills, some other technical partners are already investing heavily in green jobs and skills promotion.

To support the review, five case studies were selected and assessed that aim to promote green jobs and skills in different regions and sectors implemented by some of these partners. Based on these projects, the following typology has been established to classify the development projects dealing with green jobs and skills:

- **Top-down green jobs/skills projects** focus on supporting the development of national or regional strategies for the promotion of green skills and jobs.
- **Bottom-up green jobs/skills projects** aim is to create green jobs and/or develop green skills in a particular sector and/or in partnership with local stakeholders, and in line with local initiatives and activities.
- **Projects mainstreaming green jobs and skills** focus on employment and education but include an environmental component or vice versa

and support green jobs/ skills directly and/or are linked to green growth/ economy initiatives.

- **Indirect approach** – These are projects that support green jobs and skills indirectly. This means that, in its conception, the project did not consider green jobs and skills explicitly as a component or driver.

An important finding from the analysis was that the **local context can largely influence the results and impacts**. While most of the countries assessed have medium-term development strategies, only Jordan and South Africa have dedicated strategies for green economy and green growth. The availability of such strategies and plans can validate and support development projects – or as in the case of China - the lack of such plans and strategies can motivate the implementation of such a project. Overall, **alignment with national priorities and initiatives is a key success factor** when promoting green jobs and skills.

The impact of the different initiatives is of course linked to the objectives and the approach taken. As such, not all initiatives will lead directly to an increase in green jobs and skills. This is partially due to the fact that green jobs is an emerging topic in the political agendas of developing worlds and as such **there is still a long way to go before these results can be measured**. Some of the assessed projects, however, developed a baseline analysis or created a knowledge base that will serve to measure results in the future.

VI. What Can Be Done to Promote Green Jobs and Skills?

In order to promote green jobs from an **international organisation perspective** it is important to **frame green jobs and skills within the overall mission and priorities of the institution**. Such institutions must be transparent regarding the measures and instruments offered (i.e. loans, TA, grants) and how they can be used to support green jobs. Further, these institutions can provide guidance on how to assess the size and scope of green jobs in an economy/ sector, suggest enabling factors for green jobs and skills and support knowledge sharing (i.e. online platforms to share best practices and success factors).

From a **national perspective**, literature shows that **developing countries are lagging behind regarding green jobs**. While countries have set environmental and social objectives, not all include green growth/ green economy in their long-term visions. Fewer make explicit the need for green skills development and

green employment support. In order to incorporate green jobs in the national agendas, countries should: include green growth in the country vision, develop scoping studies to understand which sectors will be most affected and will need the most support, align current policies with the findings, develop/ implement green jobs initiatives taking into account the country context, and set up a monitoring plan that includes green jobs (See Figure below). Financial institutions and development banks can support national governments through e.g. scoping study, national green job strategy support, etc. Involvement of local stakeholders and alignment with other national priorities is key.

Figure 3 – Setting a national agenda for green jobs and skills



From an **operational perspective**, projects can take different approaches such as top-down, bottom-up, mainstreaming and indirect towards supporting green jobs and skills. This includes green jobs strategies, local initiatives, mainstreaming green issues into employment and education projects and vice versa, and other projects. Green jobs and skills projects include the involvement of the financial institutions or development bank, dealing with the project identification and formulation as well as the monitoring, and the implementing agency, dealing with the planning and implementation. Because no two projects are exactly alike, each project should work through the different stages in a way that suits its specific circumstances while ensuring that the process is collaborative and consultative.

Introduction

The aim of this report is to provide knowledge base regarding the role of green jobs and skills in the transition to a sustainable economy in the developing country context. This introductory section briefly discusses the background context for the study, as well as its purpose and the methodological approach. It also provides a reading guide for the report.

I. Context

Sustainable development, green economy and green growth have been on the agenda of international institutions and development banks already for many years, gaining momentum in late 2000s. Developing countries are not only the most vulnerable to climate change but the effects of environmental degradation are particularly important for them, and can undermine their development. On the other hand, even though their greenhouse gas emissions are a small share, they are expected to increase along with their resource consumption and (conventional) economic growth. The concept of green growth aims to address this development challenges “without compromising future growth and poverty reduction goals”.² Even though the majority of developing countries have recently started to design and implement instruments such as carbon taxes, green energy funds, renewable energy and sustainable public procurement initiatives, there are few comprehensive “green growth” policies or strategies in place.³ The reason for it is that in some developing countries the governments are still struggling to address other priorities, mostly related to social-economic issues such as employment and economic stability. As such, green jobs and green skills projects and programmes do not always reach the top priority. Nevertheless, the governments in developing countries acknowledge the need to make a transition to a greener economy.

Green economy and green growth are seen as strategies to promote “green” employment, while green skills have been identified as needed to unlock the potential of green jobs. Studies mention that a transition to a green economy will have a slightly positive impact on the labour force in terms of total employment. A review of 24 studies carried out by ILO study found that “in

² OECD (2012) [Green Growth and Developing Countries: A Summary for Policy Makers](#)

³ OECD (2012) [Green Growth and Developing Countries: A Summary for Policy Makers](#)

emerging economies such as Brazil, China, Mauritius and South Africa, green investments were found to accelerate economic growth and employment creation”.⁴ For example, greening Jordan’s economy could bring about 51 100 new jobs and trigger approximately JD 1.3 billion in new investments over ten years.⁵ In Brazil, it was found that GDP would grow 0.5 per cent per year above the BAU scenario and job creation would be 1.13 per cent faster between 2010 and 2030 due to the transition to a low carbon economy (through energy efficiency, renewables and avoiding emissions from land-use change).⁶ These are just a few examples of the positive impacts of greening the economy on the labour markets in developing countries.

The link between education, training, employment and environmental sustainability has been also discussed during the Post 2015 Millennium Development Goals (MDG) Agenda and at the preparation of the COP 21. The Post 2015 Millennium Development Goals (MDG) Agenda is an initiative led by the United Nations to help define the future global development framework, succeeding the UN Millennium Development Goals – which is a set of eight global development targets set in 2000 that should be reached by 2015. The 7th MDG is to ensure environmental sustainability. In its post-2015 MDG Agenda, the world leaders have called for an ambitious long-term agenda that is expected to be adopted in September 2015. Part of the debate on this Agenda is how to measure the new dynamics. This is needed in order to understand and develop measurements of progress on sustainable development that go beyond gross domestic product.⁷ For this, measurable targets and indicators are crucial to allow us to collect, compare and analyse reliable data. Since then, the post-2015 Agenda is likely to highlight the transition to a “green economy”; one option is to mainstream environmental sustainability across all goals – including green jobs and green growth.⁸ This will require indicators that are able to measure green jobs and skill. Hence it is important to discuss green jobs strategies and programmes in developing countries, also how these can be put in the context of the Post 2015 MDG goals.

⁴ ILO (2013) Sustainable development, decent work and green jobs

⁵ UNEP (2011). Towards a Green Economy in Jordan.

⁶ World Bank (C. de Gouvello) (2010) Brazil low-carbon country: Case study.

⁷ UN (2014) Synthesis Report of the Secretary-General on the Post-2015 Agenda.

⁸ CIGI and KDI (2012) Post-2015 development agenda: goals, targets and indicators. Special Report. The Centre for International Governance Innovation and the Korea Development Institute.

II. The Purpose of this Report

The purpose of this report is to shed some light and explain the important role of human capital, in particular green jobs and skills, when implementing environmental and climate policies in developing countries. The existing literature on the green growth and green economy debate is reviewed as well as their links to green jobs and skills. The various definitions of green jobs and skills are reviewed and analysed from a developing country context.

Moreover, the strategic and operational approach of international technical and financial partners (e.g. development banks) to develop and promote green jobs and skills are analysed in detail. This includes reviewing their key strategic documents and initiatives and looking in a greater depth at some of their projects. Based on this, recommendations at international, national and project level are formulated, including the proposal for useful tools to relevant actors to promote integration of green jobs/skills concerns in their projects in developing countries.

III. Methodological Approach

The methodological approach behind this report consists of a thorough literature review (see References section for a list of literature), review of strategic documents and green jobs programmes of 10 international organisations (international development banks and other technical partners), stakeholder engagement through five case studies of concrete green jobs and skills projects in developing countries (including interviews with project coordinators) and analysis of the results that lead to recommendations.

1. International organisations reviewed

The strategies and programmes of the 10 international donors and key organisations were reviewed (see section 3.2). In the review, the focus was on whether the organisation uses a particular definition of green jobs and skills, whether it has adopted a green jobs/ green economy/ growth strategy, which green jobs/ skills programmes and projects it has launched, and how these strategies and programmes are incorporated into their operational work.

2. Selected case studies and interviews

Regarding the five case studies, the selection was made based mainly on data availability and with the condition of the project being completed. In addition, a balance between regions, sectors and partners has been taken into account in

order to have a comprehensive and balanced selection of case studies. The focus of these case studies was to assess the key challenges and success factors as well as the impacts on employment and green skills and potential recommendations. The five case studies can be found in Annex B.

IV. Reading Guide

This report is organized as follows:

- **Chapter 2** presents a thorough literature review of the green growth and green economy concepts, as well as green jobs and green skills. Further, it provides an overview of the identified knowledge gaps and limitations.
- **Chapter 3** focuses on green jobs in practice, assessing the strategic approach of key organisations towards green jobs. In addition, this chapter provides key findings from case studies including key success factors and challenges that arise when implementing a project supporting green jobs and skills.
- **Chapter 4** provides recommendations on how to design, promote and apply good green jobs strategies and programmes at three levels – international, national and operational level.
- **The annexes** provide additional literature review findings as well as a summary of the case studies carried out.

Understanding Green Jobs and Skills

This section provides the theoretical context for the study. First, it reviews the state of play of the debate and definitions on the concepts of sustainable development, green economy, green growth, and green jobs and skills. A working definition for green jobs within the context of this study is provided. Second, literature is reviewed for any estimates regarding the effects of the “green economy” on jobs and GDP. This includes looking at methods how to estimate and measure green jobs. Third, based on the review the knowledge gaps and limitations are identified.

I. Key Findings

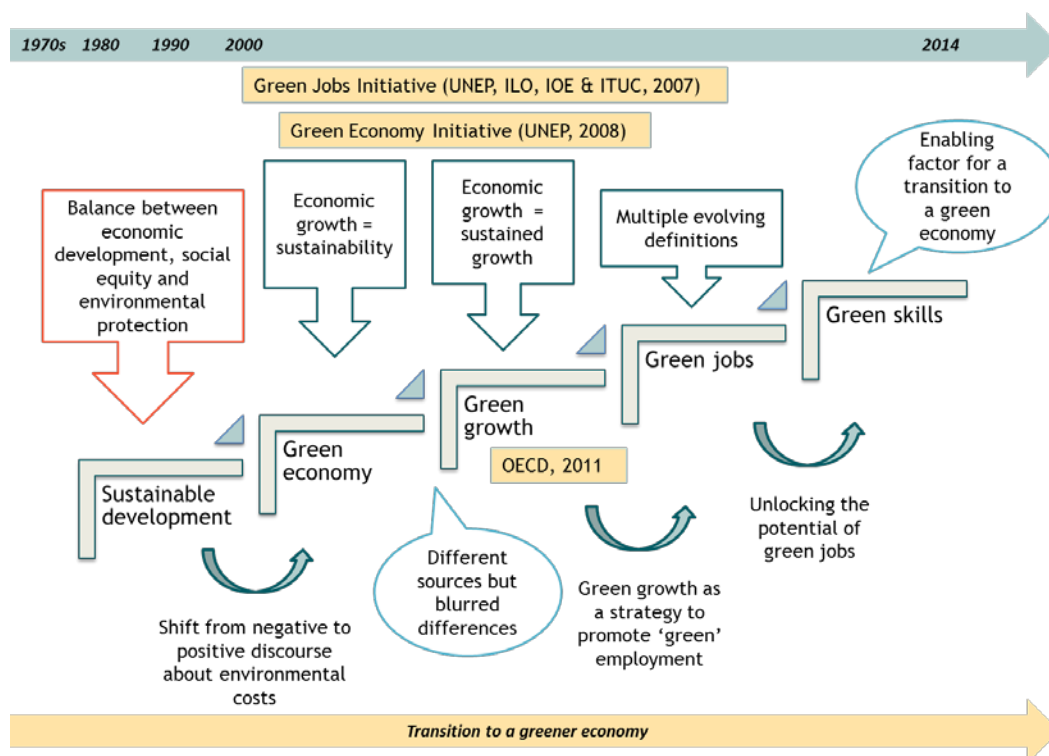
Green jobs and skills are crucial for a transition to a low-carbon economy. The latter creates significant job creation and new opportunities for the existing workforce and is detrimental to companies to remain competitive in global markets. According to the World Bank:

“It is vital to invest in human capital to accelerate growth and green growth.”⁹

The figure below depicts the evolution of the key concepts assessed: sustainable development, green economy, green growth, green jobs and green skills.

⁹ World Bank (2012) [“Inclusive Green Growth - The Pathway to Sustainable Development”](#) - chapter 4 deals with “Human Capital: Implications of Green Growth Policies for Labor Markets and Job Creation”

Figure 4 – Evolution of the key concepts analysed in the report



Source: own analysis

Even though the term “sustainable development” was coined over 25 years ago, there is still no agreement on its interpretation. In an attempt to make the discourse more positive, while at the same time keeping sustainable development as the main goal, the terms of green growth and green economy were introduced. There has been a large body of work on green growth and green economy in the last years. However, these concepts are still emerging and their definitions are not clear. While they have reinvigorated the global debate and renewed efforts on how to redefine our economic model, they risk becoming hollow concepts due to the wide range of interpretations. While these terms have become more and more popular since the late 2000s there is insufficient understanding and addressing of greening skills needs in developing countries. The assumption that greening skills in developing countries is well understood and addressed, and that the labour force is sufficiently equipped with the correct range of skills, is overstated. There are many (funding) programmes all over the world, namely in developing countries, which promote green economy, energy & resource efficiency and renewable energy measures and investments. For these programmes to be

successful, it is evident that technical and financial partners and local institutions will need to integrate green jobs and skills strategies into their education and training programmes at local, sectoral and regional levels. Climate change or environmental related policies have constituted incentives for investments, but do not set out the skills development measures needed to implement the policies. Green skills, however, cannot be easily integrated into existing occupational and industrial classification systems, as there is no uniform definition of the concept. Anticipating employment trends and corresponding skills requirements is, thus, a challenging task in particular from a statistical perspective. Nonetheless, national statistical offices are starting to produce estimates of green jobs using a range of tools including surveys, employment factors and complex models.

While it is not yet clear how to best measure the impacts of greening the economy in terms of jobs, literature¹⁰ suggests that **low-carbon economy will have a slightly positive overall impact** on the labour force in terms of total employment, but will be unevenly spread across countries, regions and sectors. It is expected that the most affected sectors include agriculture, waste management & recycling and the building sector.

Measures to support innovative technical vocational education and training (TVET) policies and green employment should be in place to accommodate green skills developments. For this, institutional adjustments, environmental policy integration and coordination, and greener policy targets should be instituted. Public actors will play a major role in directing and coordinating skills development and training activities to occur. Green skills development requires integrated training and skills development policy, rather than an additional or separate form of skill development.

II. Debate on the Concepts of Sustainable Development, Green Economy and Green Growth

1. The Concept of Sustainable Development

At the **beginning of the 1970s**, the Club of Rome had already drawn attention to the “**limits to growth**”. However, it has taken a long time to reach understanding and accept that a resource-intensive and growth-oriented

¹⁰ Cedefop, 2013; OECD, 2012; UNEP, 2011; ILO, 2013

economic model is not sustainable and cannot be extended endlessly without pushing beyond the biophysical limitations of the earth.¹¹

In **1987**, the Brundtland Report, '**Our Common Future**', led directly to the concept of sustainable development passing into policy discourse. The concept is defined as "**development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs**"¹² denoting a moral appeal to balance environmental and socio-economic necessities for present and future generations in both developed and developing countries. This included the importance of linking the **needs of the poor** with the idea of limitations imposed by the state of social organisation and technology on the capability of the environment to meet the needs of the present and the future.¹³ Sustainable development calls for a concurrence between the three pillars of **economic development, social equity and environmental protection**, suggesting implicitly that economic development and protection of the environment can go hand in hand.

Since the Brundtland report, the concept has been employed in a variety of ways, depending on whether it is employed in an academic context or that of planning, business or environmental policy. The definition leaves a lot of room for interpretation leading to numerous contrasting discourses of sustainable development, some of which are mutually exclusive.¹⁴ Rather than refining the definition, this debate has only broadened the scope of the concept.

2. From sustainable development towards green economy / green growth

Since the turn of the millennium, it became clear that the commitment to **sustainable development had not been sufficient to curb global negative environmental developments**. The evidence of human-made climate change by the International Panel on Climate Change (IPCC) provided a case in point and called for more action. Due to the concepts of **green growth and green economy, a shift was made from the negative and politically unattractive discourse of costs and limits to growth, to discourses that are more positive**. Similar to sustainable development, the concepts stress that environmental protection does not need to impede development and go even

¹¹ GIZ (2013) TVET for a Green Economy

¹² Brundtland, G. H. (1987). *Our Common Future, From One Earth to One World*. Oslo: World Commission on Environment and Development

¹³ Brundtland, G. H. (1987). *Our Common Future, From One Earth to One World*. Oslo: World Commission on Environment and Development

¹⁴ See: Hueting, R., & Reijnders, L. (1998). Sustainability is an objective concept. *Ecological economics*, 27(2), 139-148; Du Pisani, J. A. (2006). Sustainable development—historical roots of the concept. *Environmental Sciences*, 3(2), 83-96

further however, by stating that protecting the environment can even result in *better* growth.¹⁵ The concepts originate from a more mainstream and pragmatic field of environmental-economic policymaking than the more ideological and environmentally oriented sustainable development movement. As such, although green growth and green economy build upon sustainable development, the concepts seem more focussed and carry a strong economic claim.¹⁶ They entail an operational policy agenda that can help achieve concrete, measurable progress at the interface between the economy and the environment. Thus far, the consideration of **the social dimension**, constitutional of sustainable development, **in the “green” paradigm is underestimated**. This prevailing disregard raises convictions regarding the extent to which these newly developed approaches are truly bring about sustainable development.

The Concept of the Green Economy

The term green economy was first mentioned in a report for the Government of the United Kingdom in 1989, designated ***Blueprint for a Green Economy***, commissioned to advise on whether there was a consensus on the definition of “sustainable development”.¹⁷ Apart from the title of the report, there is no further reference to green economy and it appears that the term was used as an afterthought by the authors.

The **green economy concept is not yet commonly understood**, aside from the evident reference to environmental concerns. In **2008**, the term was revived in the context of policy response to multiple global crises. In the context of the financial crisis and concerns of a global recession, **UNEP championed the idea of “green stimulus packages”** and identified specific areas where large-scale public investment could kick-start a “green economy”.¹⁸ It inspired several governments to implement significant green stimulus packages as part of their economic recovery efforts. The UN conceptualizes **the green economy as an economy that “focuses primarily on the intersection between environment**

¹⁵ UNEP. (2011). [Towards a green economy: Pathways to Sustainable Development and Poverty Eradication](#).

¹⁶ Jacobs, M. (2012) Green Growth: Economic Theory and Political Discourse, Grantham Research Institute on Climate Change and the Environment Working Paper No 92

¹⁷ Pearce, D. W., Markandya, A., & Barbier, E. (Eds.). (1989). *Blueprint for a green economy* (Vol. 1). Earthscan.

¹⁸ Atkisson, A. (2013). A Fresh Start for Sustainable Development. *Development*, 56(1), 52-57.

and economy¹⁹ or, as an economy that reacts to the “**growing recognition that achieving sustainability rest almost entirely on getting the economy right**”²⁰. Here, the notion of a green economy is **limited to the economic and environmental dimensions** of sustainable development.

To respond to the raising concerns of what a green economy truly is and to what extent it embraces the three pillars of sustainable development, UNEP defined the concept one that results in *“improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities... In its simplest expression, a green economy is low carbon, resource efficient, and socially inclusive... The development path should maintain, enhance and, where necessary, rebuild natural capital as a critical economic asset and as a source of public benefits. This is especially important for poor people whose livelihoods and security depend on nature.”*

The Concept of Green Growth

Akin to the concept of green economy is the concept of green growth. The term was brought about in the Asia-Pacific region²¹ and was later adopted and disseminated by the OECD and the World Bank, among others. Particularly, the **OECD has become a major proponent of green growth** and supports efforts of countries in its implementation. Similar to the concept of green economy, green growth undergoes **inconsistent definition**.

The **OECD**²² describes it as follows: “**Green growth means fostering economic growth and development, while ensuring that natural assets continue to provide the resources and environmental services on which our well-being relies**. To do this, it must catalyse investment and innovation which will underpin sustained growth and give rise to new economic opportunities.” The **World Bank**’s definition of green growth is “**growth that is efficient in its use of natural resources, clean** in that it minimizes pollution and environmental impacts, **and resilient** in that it accounts for natural hazards and the role of environmental management and natural capital in preventing physical disasters”.²³ Interestingly here is the **preponderance of the economic**

¹⁹ United Nations. (2010). Objectives and Themes of the United Nations Conference on Sustainable Development: Report of the Secretary General. A/CONF.216/7.

²⁰ UNEP. (2011). [Towards a green economy: Pathways to Sustainable Development and Poverty Eradication](#).

²¹ UNDESA (2012) [A guidebook to the Green Economy](#)

²² OECD (2011) [Towards green growth](#)

²³ World Bank (2012) [Inclusive Green Growth – The pathway to sustainable development](#)

and environmental pillars over the social pillar of sustainable development, also apparent in the green economy.

According to **GIZ**, green growth is notably important in the current development discourse: **“promoting qualitative economic growth is a key building block for sustainable development as well as for poverty reduction in developing and emerging countries”**.²⁴ It is assumed that demonstrating the opportunities and potential of green growth to developing and emerging countries is well-founded given their pressing concerns.²⁵ Green growth provides a strong focus on fostering the necessary conditions for innovation, investment and competition that can give rise to new sources of economic growth – consistent with resilient ecosystems.

3. Greening growth vs the economy

Whilst the **concepts** of green economy and green growth have **aroused from contrasting sources**, through the work of distinct organisations, **the differences among them have become blurred** and they are being used almost interchangeably. There is a significant overlap between the concepts, including language around growth and economic development, environmental protection, resilience, resource efficiency, low-carbon development, ecological sustainability, inclusiveness, human well-being and equity.

Some observable differences concern, for instance, the design of encouraged strategies of studied concepts. **Green growth can be seen as a bottom-up approach**, which envisages to green processes, services, supply chains, products and technologies. While **green economy**, in turn, can be regarded **as a top-down approach**, which involves strategic, macro-economic policies that address systemic challenges. Further, the coverage of the environmental spectrum between the two concepts ranges from narrow concerns about climate change to larger critiques of the environmental sustainability of modern capitalism. A list of definitions of green economy and green growth can be found in Annex A.

Inclusiveness, green and economic growth often involve **dissimilar objectives**. Incorporating environmental aspects into development projects can be more costly than conventional development cooperation and therefore less cost-effective from a poverty alleviation point of view. For instance, combining

²⁴ GIZ (2013) TVET for a Green Economy

²⁵ GIZ (2013) TVET for a Green Economy

climate change adaptation with the human right to water and sanitation makes progress towards this objective a lot more expensive. The degree of compatibility between different objectives should therefore be taken into account in the evaluation and can provide important insights in the **constraints of inclusive green growth**. At the same time, the three aspects to inclusive green growth can also allow for solutions to multiple problems, which would be more costly if they were tackled separately. For instance, investment in green infrastructure can be more costly in the short run to reach the objective of increased economic activity and trade, but can prevent costly reinvestment and disaster risk management in the long run.

Nevertheless, **the numerous definitions of green growth and green economy are generally consistent**, as both have sustainable development as their ultimate objective. Although the terms might imply a strong focus on the intersection between economy and environment, **recent publications clearly incorporate the social dimension of sustainable development highlighting inclusiveness**.

III. Green Jobs and Green Skills

1. Green jobs

Facing high unemployment rates since the 2008 financial crisis, the **green growth concept** emerged in the public debate **as a potential strategy to create the basis of a new green employment market**.²⁶ Almost all countries that introduced stimulus packages in response to the financial crisis included significant “green” programmes, with the aim of creating employment growth.²⁷

The first dedicated study on green jobs was conducted as part of the **Green Jobs Initiative**²⁸, which is a **partnership established in 2007 between UNEP, ILO, IOE and ITUC** (see section 3.2.2 for more details). The study is entitled ***“Green Jobs: towards decent work in a sustainable, low-carbon economy”*** and it is **“the first comprehensive study on the emergence of a green economy and its impact on the world of work”**.²⁹ **Green jobs** therefore refer,

²⁶ Huberty, M., & Zachmann, G. (2011). Green exports and the global product space: prospects for EU industrial policy (No. 2011/07). Bruegel working paper.

²⁷ Jacobs, M. (2012) Green Growth: Economic Theory and Political Discourse, Grantham Research Institute on Climate Change and the Environment Working Paper No 92

²⁸ The objective of this initiative is to promote an environmental transition to a green economy, according to the term used by UNEP, involving governments, workers and employers. The framework of this initiative is global and consists of capacity building programs, knowledge building and dialogue between the three parties involved.

²⁹ UNEP (2008) [Green jobs: Towards decent work in a sustainable, low-carbon world](#)

within this initiative, to the consequences of the environmental transition to the labor market. The UN is clearly the central player in green job issues, particularly through the ILO and the UNEP.

Comparable to any green concept definition, **green jobs do not have a universal definition** nor is there agreement on how exactly they differ from conventional jobs, which makes it challenging – particularly to compare studies on green job creation. Green jobs were **initially defined as those jobs that depend on the environment or are created, substituted or redefined** (in terms of skills sets, work methods, profiles greened, etc.) **in the transition process towards a greener economy.** In a broad sense, green jobs can be thought of as those associated with environmental and climate protection objectives and policies. Some green jobs definitions concentrate on occupations and skills with an identifiable environmental focus, but most concentrate on employment in industries providing environmentally beneficial products and/or services (i.e. renewable energy, environmental services, energy efficiency or developing less-carbon-intensive products). Over time, the scope of green jobs has been **extended to also cover jobs related to climate change adaptation and resilience.**³⁰ This is in particular relevant in the development country context. This would call for a paradigm shift to include a broader range of economic development activities that belong to “greening” activities and include local dimensions (adaptation) of climate change governance. The following figure illustrates the different topics that can be found in the definition of green jobs.

³⁰ OECD/ CEDEFOP (2014), “Greener skills and jobs”, OECD Green Growth Studies, OECD Publishing

Figure 5 – Definitions of green jobs and skills



Source: own analysis, RES = renewable energy sources, EE = energy efficiency

The green jobs definition incorporates jobs in **eco-industries**, i.e. those sectors within which activities “are undertaken with the primary purpose of the production of goods and services to measure, prevent, limit, minimize or correct **environmental damage** to water, air and soil, as well as problems related to waste, noise and eco-systems.”³¹ Moreover, it incorporates jobs that contribute to preserving or restoring environmental quality, i.e. protect ecosystems and biodiversity, improve resource efficiency and minimise waste.³² This definition takes a broad industry perspective, extending **beyond employment in narrowly defined environmental services**, by embracing employment in producing goods and services with smaller environmental impacts. The different definitions of green jobs can be found in Annex A.

Moreover, the concept of **decent work and social inclusiveness** is also incorporated in the definition. This has been advocated primarily by UNEP and ILO, who add that “a job that is exploitative, harmful, fails to pay a living wage, and thus condemns workers to a life of poverty can hardly be hailed as green” (UNEP) and that **the definition of green jobs are not necessarily decent**,

³¹ OECD (1999) The Environmental Goods and Services Industry: Manual for Data Collection and Analysis.

³² UNEP (2008) [Green jobs: Towards decent work in a sustainable, low-carbon world](#)

posing the **social controversy** in the context of environmental projects (ILO). ILO further accentuates that the **environmental dimension does not take precedence over the social one**, and that **both are inseparable**. In fact, the definition proposed by ILO is more inclusive as it fosters employment in a sustainable path: **"the jobs are green when they contribute to reduce negative environmental impact, ultimately leading to companies and economies environmentally, economically and socially sustainable."**

For the purpose of this report, a working definition based on ILO/CEDEFOP 2011 study is proposed and presented in the text box below. This definition includes green jobs defined as those that minimise the environmental impact but also are extended to those that help the society to adapt to climate change - while satisfying the criteria for decent work as defined by ILO.

Green jobs are described as jobs that minimize the environmental impact of enterprises and economic sectors to sustainable levels. This description extends to work in services, administration, industry and agriculture that support the preservation or quality rehabilitation of the environment, while satisfying the criteria for decent work adequate wages, safe conditions, worker's rights, social protection and dialogue. Additionally, it covers activities related to climate change mitigation and adaptation. This definition implies in its inclusivity and breadth that every job can potentially contribute to a greener world. As the transition to a green economy escalates, the definition of a green job is very likely to undergo further adjustments. The understanding of what a green job is also differs per country and countries soon enough will be expected to elaborate their own national description of what a green job entails or not.

Source: ILO/CEDEFOP (2011) Skills for green jobs: A global view

2. Green Skills

As mentioned above, in 2008, the ILO, UNEP, the International Organization of Employers (IOE) and the International Trade Union Confederation (ITUC) launched the Green Jobs Initiative to help realize the potential for inclusive green jobs by aligning environment and employment policies. **Skills development is one of the keys to unlocking this job potential**. The timely supply of relevant and quality skills is **indispensable for successful transformations** that boost productivity, employment growth and development.

Skills and competencies are inherently individual qualities. The concept of green skills has been developed to enable the characterisation of skills that can be implemented to accomplish a particular activity in an environmentally friendly way. Green skills are those that are needed in the transition to a green economy including those needed to adapt services, products and processes to climate change and the associated environmental requirements and regulations.³³ Yet, similar to green jobs, green skills **are not easy to define** mainly due to the **overlap with skills and competencies in traditional sectoral activities and existing occupations**.³⁴ Further, green skills evolve as green jobs are created.

CEDEFOP defines green skills as “**the knowledge, abilities, values and attitudes needed to live in, develop and support a sustainable and resource-efficient society**”.³⁵ These competencies cover “a broad range of knowledge and skills, managerial and conceptual”.³⁶ Overall, green skills are **not necessarily new** and are rarely at the heart of a profession; they are also related to the state of the art technology and current knowledge. On the other hand, green skills are **not necessarily green** but are used for greening growth and the economy in which they operate. Examples are presented in Annex A: Literature Review.

The need for skills to support transition to a green economy in developing countries

New economic activity will create new occupations and there will be a need for new skills profiles and qualification and training frameworks. As such, the development of labour force skills, knowledge and competences that will enable the adoption of resource-efficient and sustainable processes and technologies by businesses and communities is a central element for the successful transition to a “green” economy. This transition will be only plausible if the labour force is capable of transferring to other industries and if adequate human capital exists to develop new ‘greener’ industries. Skill development

³³ OECD (2014) Greener Skills and Jobs

³⁴ See CEDEFOP (2010) “Skills for green jobs: European synthesis report”, Publications Office of the European Union. (This literature focuses in large part on “low-carbon” economy, rather than on the wider definition of green economy); ILO (2009) “The employment effects of climate change and climate change responses: A role for International Labour Standards?” International Labour Office, Geneva, GURN Discussion Paper no. 12.; OECD (2014) Greener Skills and Jobs

³⁵ CEDEFOP (2012) [Green skills and environmental awareness in vocational education and training](#)

³⁶ ILO/CEDEFOP (2011) [Skills for green jobs: A global view](#)

activities will be influential in each of these transitions.³⁷ Greening the economy will affect skill needs in three ways³⁸:

- Structural changes lead to **increased demand for some jobs and decreases for others.**
- New economic activity will create new professions, **a need for new skills profiles**, and new qualification and training frameworks. For example, developing and emerging countries in Asia seek to increase the knowledge capacity of their labour force and the sophistication of their domestic markets. As these economies progress towards higher levels of service activity within their economies, the skills and competencies of the labour force must also develop. These economies can benefit by embedding the greening of the skills of the labour force in this wider upgrading of skills.
- Many existing occupations and industries will experience greening changes to tasks within their jobs, which will require **adjustments to the current training and qualification frameworks.** For instance, the agriculture sector – which accounts for 30 to 60% of the GDP in developing countries and employs more people than any other sector - has been highly affected by climate change, destroying or forcing change on many traditional income generation opportunities. **Training is imperative** to support people to implement greener measures, such as water conservation, prevention of soil salinization or loss, transition to sustainable organic farming or biofuel production.³⁹

It is deemed that even moderate improvements in skill levels have a substantial pay-off for the economy in the long term.⁴⁰ Green skills are not only important for the successful transition to a “green” economy, but also to guarantee the maximization of human capital potential.

In general, skills development itself is becoming **explicitly relevant for socio-economic development.** People with appropriate skills have a greater chance of experiencing economic advantages, a higher likelihood of employment and independency on social benefits.⁴¹

³⁷ OECD (2012) [The jobs potential of a shift towards a low-carbon economy](#)

³⁸ CEDEFOP (2012) [Green skills and environmental awareness in vocational education and training](#)

³⁹ ILO (2014) Greening the Economies of Least Developed Countries: The Role of Skills and Training

⁴⁰ OECD (2010) [Green jobs and skills: the local labour market implications of addressing climate change](#)

⁴¹ OECD (2012) [The jobs potential of a shift towards a low-carbon economy](#)

In developing countries, skills development plays a crucial role in seizing opportunities to attract investments, develop markets for new technologies, and to create sustainable, decent and green jobs for a growing labour force.⁴² Empirical studies disclose that **demand for green skills in developing countries revolves around changing environmental conditions and devastating weather events**. While market forces and consumer behaviour are highly influential in modifying skills requirements in industrialised countries, the most important factors in developing countries are environmental changes, policies and regulations.⁴³ Yet, the **assumption that greening skills in developing countries is well understood and addressed**, and that the labour force is sufficiently equipped with the correct range of skills, **is overstated**.

Demand for green skills is still quite limited. In line with this, a CEDEFOP study asserts that changes in curricula and competency frameworks have so far mainly been occurring in explicit “green” jobs, such as solar PV installers.⁴⁴ However, programmes, strategies and measures for environmental and resource protection can only be implemented if an adequate number of employees with the required skills are available to develop, install and operate environmentally friendly technologies and processes. Otherwise, one is confronted with **skills shortages**, defined as “a situation in which the demand for a particular type of skill exceeds the supply of available people with that skill”.⁴⁵ A shortage of skilled labour presents hindrances to the introduction of green technologies in many countries (e.g. renewable energies in Bangladesh, biofuel in Brazil, the building industry China, South Africa and Australia).

3. The intricacy of green jobs and skills

Seeking to **differentiate green from non-green jobs and skills can be misleading to a certain extent** and may be counterproductive under certain circumstances. This is apparent when analyzing different economic sectors and their relationship along the value chain.⁴⁶ For example, environmentally friendly products, such as solar cells or electric vehicles, are not necessarily manufactured according to ecological production standards; and enterprises

⁴² ILO (2013) Meeting skills needs for green jobs: Policy Recommendations; ADB (2013) [Skills Development for Inclusive and Sustainable Growth in Developing Asia-Pacific](#)

⁴³ ILO/CEDEFOP (2011) [Skills for green jobs: A global view](#)

⁴⁴ CEDEFOP (2012) [Green skills and environmental awareness in vocational education and training](#)

⁴⁵ CEDEFOP (2012) [Green skills and environmental awareness in vocational education and training](#)

⁴⁶ ILO (2013) *Sustainable development, decent work and green jobs*, Genève: ILO and GIZ (2013) TVET for a Green Economy

that extract and provide the raw materials often fail in affording their workforce with humane working conditions.

Consensus on what differentiates a new green job from an old job with new or additional components is also lacking. For instance, an energy auditor is considered a new, green job in Estonia whereas in Germany it is viewed as a particular specification of a long established occupation.⁴⁷ Nevertheless, a general consensus is gradually materializing on how to successfully manage the transition into a green economy. It is argued that crucial competences should be promoted primarily by making additions or alterations within already existing jobs, rather than developing new green curricula and training courses. As stated by CEDEFOP (2010), “A balance of generic skills (e.g. autonomy and communication), generic green skills (e.g. reducing waste and improving energy and resource efficiency) and ‘topping up’ existing job-related skills is much more important to developing a low-carbon economy than more specialized, green skills.” Green skills development requires integrated training and skills development policy, rather than an additional or separate form of skill development.

IV. Measuring the Impacts of “Green Economy” and Green Jobs

This section reviews the impacts of green economy on jobs and GDP. Moreover it also looks at how green jobs can be measured and quantified. While there is no systematic and comprehensive assessment of country experiences regarding green growth⁴⁸, there are several global indices comparing countries’ environmental performance such as the OECD’s Green Growth Indicators⁴⁹, Yale’s Environmental Performance Index (EPI)⁵⁰ and the Global Green

⁴⁷ GIZ (2013) TVET for a Green Economy

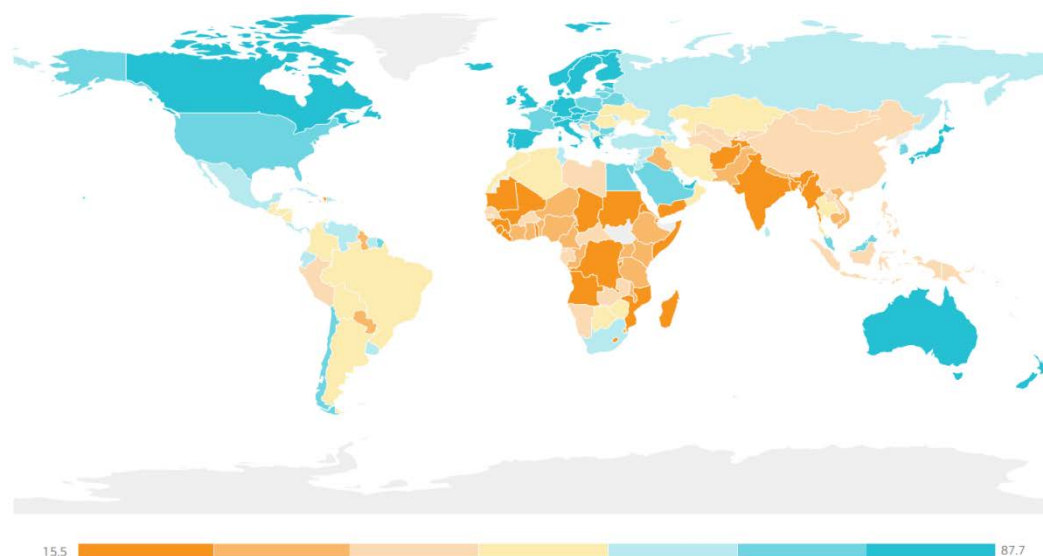
⁴⁸ Green Growth Best Practice (2014) Presentation: [Green Growth in Practice: Lessons from Country Experiences](#)

⁴⁹ As part of its Green Growth Strategy, the OECD has developed a conceptual framework and indicators that help governments monitor progress towards green growth. The indicators have been selected according to well specified criteria and embedded in a conceptual framework, which is structured around four groups to capture the main features of green growth: Environmental and resource productivity, the natural asset base, environmental quality of life, and economic opportunities and policy responses. The proposed set of indicators comprises about twenty-five indicators, not all of them are measurable today. OECD (2014) [Green Growth Indicators 2014](#)

⁵⁰ ‘The Environmental Performance Index (EPI) ranks how well countries perform on high-priority environmental issues in two broad policy areas: protection of human health from environmental harm and protection of ecosystems. Within these two policy objectives the EPI scores country performance in nine issue areas comprised of 20 indicators. Indicators in the EPI measure how close countries are to meeting internationally established targets or, in the absence of agreed targets, how they compare to the range of observed countries.’

Economy Index⁵¹. These indices usually show that developing countries need to improve their environmental performance (as seen in the image below showing Yale’s EPI rankings around the world.)

Figure 6 – Global map of the 2014 Yale’s EPI rankings



Source: Yale University (2014), 2014 Environmental Performance Index - Full Report and Analysis.

1. Assessing the impacts of green economy on labour markets and economic development

The existing literature identifies a number of impacts of green economy on labour markets and economic development (e.g. GDP). Overall, it is clear that **there will be some winners but also losers on the labour market**. Up to date, research of potential conflicts between the increase of green jobs and the decrease of brown jobs is very limited.⁵² Greening the economy can eventually lead to contraction of non-green “brown” sectors and a rapid increase in

Yale University (2014), [2014 Environmental Performance Index - Full Report and Analysis](#).

⁵¹ Dual Citizen Inc (2014) [Global Green Economy Index: GGEI 2014. Measuring National Performance in the Green Economy](#)

⁵² For example, in Germany, the high expenditures on sustainable energy (30 billion EUR per year) are often justified on the grounds that they also create a lot of new, green jobs. However, empirical evidence on the effects of the German Feed-in Tariff for renewable energy indicates that this could be true for the short term, but total employment on the long term is expected to remain the same or even decrease. (Frondel, M. et al.(2010) ‘Economic impacts from the promotion of renewable energy technologies: The German experience’, Energy Policy 38: 4048-4056)

employment on strategic green sectors. However, this increase represents a very small share of total employment, and as such their recruitment needs will be modest. Studies mention that **low-carbon economy will have a slightly positive overall impact** on the labour force in terms of total employment, but will be unevenly spread across countries, regions and types of workers⁵³. ILO has also stressed the trade-off between the creation of new jobs by a green economy strategy and jobs that may disappear: “Whether the overall quantitative effect on employment is positive or negative depends on the complex interplay between these job flows and the policy mix”⁵⁴. The quality of the new jobs compared to the lost jobs is also important to take into account, as well as the potential comparative advantages gained by some companies through green growth strategies.

A review of 24 studies available for nine countries and two regions and one global analysis find that observable net employment gains have been accomplished, or can be realized.⁵⁵ For example, in Brazil, sustainable land use could lead to an annual increase in employment of 1.13% between 2010 and 2030; while in Indonesia a 2% GDP annual green investment in energy, transportation and forestry could generate between 0.9 and 1.2 million jobs with decent working conditions. Further information regarding the impacts of green economy on labour markets is presented in Annex A: Literature Review (Empirical evidence on Green Jobs and Skills).

⁵³ Cedefop, 2013; OECD, 2012; UNEP, 2011

⁵⁴ ILO (2013) Sustainable development, decent work and green jobs, Genève: ILO.

⁵⁵ See: ILO and ILLS. (2012). [Working towards sustainable development](#) and ILO (2013) Sustainable development, decent work and green jobs, Genève: ILO.

Empirical evidence on green jobs and skills

Jordan – Green job creation

The government of Jordan is currently supporting numerous policies, initiatives and programmes aimed at achieving a green economy. UNEP carried out a study in 2011 reviewing the implications for a transition towards a green economy.⁵⁶ Greening Jordan's economy in the sectors of energy, water, transport, waste management, agriculture and tourism could bring about 51100 new jobs and trigger approximately JD 1.321 billion in new investments in ten years. This could simultaneously mobilize significant development aid to support jobs and income advancements and ensure long term sustainability.

Uganda - Sustainable agriculture

Agriculture is Uganda's major source of GDP and provides 69% of all employment. Uganda has experienced an important process of land conversion towards organic agriculture in the past two decades. By 2003 Uganda's land area under organic agriculture production was the world's 13th largest, and the largest in Africa. The number of farmers certified organic went from 180,746 (2008-09) to 187,893 (2011) and their income improved by up to 300% compared to conventional products. Uganda's certified organic exports increased from US\$3.7 million in 2003–04 to US\$22.8 million in 2007–08.⁵⁷

Upgrading recycling work in Brazil and Sri Lanka

Brazil has the world's largest national waste-pickers' movement due to an effective mix of policies put in place by the Brazilian Government over the past decade. The income of its some 60,000 members is three to five times higher than that of unorganized waste pickers. The Brazilian poverty eradication strategy from 2011 aims to scale this up and formalize a further 250,000 waste-pickers.⁵⁸ Similarly, Sri Lanka has initiated a strategy to improve working conditions and the formalization of jobs among the most vulnerable categories of informal workers, including those in waste management. Among other things, 4,000 waste handlers, truck drivers, waste sorters/collectors and local communities have been sensitized on occupational health and safety at work.⁵⁹

⁵⁶ UNEP (2011). Towards a Green Economy in Jordan.

⁵⁷ Adapted from: ILO. (2013). Sustainable development, decent work and green jobs.

⁵⁸ Dias, S.M. (2011). Overview of the legal framework for inclusion of informal recyclers in solid waste management in Brazil, WIEGO Urban Policies Briefing Note No. 8 (Cambridge, MA, WIEGO).

⁵⁹ ILO. (2012). Employment creation model in Sri Lanka: Promoting green jobs and livelihoods in municipal solid waste management.(Jakarta).

Another relevant impact highlighted by literature is the fact that **green growth might bring about negative impacts on the poor**. Promises that green growth will offer a rapid route out of poverty are not plausible; although there may be a less rapid exit than with more conventional growth strategies. To sustain growth, green growth needs to be weighed in terms of its ability to reduce poverty. To sustain poverty reduction, green growth should give up some environmental benefits to keep the growth-poverty elasticity high. Because poverty reduction remains at the top of the agenda, different shades of green may be needed. In particular, poverty reduction is a powerful force for giving those who are currently poor more resilience to the increasing risks of climate change.⁶⁰

Finally, green growth is economically costly. The critical area of the green growth debate concerns the acceptance of short-term adjustment costs in the expectation of long-term gains. Most green policies have an economic cost over the short term, despite the economic benefit from a better environment and natural capital in the long term. Green growth policies should reconcile the short and long term, by maximising synergies and mitigating trade-offs across space and time. This is particularly relevant for low-income countries, in which green growth policies may be inconsistent with their comparative advantages and past investments, economically costly and face social resistance.

Most affected economic sectors

The transition to green growth will imply changes in technology, skill requirements and work organisation that occur along the whole value chain and thus affect the labour force very broadly. Across a number of economic sectors, there are promising opportunities and indeed necessity for increasing the quality of work through improved working conditions, better occupational safety and health, and higher incomes to arrive at a greener economy. Agriculture, waste management and recycling, and the building sector stand out in this regard (ILO, 2013; OECD, 2012; UNEP, 2012), albeit the contrasting reasons and with contrasting options for realizing necessary improvements. Other identified sectors include renewable energy, energy efficiency, transport (Cedefop, 2010; 2012), fisheries, beach and skiing tourism, infrastructure, finance and insurance (Council of the European Union, 2010). A brief overview of the most affected

⁶⁰ World Bank. (2014). Is green growth good for the poor?

economic sectors, namely agriculture, waste management & recycling and the building sector, is presented below.

Agriculture, the sector on which most of the world's poor depend and one of the largest emitters of greenhouse gas emissions (GHGs), has a global workforce of over 1 billion. It is the largest user and a significant polluter of water, and the key cause of land degradation and loss of biodiversity. These environmental challenges can be met if there is a strong drive to train and support farmers to adopt productive farming methods with a low environmental impact. For example, **Uganda's agriculture sector**, which represents 69% of employment with around 4.5 million smallholder farmers, has experienced an important conversion process towards sustainable agriculture as a means of enhancing people's livelihoods. This process, which started in 1994, had 187,893 organic certified farmers and 226,954 hectares under organic agriculture production by 2011. Uganda's certified organic exports increased from US\$3.7 million in 2003–04 to US\$22.8 million in 2007–08. GHG emissions per hectare are estimated to be on average 64 per cent lower than emissions from conventional farms.⁶¹

Employment in **waste management and recycling** will continue to increase as recycling rates rise. Of the 19–24 million workers currently in the sector, only 4 million are in formal employment. The vast majority work as informal waste-pickers in developing countries, with a large percentage of them presumed to be women. Recycling will only become a truly green activity with job formalization. **Brazil**, for example, has put in place an effective mix of policies including legal recognition, entrepreneurial development, municipal government contracts and facilities (sorting stations), modern recycling methods, skills development and occupational safety and health precautions, as well as measures to prevent and discourage child labour. This has triggered large-scale improvements in recycling efficiency, working conditions and incomes (which are three to five times higher than that of unorganized waste pickers) and has led to Brazil having the world's largest national waste-pickers' movement. The 2011 poverty eradication strategy *Brasil Sem Miséria* aims to scale this up and formalize a further 250,000 waste pickers in addition to the 60,000 already organized.⁶²

⁶¹ Adapted from: ILO. (2013). Sustainable development, decent work and green jobs.

⁶² Dias, S.M. (2011). Overview of the legal framework for inclusion of informal recyclers in solid waste management in Brazil, WIEGO Urban Policies Briefing Note No. 8 (Cambridge, MA, WIEGO).

The **building sector**, which employs at least 110 million construction workers worldwide, has the highest potential for improving energy efficiency and reducing emissions in both industrialized and developing countries. However, construction of energy- and resource-efficient buildings requires competent enterprises and skilled workers. Therefore, skills upgrading and certification of building firms, formalization, and improvements in working conditions to retain qualified workers will be key components of strategies in this sector.

To summarise the literature findings, the most affected economic sectors related to green jobs – according to our literature review – are presented in the table below.

Table 1 – Typology table with affected economic sectors and description of key activities in these sectors

Sectors affected	Description
Built environment	green infrastructure, energy efficient buildings, smart meters
Waste and recycling	Hazardous and non-hazardous waste, recycling management, re-use, remanufacture
Water management	water & sewer systems construction, pump & pumping equipment manufacturing, development and manufacture of advanced water management technologies
Agriculture	Organic farming, rainwater harvesting, flood meadow, irrigation supply system, crop and soil management
Services	Strategic training services and programmes Implementation of environmental laws ISO and WTO activities linked new environment measures (LCA)
Forestry	Rehabilitation forest fires, improved forest fire early warning systems, dissemination of improved forest management practises woods for energy and for environmental buildings (in France)
Disaster preparedness and response	Advanced modelling to identify risks, sustainable urban drainage systems, coastal defences, development of early warning systems, improvement and implementation of emergency relief services
Insurance and financial services	Reinsurance products to reduce companies risks against the increase of claims, financing models for climate change adaptation, provision of finance to SMEs providing relevant services
Health	Health education services, monitoring of disease outbreaks and development of a national response plan, allergology
Energy	Manufacture and distribution of small scale energy technologies, energy-

Sectors affected	Description
generation, transmission and distribution	efficient ventilation systems, solar cooling (PV powered) to cope with demand peaks, increase the intake capacity to accommodate larger supply of biomass, building a cooling tower, all Renewable Energies, small and big (hydropower...)
Transport	Improve fundamentals of roads and bridges, make asphalt of roads and airports heat resilient, adequate design and maintenance of bridges and tunnels, new transport routes due to climate change
Tourism	Construction of new services (accommodation, water etc.) to account for increased capacity needed, Design of sustainable services and better access

The impacts on the sectors depend on the location and climate conditions, importance of particular industries and sectors, labour productivity of the different economic sectors and education level.

2. Measuring green jobs and green skills

The green economy and, in particular green jobs, **remain challenging from the statistical perspective**. Existing literature confirms that the quantification of green jobs is particularly difficult due to the lack of clear definitions, as well as the limited availability of data.⁶³ There are very few comprehensive data on green jobs, even at national level. Yet, national statistical offices, at least in statistically developed countries, are increasingly producing estimates of green jobs, drawing on **data from official establishment surveys**. One of the most comprehensive approaches was adopted by the US Bureau of Labour Statistics (BLS).⁶⁴ The BLS approach consists of measuring green jobs using two different ways:

- i) Jobs **in business that produce goods or provide services that benefit the environment or conserve natural resources (outputs), or***
- ii) Jobs **in which worker's duties involve making their establishment's production processes more environmentally friendly or use fewer natural resources (processes).***

⁶³ ILO 2013 - [Methodologies for assessing green jobs](#) and ILO (2014) [Report on the pilot project towards developing statistical tools for measuring employment in the environmental sector and generating statistics on green jobs](#).

⁶⁴ ILO 2013 - [Methodologies for assessing green jobs](#) and ILO (2014) [Report on the pilot project towards developing statistical tools for measuring employment in the environmental sector and generating statistics on green jobs](#).

The use of these two **overlapping elements** implies two different approaches to statistical measurements: and *output* approach and a *process* approach. In the **output approach**, BLS is concerned with jobs related to producing a specific set of goods and services, and is not concerned with the environmental impact of the production process. The output approach alone, however, would not cover some activities and associated jobs that favourably impact the environment although the product or service produced is itself not "green." The **process approach** is intended to address this aspect of green jobs. In the process approach, BLS is concerned with whether the business uses practices or technologies that have a favourable impact on the environment, regardless of the good or service produced. The process approach is relevant to any industry. Each approach requires different measurement strategies and will tend to count different jobs, with some overlap in industries that produce green goods and services.⁶⁵

This shows that **the crucial aspect of measuring green jobs** in any country is to first **adopt a clear definition of what one wants to measure**. Once this definition is adopted there are several methodological tools how to collect data on the number of jobs or make estimates. These tools are listed in the table below:

⁶⁵ Ibid

Table 2 – Methodological tools used for collect data and estimate green jobs.

Tool	Description
Inventories and surveys	Surveys and inventories can provide a simple and effective way of assessing how many green jobs exist in specific sectors or countries. If repeated consistently over a prolonged period, they can also provide a useful measure of the new jobs linked to green job policies/initiatives. Some studies are comprehensive, while others ‘scale-up’ a limited review so that it can provide an estimate of green jobs for a whole country or region. The tool has been used by BLS as mentioned above.
Employment factors	Employment factors measure the number of jobs created per unit of produced product or service. It is often used for employment in the energy sector using jobs per megawatt of installed capacity; jobs per million litres of biofuel produced; or jobs per petajoule. In the same way, the potential number of green jobs can be assessed using the number of jobs that could be created for a given investment . The data for calculating employment factors can in principle be derived from a number of sources which might include data from a broad industry survey, feasibility studies and technical literature specifications.
Computable General Equilibrium (CGE) models and System Dynamics	These models combine empirical data from input-output (I-O) analysis and social accounting matrices (SAMs) with economic equations to capture the dynamism and complexity of an entire economy. This allows simulating full economy responses to exogenous changes and assessing the effects of policies over time on a variety of macroeconomic parameters, including future employment scenarios. OECD’s Environmental Linkages Model and the Millennium Institute’s Threshold21 (T21) model, which is used by UNEP’s Green Economy work, are such CGE models.

Source: ILO (2013) Methodologies for assessing green jobs and ILO (2014) Report on the pilot project towards developing statistical tools for measuring employment in the environmental sector and generating statistics on green jobs.

V. Identified Knowledge Gaps and Limitations

Green growth and green economy as emerging concepts

The **literature** on green growth and green economy is recent and **dominated by global and industrialised country contexts**. The body of work on definitions and the potential of green growth are evidently larger than empirical analysis. Additionally, the research to date focuses primarily on questions concerned with innovation, jobs, technology, trade and metrics. In contrast,

research in developing countries has been limited and concentrated on questions of country strategy preparation. In fact, discussions of green growth have addressed little about *how* it is realized other than conventional measures for externality internalisation and innovation, and even less about the potential consequences on poverty reduction from policies that steer an economy onto an environmentally sustainable path.

Albeit the considerable body of literature on the need for green growth policies and their potential, it seems that the **case for green growth is not universally acknowledged**. There is an increasing debate on the relevance of green growth approaches in developing countries; yet, the main point of contention regards the affordability or the acceptability of short-term costs in the expectation of the long-term benefits of environmental sustainability. There is lack of evidence that the advocated green economy & green growth policy prescriptions can simultaneously bring about environmental sustainability, economic growth and poverty reduction. Together with this lack of evidence, the contrasting definitions on the green economy and green growth further welcome contestations about the practicality of both approaches.

The risk of popular but hollow concepts

The concepts of green growth and green economy try to reconcile **two often contradictory interests**: economic growth without environmental damage, and environmental enhancement without economic cost. However, they are concepts under construction, with a **wide array of interpretations and opinions** on how they should be defined and implemented. As long as different interpretations of the concept exist, the concepts face the risk of becoming a popular but hollow term, failing to achieve a genuine greening of the economy. On the other hand, the green economy and related concepts have succeeded in reinvigorating global debate and renewed efforts on how to redefine our economic model to realize sustainable development.

Unclear impacts (benefits) of green growth and green economy

Green growth entails a promise of enhancing economic wealth. However, it is unclear what the impacts will be when compared to the benefits of a business-as-usual scenario. It is inevitable that some polluting industries will shrink in the process, while others may grow. And as such, the question remains, to what extent green growth will truly bring about sustainable

development. While the transition towards greener economies will not bring about win-win situations, at least not in the short term, one cannot generally conclude that green growth is unfeasible. As the name *transition* suggests, greening economies is a long-term process, which demands solid institutional adjustments, environmental policy integration and coordination, greener policy targets, green skills development and, most importantly, behavioural changes.

Difficulty to measure green jobs and skills

While it's not easy to say how many jobs will be created and/or reduced by the greening of the economy, it is certain that the ongoing process of transformation of the economy will result in significant changes in labour demand both between and within economic sectors. Yet, the literature indicates that **green skills cannot be easily integrated into existing occupational and industrial classification systems**, as there is no uniform definition of the concept. Consequently, anticipating employment trend and corresponding skills requirements is challenging. Well-established and refined market information systems can be beneficial, but will need to be adjusted to the new skills requirements.

Insufficient understanding and addressing of greening skills needs in developing countries

Green skills in developing countries are not yet fully addressed, thus the **labour force is not yet sufficiently equipped with the correct range of skills**. Developing countries have further hindering factors such as persistent illiteracy and lack of access to primary and lower secondary school hindering the acquisition of foundation skills. This can result in shortages of an adequately skilled workforce, holding back the transition to a greener economy. Although progress has been made in increasing the access to good quality education and training, this access remains critically limited. Opportunities to upgrade skills are restrained by reasons encountered in most low-income countries, such as costs of training and transportation, poor infrastructure and entry requirements above those that would-be participants can meet.

The need of an effective policy framework with targets and indicators to speed up a transition to a “green economy”

Political support, concrete and quantitative goals, together with clear indicators are key in order to move from a complex debate on green growth and green economy towards an effective policy framework. Not only the opportunities, but also the limitations of green growth will have to be faced and communicated. **Various policy instruments could and should be used to promote green growth**, for instance putting a price on detrimental effects to the environment, abolishing environmentally harmful subsidies, and promoting R&D.

Green Jobs in Practice

This section focuses on the strategic and operational approach of international institutions and development banks towards green jobs and provides practical examples through case studies. We focus on how relevant organisations incorporate the environmental dimension in the continuum education-training-employment. We provide tangible information on the different types of initiatives supporting green jobs and skills as well as their impacts, lessons learnt and key success factors - based on our case studies.

I. Key Findings

We have selected 10 organisations that actively support green economy and green jobs through strategies, programmes and/or projects. The summary overview of these organisations and their strategic and operational approaches towards green jobs and skills are listed in the table below.

Table 3 – Positioning of key organizations

Type	Organisations	Position
Banks & Development agencies	World Bank	Main goal reduction of poverty. High commitment for inclusive growth and sustainability. Both climate and jobs are two of the five main cross-cutting solutions areas in the WB, hence treated separately. Theoretical research on green growth and green jobs. No focus on green economy. At operational level, mainstreaming of employment issues into environmental projects and vice versa. No specific financial instrument for green jobs and skills.
	Inter-American Development Bank	Main goal reduction of poverty and inequality and sustainable development. No direct link to green jobs but high-level strategies support climate change (and sustainable energy) and inclusion in the labour market (gender/poor/youth) separately. No priority strategies on green growth or green economy but involved in this. At project level, environmental aspects mainstreamed into education and training projects and vice versa.
	Asian Development Bank	Poverty reduction as overarching goal. Inclusive economic growth and environmentally sustainable growth are two of the three strategic agendas. Strong emphasis on green growth.

Type	Organisations	Position
		Education and environment separate topics. Some publications on skills for green growth. Mainstreaming of education aspects into environmental sectors and vice versa at project level.
	African Development Bank	Main mission to support economic development and social progress. Very explicit inclusive and green growth strategy for its member countries. Inclusion of green jobs indirectly through green growth and skills and technology operational priority. Funding of green growth projects, indirectly green jobs and skills.
	UK's DFID	Main focus on reducing poverty. Economic Growth and Climate & Environment are two of DFID's six priorities, treated separately. No direct links to green growth, green economy or green jobs, though a project report has been published on the topic. Environment and education linked at project level.
	GIZ	Core business capacity development. No direct link to green growth, green economy or green jobs and skills. But through its TVET projects 'environmental concerns' included for 20 years.
United Nations	ILO	Specialised UN agency to promote jobs and protect people. Green jobs one of the main topics. ILO associates green jobs with a green economy, but does not discuss green growth as such. They have established the Green Jobs Initiative supporting directly green jobs and skills projects in developing countries.
	UNDP	UNDP coordinates global and national efforts to reach the Millennium Development Goals and deals directly with sustainable development and climate issues. No explicit strategy for green jobs but published reports linking green jobs to poverty reduction.
European Union	European Union	Inclusive green economy and green growth a key priority. Green jobs and skills mainstreamed into green economy policies at strategic and operational level. Strong focus on environmental issues, interlinked with poverty reduction and economic development.
Other key institutions	OECD	Several strategies, including: Strategy on Development (focusing on inclusive growth), Green Growth and Skills. These strategies are applied in practice through projects aiming at building local inclusive growth and jobs (including green jobs). Importance of labour markets in the transition highlighted.

The findings show that while several of these organisations have publications on the topic of green jobs and skills, only the ILO considers green jobs directly at a strategic level, and as such is a clear champion in this field. However, most of the organisations do consider inclusive and sustainable growth (WB, ADB, EU) or inclusive green growth (AfDB, OECD) as a key priority. It can also be noted that those organisations which do not explicitly deal with green growth do consider e.g. economic growth and environmental issues as climate change (DFID) or sustainable development and climate issues (UNDP).

Furthermore, **most of these organisations**, in particular the development banks, **have reduction of poverty and economic development as their key missions**, integrating green (and inclusive) growth and green economy into their strategies and programmes explicitly or indirectly. The development banks treat environment and employment & education themes as separate topics at the strategic level. However, at the operational level, mainstreaming of environmental concerns into employment & education projects and vice versa happens regularly to some extent, without any specific high-level green jobs and skills strategy. GIZ on the other hand, has capacity development as its core business across a variety of sectors, including climate change and energy, and as such indirectly promotes green jobs and skills through its vocational and training programmes in such sectors. EU and OECD are also very active players in the field of green economy and green growth and show a clear importance to employment and skills in the transition to a green economy. At operational level, green jobs and skills programmes are supported, whether through mainstreaming or directly.

In conclusion, there seems to be **different levels of involvement** in which organizations incorporate green jobs in their operations: At the highest level, the concept can be included in the organization's strategy and/or mission or when the organization is involved or leads an initiative/ programme on the topic. At an operational level, it can be dealt with in a pragmatic way, i.e. when employment or Technical Vocational Education and Training (TVET) are core areas of work; or in an indirect way, when research is carried out on the topic.

To support the review, case studies from these partners that aim to promote green jobs and skills in different regions and sectors were assessed. An important finding from the analysis was that the local context can largely influence the results and impacts. Further, the impact of the different initiatives is of course linked to the objectives and the approach taken. As such, not all

initiatives will lead directly to an increase in green jobs and skills. This is partially due to the fact that green jobs are an emerging topic in the political agendas of developing worlds and as such there is still a long way to go before these results can be measured. Some of the assessed projects, however, developed a baseline analysis or created a knowledge base that will serve to measure results in the future.

II. The Strategic Approach of key actors towards Green Jobs

We present and analyse briefly the most relevant strategies, objectives and publications from each of the organisations. Their strategies are compared to their actual projects and operations. Furthermore, we provide an overview table with specific initiatives where these organisations are involved.

1. Financial institutions and development agencies

World Bank

The World Bank (WB) Strategy⁶⁶ aims to help end extreme poverty and to promote sustainable shared prosperity. *“The two goals emphasize the importance of economic growth, inclusion and sustainability”*. In order to achieve this, the World Bank is structured around a number of Global Practices and cross-cutting issues as showed in the tables below. Both climate change and jobs are cross-cutting solutions areas, which are mainstreamed in the different global practices. However, this implies that **environmental issues and employment are treated separately**, and that **employment issues are rather mainstreamed into thematic environmental strategies and policies or vice versa**.

⁶⁶ WB (2013) [“World Bank Group Strategy”](#)

Table 4 – The World Bank’s structure

Global Practices	Cross-cutting Solutions Areas
Agriculture, Energy and Extractives, Water	Climate Change
Education, Health, Nutrition, and Population	Fragility, Conflict, and Violence
Finance and Markets; Governance; Poverty	Gender
Macroeconomics and Fiscal Management	Jobs
Social Protection and Labour; Transport and ICT	Public-Private Partnerships
Social, Urban, Rural and Resilience	
Trade and Competitiveness	

The World Bank has not produced any ad hoc report on green jobs but, similarly to the OECD, examines employment within the environmental transition policies, and encourages the reinforcement of growth policies of liberalization and flexibility of the labor market by removing barriers to the mobility of workers.⁶⁷ In 2012, the World Bank published a research paper on green jobs⁶⁸ and the report “Inclusive Green Growth - The Pathway to Sustainable Development”⁶⁹ where chapter 4 deals with “Human Capital: Implications of Green Growth Policies for Labor Markets and Job Creation”. The report distinguishes between definitions of green jobs as “employment in ‘green’ industries” and as “the employment consequence of green policies”. It is important to notice that the World Bank speaks about ‘green growth’ rather than ‘green economy’, similar to OECD.

Regarding the actual projects/ programmes, there is **no dedicated loan programme for green jobs or green skills**. The WB co-finances through debt financing several green projects, the so-called green bonds projects, which focus on addressing mitigation and adaptation solutions for climate change.⁷⁰ Environmental and social impacts of these projects are just one component taken into account. Moreover, there are development policy loan programmes financing socially and environmentally sustainable growth in developing countries by supporting structural reforms that will facilitate their transition to

⁶⁷ World Bank (2012) [‘Green’ Growth, ‘Green’ Jobs and Labor Markets](#)

⁶⁸ Bowen A. (2012) [“Policy Research Working Paper 5990: ‘Green’ Growth, ‘Green’ Jobs and Labor Markets”](#). The World Bank - Sustainable Development Network Office of the Chief Economist.

⁶⁹ WB (2012) [“Inclusive Green Growth - The Pathway to Sustainable Development”](#)

⁷⁰ Green bonds projects, designed to reduce poverty and improve local economies by tackling climate change issues impacting developing countries. <http://treasury.worldbank.org/cmd/htm/GreenProjects.html>

improved competitiveness, creating jobs and ensuring sustainable development. These projects are not directly linked to environmental themes of the WB but rather to improving the labour markets and macroeconomic development.

Nevertheless, there are also several projects that more explicitly bridge the gap between environmental and employment themes focusing on **capacity development in environmental and energy sectors**. These can be through Technical Assistance Loan, Specific Investment Loan, Adaptable Program Loan and others. However, the relative number of these projects seems small compared to the total number of projects in separate themes and the majority of them fall under education theme with a small environmental component or vice versa. This could be seen as **mainstreaming environmental concerns into employment or development projects or mainstreaming employment concerns into environmental and energy projects**. This corresponds to the WB structure as indicated in Table 3-2 where climate change and jobs are two cross-cutting issues.

Inter-American Development Bank (IDB)

The IDB supports Latin America and the Caribbean (LAC) countries in **reducing poverty and inequality** and bringing development in a **sustainable** and climate friendly way through building capacity, generating and disseminating relevant knowledge, and offering technical and financial assistance.⁷¹ The IDB has developed strategies for five sector priorities:

- ***institutions for growth and social welfare;***
- ***competitive regional and global international integration;***
- ***social policy for equity and productivity;***
- ***climate change **adaptation and mitigation** and sustainable and renewable energy;***
- ***sustainable infrastructure **for competitiveness and inclusive growth.*****

The last three are relevant within the green jobs context. IDB's integrated strategy for climate change and sustainable energy⁷² highlights the **contribution towards green jobs from energy efficiency and renewable**

⁷¹ IDB website <http://www.iadb.org/en/about-us/about-the-inter-american-development-bank,5995.html>

⁷² IDB (2011) "[IDB integrated strategy for climate change adaptation and mitigation, and sustainable and renewable energy](#)"

energy measures. On the other hand, the IDB's strategy on social policy⁷³ includes in its priorities: Addressing youth-at-risk; improving the functioning of labour markets; addressing structural poverty; and fostering social inclusion with identity. Finally, the IDB sustainable infrastructure strategy⁷⁴ includes as one of its six main priorities to support the construction and maintenance of an environmentally and socially sustainable infrastructure. **Even though there is not a direct link towards green jobs, the Bank's priority strategies deal indirectly with green jobs.**

Similarly as the WB, IDB treats **employment and environmental issues as separate topics** with some overlapping projects related to employment in environment or energy sectors. Social aspects within the education theme, such as youth, low-income, and gender issues, are also very high on the agenda.

Even though there are **no specific green growth or green economy strategies**, the IDB is aware of their importance. One main initiative (in partnership with OECD) is the **Global Green Growth Forum**.⁷⁵ Similarly as the WB, **IDB finances a few projects related to employment and environment/energy**, however, in majority of cases these two topics are **treated separately**. There are some environmental/energy aspects mainstreamed into employment projects and vice versa. An example of such a project is Climate Friendly Education (a regional project) financed as **technical cooperation**.

Asian Development Bank (ADB)

ADB's overarching goal since 1999 is poverty reduction (similar to WB and IDB). ADB pursues this by focusing on three complementary strategic agendas – set in its long-term strategic framework for 2008-2020⁷⁶: **inclusive economic growth, environmentally sustainable growth**, and regional integration. To better mobilize resources and to maximize returns, ADB focuses on five drivers of change and five core specializations to support its agenda. Good governance and capacity development as a driver of change and Environment (including

⁷³ IDB (2011) "[IDB's strategy on social policy for equity and productivity](#)"

⁷⁴ IDB (2014) "[Sustainable infrastructure for competitiveness and Inclusive growth](#)"

⁷⁵ The IDB in partnership with the Government of Denmark and hosted by the Government of Colombia convened the first regional Global Green Growth Forum (3GF) in LAC, in particular to promote renewable energy and energy efficiency in the region. OECD is also an institutional partner of this initiative. <http://www.iadb.org/en/topics/climate-change/global-green-growth-forum-3gf.8529.html>; <http://3gf.dk/en/>

⁷⁶ ADB (2008), "[STRATEGY 2020: The Long-Term Strategic Framework of the Asian Development Bank 2008-2020](#)"

climate change) and Education as two core specialisations are most related to green growth and green jobs.

In the context of the Strategy 2020 and in the follow-up to Rio+20, ADB prepared the report, Environment Operational Directions 2013–2020 on how to help the region *achieve a transition to environmentally sustainable growth or green growth*⁷⁷. The document highlights ADB's support to the MDGs and the need for a multidimensional approach to poverty reduction which requires the social dimension (health, education, gender) to be incorporated into green growth policies and programs. The paper identifies four environment operational directions to promote the transition to green growth, such as investing in natural capital, and six supporting modalities, such as mainstreaming environment into ADB operation and knowledge sharing solutions. The ADB has also published, together with UNEP, a report on green growth focusing on the topic for the Asia Pacific region.⁷⁸ As can be seen from ADB's structure and strategy, ADB has a **strong focus on green growth**, rather than green economy.

With respect to its **position on green jobs and skills**, ADB does not have an explicit position on these issues, however, it did publish a **book on skills development for inclusive and sustainable growth for the Asia-Pacific**.⁷⁹ The volume includes major trends and concerns related to skills development; prominent issues emerging in the TVET and skills development sector in the region; the link between technical and vocational education and the imperatives of greening economies; and prominent trends to articulate an emerging framework for policy and action in the skills and training sector.

Moreover, ADB also provides **finance and advisory assistance** to its developing countries for education services to provide better jobs and to help the region with the transition to a low-carbon and climate-resilient future. Hence, similarly as with the WB and IDB, at operational (as well as strategic) level **education and environment are separate issues**; however, projects exist that bridge this gap by indirectly **mainstreaming education aspects, such as TVET or capacity building into environmental and energy sectors and vice-versa**. Most of such projects fall under education sector or public sector management and environmentally sustainable growth and inclusive economic growth strategic agendas. This implies **financing of green jobs and skills is**

⁷⁷ ADB (2013), "[Environment Operational Directions 2013–2020 - Promoting Transitions to Green Growth in Asia and the Pacific](#)"

⁷⁸ ADB/UNEP (2012) [Green growth, resources and resilience. Environmental sustainability in Asia and the Pacific](#)

⁷⁹ ADB (2013). [Skills Development for Inclusive and Sustainable Growth in Developing Asia-Pacific](#)

indirect and corresponds with the overall ADB strategy. The few ADB projects on green jobs and skills that we found (two projects) are Technical Assistance projects to help implement new policies, such as for example the one selected for a case study (see next section and Annex B)⁸⁰ or ADB's regional project on education and skills for inclusive growth and green jobs.⁸¹ There are also several capacity building projects under environment or energy sectors, which can be in form of grants, TA, loan or a combination thereof. In many cases, capacity building is merely one component of the energy/ environmental project.

African Development Bank (AfDB)

Similar to the other development banks, AfDB's main mission is to support economic development and social progress in its regional member countries in order to contribute to poverty reduction. AfDB, as other development institutions have also agreed to the MDGs. The Bank offers financing as well as policy advice and technical assistance to its member countries. AfDB has a **very explicit green growth strategy** (more explicit than the other development banks) which can be seen from the adoption of several documents and strategies.

Already in 2012, the AfDB published a discussion paper on "Facilitating Green Growth in Africa", providing a definition of green growth⁸² and stating that "*In Africa, **green growth will mean pursuing inclusive economic growth through policies, programs and projects that invest in sustainable infrastructure, better manage natural resources, build resilience to natural disasters, and enhance food security***". Following this paper, AfDB published the "African Development Report 2012: Towards Green Growth in Africa"⁸³ and its **Strategy for 2013–2022**⁸⁴. The first report makes a case for pursuing green growth pathways, offering analytical perspectives regarding green growth within the development contexts of Africa. **The Strategy**, on the other hand, **aims to operationalize the concept by including green growth as one of the two main objectives of the Bank's Strategy**.⁸⁵ The other objective is **inclusive growth**⁸⁶ which will involve improving skills for competitiveness, focusing on

⁸⁰ http://adb.org/projects/details?page=details&proj_id=45510-001

⁸¹ http://adb.org/projects/details?page=details&proj_id=45103-001

⁸² AfDB (2012) "[Facilitating green growth in Africa: perspectives from the AfDB](#)"

⁸³ AfDB (2013), "[African Development Report 2012: Towards Green Growth in Africa](#)"

⁸⁴ AfDB (2013), "[At the Center of Africa's Transformation – Strategy for 2013-2022](#)"

⁸⁵ <http://www.afdb.org/en/about-us/afdb-strategy/>

⁸⁶ This implies achieving "growth that is more inclusive, leading not just to equality of treatment and opportunity but to deep **reductions in poverty** and a correspondingly **large increase in jobs**".

matching skills to the existing local opportunities and requirements. On the other hand, the **transition to green growth** will “*protect livelihoods, improve water, energy and food security, promote the sustainable use of natural resources and spur innovation, **job creation** and economic development*”. The strategy highlights the contribution towards the MDGs. The strategy includes indicators for inclusive growth and green growth, such as ecological footprint or income quality, however, there is **no direct indicator to measure green jobs**. One of the five operational priorities of the Strategy is skills and technology, and one of the three areas of special emphasis is Agriculture and food security. However, as can be seen from the Strategy and its operational priorities **green jobs and skills are not explicitly mentioned** but they are **indirectly incorporated into inclusive and green growth objectives** in particular through its skills and technology operational priority. The separation between employment and skills and environment/ energy objectives is still there, similar to other development banks; however, these objectives can be bridged through its core operational priorities.

The operationalizing of the strategy occurs at three levels: Corporate level, country and regional level and sector level. The AfDB limits operations to its five core priorities, each informed by the three areas of special emphasis through three-year rolling programs and results-based budgets. There are also **several funds available, which are relevant to green growth**, such as for example Adaptation Fund (climate change adaptation projects), Climate Investment Funds, African Water Facility, etc.⁸⁷ Funds such as the Congo Basin Forest Fund and Fund for African Private Sector Assistance provide grants and technical assistance to develop capacity of people and institutions to promote fund’s objectives. Moreover, AfDB has set up a **Green Bond Program** to support projects related to green growth and is involved in the **Global Environment Facility** (similar to other development banks and agencies). This is indirectly related to promotion of green jobs and skills through the capacity building element of these programmes.

Department for International Development (DFID)

Economic Growth and Climate & Environment are two of the six priorities of the UK’s Department for International Development. As part of DFID’s policy to help developing countries’ economies to grow, one of the focus areas is to provide

⁸⁷ Summarised from “Facilitating green growth in Africa: perspectives from the AfDB” (AfDB, 2013)

research evidence on **sustainable economic development** in developing countries. This includes work with the Institute for the Study of Labour in Germany to understand what contributes to creating better jobs in poor countries; how to protect workers while at the same time creating jobs; how to support small enterprises; what types of skills are associated with innovation and productivity growth; and how to effectively support women's participation in labour markets. Another example is the project 'Evidence on Demand: Informing Development Practice – Climate & Environment, Infrastructure, Livelihoods'⁸⁸ which published the report 'Research and Evidence on Green Growth'.⁸⁹

What can be seen again, similar to other development banks, is that the main focus is on reducing poverty through improving economic growth, education and environment. Once again, there is stress on **green growth** rather than green economy, and **education and environment are treated as separate issues** while indirectly linked through the green growth agenda. Green jobs and skills are not explicitly mentioned in the strategies but the projects can include indirectly building and promotion of green jobs and skills through mainstreaming education elements into environment/ energy projects and vice versa.

GIZ

Unlike the other investigated development banks, GIZ pictures itself as offering much broader scope of services, **not focusing as a priority on poverty reduction**, but offering services in trade, climate change, sustainable development, vocational training, economic development, etc. In addition, unlike the other development banks, **its core competence has been capacity development**.

GIZ does **not have a green economy/ green growth or green jobs strategy**. However, it supports green skills through its employment and environment/ energy services. It has sectoral departments on, among other topics, the following:

- ✓ *Economic Development and Employment (including Labour Market, Technical and Vocational Education and Training, and Employment among other topics)*
- ✓ *Education, Health, Social Protection*
- ✓ *Water, Energy, Transport*

⁸⁸ Website: <http://www.evidenceondemand.info/homepage.aspx>

⁸⁹ Evidence on Demand (2013), "[Research and Evidence on Green Growth](#)"

- ✓ *Rural Development and Agriculture*
- ✓ *Environment and Climate Change.*

As part of their Labour Market, Technical and Vocational Education and Training support, GIZ has developed a toolkit to support vocational education and training in the informal economy (See [website](#)). One of these tools is ‘**Green skills for informal workers**’.

Moreover, the German Government, through its Federal Ministry for Economic Cooperation and Development (BMZ), has set expansion of Technical Vocational Education and Training (TVET) as one of the 10 objectives of their education strategy in particular regarding industries that will become more important in the future, such as renewable energies.

GIZ is using two approaches to open up more employment opportunities in the context of greening economies: 1) **integrating green skills into vocational training courses and existing continuing education** and 2) supporting partner countries of the BMZ in **building skill profiles for independent environmental professions**. Environmental and sustainability issues have been part of GIZ projects in the areas of TVET and the labour market since the mid-1990s, ranging from short-term to complex human capacity development projects and comprehensive long-term development projects.

Given the importance placed by BMZ on promoting education for sustainable development, and following research from ILO, CEDEFOP and UNEP on green economy, GIZ has published the report TVET for Green Economy, compiling their experience on projects supporting green jobs.⁹⁰ This shows that **green jobs and skills can be achieved indirectly at the operational level without having explicit high level strategies on these topics**. This could be called a bottom-up strategy for green jobs and skills, where environmental concerns are integrated into TVET and education projects without first relying on a strategy.

2. United Nations

ILO

The ILO is a specialised agency of the United Nations devoted to promoting jobs and protecting people. It has four strategic objectives that fit in its Decent Work Agenda, including promoting decent employment and income. Its key

⁹⁰ [GIZ Company Report 2013 \(GIZ, 2013\)](#) and TVET for Green Economy (GIZ, 2013)

activities include formulation of international policies and programmes to promote rights and improve working and living conditions, creation of international labour standards, international technical cooperation programme, and training, education and research activities to advance all the efforts. Even though its core competence lies in the field of labour, the link to sustainable development has been incorporated in its strategy since 2008 in the “*ILO Declaration on Social Justice for a Fair Globalization*” which refers to the importance for policy coherence for *sustainable* development in national policies.⁹¹ In this declaration the member states commit to advance the Decent Work Agenda.

Another key strategic document is the “*Recovering from the crisis: A Global Jobs Pact*”⁹² from 2009 which promotes a productive recovery centred on investments, employment and social protection.⁹³ **The Pact creates a link to green jobs by proposing measures and policies to support job creation and promote investments in employment-intensive sectors, including green jobs.** In addition, in their ‘decent work’ response to the crisis, the Pact does mention that the response should contribute to a fair globalization, a **greener economy** and *low-carbon, environment-friendly* development. In their specific policy options section, *green* production and services are stated as important tools for creating jobs and stimulating sustained economic activity.

Hence, unlike the assessed development banks, ILO talks about **green economy** rather than green growth and due to its core competence in employment and education, it directly creates links to green economy in its main strategic documents. From this it can be implied that discussion on green growth is not necessary for green jobs and skills development.

Regarding **green jobs**, it is one of the main topics of ILO and ILO is a great proponent of them. Its view is that **green jobs contribute to the creation of decent employment opportunities**, enhance resource efficiency and build low-carbon sustainable societies. It sees green jobs as a direct response to two major challenges of the 21st century – averting dangerous climate change and environmental degradation and the need to deliver socially responsible

⁹¹ ILO (2008) ILO Declaration on Social Justice for a Fair Globalization

⁹² ILO (2009) Recovering from the crisis: A Global Jobs Pact

⁹³ http://www.ilo.org/ilc/ILCSessions/98thSession/texts/WCMS_115076/lang--en/index.htm

development through decent work.⁹⁴ They believe creating green jobs are critical for promoting the transition to a low-carbon, climate resilient and environmentally friendly economy that is fair to all. Environmental sustainability has been part of ILO's overall agenda for many years as can be seen from UN's Millennium Development Goals (MDG) from 2010 where ensuring environmental sustainability is one of the eight MDG goals to be reached by 2015. ILO's aim is to upgrade the objective of full and productive employment and decent work as a central goal of the post-2015 development agenda.⁹⁵ Decent jobs are seen as crucial to reach these goals (through ILO's Green Jobs Initiative).

ILO has published several reports on green jobs aspects globally as well as in particular regions and countries. Their **Green Jobs Programme** has been established in 2007 **in partnership with UNEP** and the International Trade Union Confederation (ITUC). The International Organization of Employers (IOE) joined the initiative in 2008. It aims to promote international policy coherence through research and advocacy, support constituents at national level through policy and technical advisory services, and capacity development of constituents and partners through training and knowledge sharing. The key global reports of this initiative are: "*Green Jobs: towards decent work in a sustainable, low carbon world*"⁹⁶ in 2008 and "*Working towards sustainable development: Opportunities for decent work and social inclusion in a green economy*"⁹⁷ in 2012 which provide definitions and demonstrate that a green economy can also create more and better jobs.

Within the Green Jobs Initiative, the ILO Skills and Employability Department defined a global research project to **investigate skill needs for greener economics**, of which the synthesis report is "*Skills for green jobs – A global view*"⁹⁸ from 2011. This report analyses 21 countries and their experience and shows that there are indeed skill shortages in several countries that limit the

⁹⁴ ILO Regional Office for Asia and the Pacific, The Green Jobs Programme for Asia and the Pacific http://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/documents/publication/wcms_142985.pdf

⁹⁵ [ILO Concept Note on the post-2015 development agenda: Jobs and livelihoods at the heart of the post-2015 development agenda](#)

⁹⁶ UNEP (2008) Green Jobs: towards decent work in a sustainable, low carbon world → It is the first comprehensive study on the emergence of a "green economy" and its impact on the world of work. It provides the definitions, scope and concepts of green jobs, looks at the green policies and business practices, employment impacts for different economic sectors, outlook and conclusions.

⁹⁷ ILO (2012) Working towards sustainable development: Opportunities for decent work and social inclusion in a green economy → This is a joint ILO/UNEP demonstrating that a green economy can also create more and better jobs and lift out people from poverty and promote social inclusion and is a necessary condition for sustainable development

⁹⁸ ILO. (2011) Skills for green jobs – A global view. Synthesis report, ILO, Geneva

transition to a green economy, and provides policy recommendations based on good practices. Through its Green Jobs Initiative, it supports **several projects on green jobs worldwide**, i.e. in Africa, Asia and Latin America. The approach of ILO is to engage governments, employers and workers in dialogue on policies and programmes that could lead to employment in a greener economy.

Green Economy Initiative (UNEP)

The Green Economy Initiative (GEI) was launched by the UNEP exactly at the heart of the financial crisis outbreak, during 2008. The GEI was aimed to motivate and enable governments to invest in green economies and transform the business as usual conditions of economic growth (focused on increasing GDP above all.⁹⁹ Primarily, the GEI is sustained by three pillars: putting a price on nature; **generating green jobs through the implementation of appropriate green policies**; and assuring that these policies are further promoted and regulated, national and internationally, in order to foster the transition towards the green economy. It is expected that an ecologically relevant remodelling of the economy triggers innovation in environmentally friendly technological that are beneficial to the environment and climate, economy and employment as well as to society.¹⁰⁰

As can be seen, UNEP directly **addresses green jobs as a theme of the transition towards the green economy**, which would result in a net job creation, supported by investments in green sectors.¹⁰¹ UNEP endorses a definition that attempts to incorporate aspects of job content and the characteristics of industry goods and services.¹⁰²

UNDP

UNDP coordinates global and national efforts to reach the Millennium Development Goals and focuses on helping countries build and share solutions in three main areas:

- *Sustainable development*
- **Democratic governance and peacebuilding**

⁹⁹ Bouvier, C. (2010). 5th ESDN Workshop: From Green Growth towards a Sustainable Economy?

¹⁰⁰ GIZ (2013) TVET for a Green Economy

¹⁰¹ UNEP. (2011). Towards a green economy: Pathways to Sustainable Development and Poverty Eradication

¹⁰² UNEP (2008) [Green jobs: Towards decent work in a sustainable, low-carbon world](#)

- **Climate and disaster resilience**

Their Sustainable Development goal is to strengthen capabilities and opportunities to reduce poverty and marginalization in ways that are sustainable from economic, social and environmental standpoints. Even though there does **not seem to be an explicit link with green jobs**, the UNDP has published several reports on the topic. It has **linked its green jobs work to poverty reduction, and jobs for women & youth** (See UNDP publications¹⁰³). The discussion paper “**Green Jobs for the Poor: A Public Employment Approach**” focuses on aligning poverty reduction and environmental concerns. The publication states that “*governments have an important role to play in direct employment creation for the poor*” highlighting six situations where environmental public works programme would have high impacts, such as circumstances of acute environmental distress or in urban areas with high concentrations of poverty and unemployment. Overall, the paper “*argues for increased investments in natural capital through the employment of surplus labour*”. The aim is to do this **through environmental public employment programmes** – where governments play a strong leadership role – that “*employ poor unemployed and underemployed people to conduct activities which have recognised environmental benefits*”.

On the other hand, the report “**Green Jobs for Women and Youth – What Can Local Governments Do?**” focuses on green jobs as an opportunity for women and youth, providing targeted recommendations for local governments, such as **setting green jobs indicators; developing training and skills development programmes**; mobilizing fiscal spaces and financing mechanisms; establishing and harnessing innovative partnerships; and, promoting green technology innovation and transfer.

3. European Union

European Union is one of the largest donors worldwide, providing financing to developing and emerging economies to lift them out of poverty through one of its funding mechanisms. **Green economy and inclusive green growth** have been one of the key priorities at European and international level for many years. The European Commission, in 2011, set an Agenda for Change¹⁰⁴ to

¹⁰³ [Green Jobs for the Poor: A Public Employment Approach](#) (UNDP, 2009); [Green Jobs for Women and Youth: What Can Local Governments Do?](#) (UNDP, 2013)

¹⁰⁴ COM(2011)637, “[Increasing the impact of EU Development Policy: An Agenda for Change](#)”

increase the impact of its International Cooperation and Development policy. The Agenda establishes that EU assistance should focus on two overall priority areas: 1) Human rights, democracy and other aspects of good governance, and 2) **inclusive and sustainable growth**. As such, “*the EU’s development policy should promote a ‘green economy’ that can generate growth, create jobs and helps reduce poverty by valuing and investing in natural capital*”.

This shows that also green jobs and green employment in general are already part of the EU strategies towards developing countries. Europe has done **research on environmental employment since the 90’s**. The first publications¹⁰⁵ assess environment-related employment in European countries, while later studies¹⁰⁶ focus on the topic at European level. Boosting jobs, growth and investment is the number one priority of the new Commission. In the developing country context, an article by Capacity4Dev¹⁰⁷ states that considerable efforts have been made **to mainstream the principles of green economy into the European Commission’s development cooperation**. Other main strategies dealing with such mainstreaming are:

- [‘Rio+20: Towards the Green Economy and Better Governance’ \(2011\)](#), which highlights that “*green economy – offers an effective way of promoting sustainable development, eradicating poverty and addressing emerging challenges and outstanding implementation gaps*”.
- [‘A Decent Life for All: Ending Poverty and Giving the World a Sustainable Future’ \(2013\)](#) sets out the Commission views on Post 2015 and Sustainable Development Goals and states that green economy should be inclusive – benefits should be shared among all the population.
- Strategy paper [ENRTP \(Environment and Natural Resources Thematic Programme\) 2011-2013](#) identifies Green Economy and mainstreaming as key priorities for EU cooperation.

¹⁰⁵ [Environment Industry and Employment in Portugal](#) (1997); [Environment-related Employment in the Netherlands](#) (1997); [Environment employment in France, methodology and results](#) (1996-1998); [The Environment Industry in Sweden](#) (1999)

¹⁰⁶ EC (2014) “[Assessing the Implications of Climate Change Adaptation on Employment in the EU](#)” – Report by Triple E Consulting; EC (2012) “LIFE creating green jobs and skills”; EC (2012) “[Skills of tomorrow’s green economy](#)”; [The number of Jobs dependent on the Environment and Resource Efficiency](#) (2012); [Programmes to promote environmental skills](#) (2010); [Study on the Competitiveness of the EU eco-industry](#) (2009); [Environment and labour force skills](#) (2008); [EU environment policy supporting jobs and growth](#) (2007); [Links between the environment, economy and jobs](#) (2007); [Analysis of the EU Eco-Industries, their Employment and Export Potential](#) (2002)

¹⁰⁷ **Capacity4Dev** is DG EuropeAid’s collaborative and knowledge sharing platform. It supports the quality of aid and its impact by promoting the development of capacity. See article: <http://capacity4dev.ec.europa.eu/article/how-european-commission-facilitating-move-green-economy#sthash.kce27U1m.dpuf>

At operational level, many EU programmes and tools exist that support mainstreaming of climate change and environment into other thematic budget lines, and as such support the transition to a greener economy. For example, by 2020, at least 20% of the EU budget should be engaged in climate related initiatives, and EuropeAid itself aims at developing 50% of its activities relevant to environment and climate change. This shows clear mainstreaming efforts of environmental concerns into other themes, including education and training. Tools have been developed to support such mainstreaming, such as training courses on introduction to green economy, on mainstreaming climate change and environment into development cooperation, on country- led mainstreaming or EuropeAid's development of a Mainstreaming Toolbox to help their cooperation countries effectively integrate environmental issues and identify opportunities for a greener economy, this includes mainstreaming into employment and training policies.

4. OECD

The OECD has adopted several strategies on development, green growth and skills. The importance of labour markets in the transition to sustainable growth is highlighted in the different strategies. The OECD Strategy on Development¹⁰⁸ focuses on strengthening OECD's contributions to higher and more inclusive growth. Furthermore it states the OECD's four core thematic areas, such as **innovative and sustainable sources of growth**; mobilisation of resources for development; governance for development; and measuring progress for development. While incorporating inclusive green growth into development policies as part of efforts to promote sustainable development is included as a key activity, there is **no direct link to green jobs in the OECD Strategy on Development**.

On the other hand, the **OECD Green Growth Strategy**¹⁰⁹ provides a practical framework for governments in developed and developing countries to seize opportunities that arise when the economy and the environment work together. This strategy mentions the need to **ensure a smooth labour market transition towards a green economy** by ensuring that labour market policies should focus on preserving employment, not jobs, and through appropriate education policies to develop the new skills needed. The four main policy priorities in the OECD regarding **greening jobs and skills** are:

¹⁰⁸ [OECD Strategy on Development](#)

¹⁰⁹ OECD (2011) "[Towards Green Growth](#)"

- support a smooth reallocation of workers from declining to growing firms, while reducing the adjustment costs borne by displaced workers
- support eco-innovation and the diffusion of green technologies by strengthening initial education and vocational training, and ensuring that overly-strict product market regulations are not blunting the incentive to innovate
- reform tax and benefit systems for workers to make sure that cost pressures generated by environmental policies do not become a barrier to employment.
- Design policies, programmes and strategies for sectoral adjustments as well as local development strategies through partnerships with local stakeholders.

At the operational level, the most important is the **LEED Programme** (Local Economic and Employment Development). In 2013-14 it focused on the theme of building local inclusive growth and jobs. Within the Programme **a number of projects dealt with green jobs and green skills** (i.e. Skills for greener jobs in a local labour market context). The Programme follows both the OECD Green Growth Strategy and the OCED Skills Strategy.¹¹⁰ The OECD has a number of research publications on the topic¹¹¹, and has carried out trainings and workshops as well.

5. Initiatives on Green Economy, Green Growth and Green Jobs

While some organisations have explicitly included green economy in their strategies, several have also joined or created international initiatives on the topic. What can be seen is that the **technical partners** (e.g. UN, EC and OECD) **have very clear strategies on green economy and green jobs**, while the **development banks focus more on green growth and capacity building**. All development banks assessed in this study except of GIZ have as their core mission to reduce poverty in developing countries, which can be done by green growth. These five development banks also cover environment/energy and education/ training topics separately, with several hybrid projects mainstreaming environmental components into their education projects and vice versa. GIZ is a special case as their core business is capacity development in a

¹¹⁰ OECD (2012) "[OECD Skills Strategy](#)"

¹¹¹ See OECD(2014) "[OECD Green Growth Studies: Greener Skills and Jobs](#)" OECD(2012) "[The jobs potential of a shift towards a low-carbon economy](#)", OECD(2010) "[Green jobs and skills: the local labour market implications of addressing climate change](#)"

variety of sectors, resulting in incorporation of environmental elements/ skills into their projects without having an explicit strategy on green jobs or skills or green economy/ growth.

The non-financial institutions assessed in this study have more proclaimed green economy and green jobs and skills strategies as well as dedicated programmes.

An overview of such initiatives and programmes can be found in the table below.

Table 5 – International initiatives on Green Growth, Green Economy and Green jobs

Initiative	Aim	Sectors	Partners	Regional coverage
Partnership for Action on Green Economy (PAGE)	Support 30 countries over seven years to 2020 in building national green economy strategies that will generate new jobs and skills, promote clean technologies, and reduce environmental risks and poverty.	All	UNEP, ILO, UNDP, UNIDO, UNITAR	Burkina Faso, Ghana, Mauritius, Mongolia, Peru and Senegal
The Green Economy Initiative (GEI)	Provide the analysis and policy support for investing in green sectors and in greening environmental unfriendly sectors.	Green sectors and environmental unfriendly sectors	UNEP	Africa, Asia and the Pacific, Eastern Europe, Latin America and the Caribbean and the Middle East
The Green Jobs Initiative	Assess, analyse and promote the creation of decent jobs as a consequence of the needed environmental policies to address the global environmental challenges, among others, climate change.	All	UNEP, ILO, ITUC, IOE	Global
The ILO Green Jobs Programme	Global analysis and country assessment of the potential of green jobs; direct technical assistance; and capacity building	Waste management and recycling, Renewable energy and energy efficiency, Adaptation to climate change	ILO	South America, Africa, Asia
The LEED Programme (Local Economic and Employment Development)	Building local inclusive growth and jobs (2013-2014)	All	OECD	Global
Green Growth Initiative	Cross-departmental task team of AfDB to support its operational work on Green Growth. Three work-streams: 1) developing conceptual, programmatic and knowledge-based guidance; 2) capacity development; and 3) supporting regional countries in transitioning to a green economy.	All	AfDB	Africa
Green Growth Knowledge Platform	Enhance and expand efforts to identify and address knowledge gaps in green growth theory and practice.	Agriculture; biodiversity; buildings; energy; finance; fisheries; forestry; transport;	GGGI ¹¹² , OECD, UNEP, WB	Global

¹¹² Global Green Growth Institute

Initiative	Aim	Sectors	Partners	Regional coverage
		manufacturing; tourism; waste; water		
Green Growth Best Practices Initiative	Accelerate learning and to inform the design of green growth programmes, by undertaking an analysis of early experiences.	All	CDKN, ECF, GGGI (see website)	Global
Global Green Growth Forum	Platform for dialogue among high-level stakeholders from governments, businesses, investors and international organisations to act together for inclusive green growth.	All	Government, industry, institutions, e.g. OECD, IFC, IDB, etc.	Global
Global Environment Facility (GEF)	Financial instrument providing grants and co-financing to projects in developing countries to support activities related to biodiversity, climate change, international waters, land degradation, and chemicals and waste. Cross cutting issues: results and learning, capacity development	Biodiversity, climate change, chemicals & waste, land degradation, international waters, sustainable mngt of forests	UNDP, UNEP, WB, ADB, AfDB, EBRD, IADB, etc.	Developing countries
World Bank financing instruments (loans)	Support green and education projects to reduce poverty and improve sustainability.	All	World Bank	Developing countries
Technical Assistance projects for inclusive growth and green jobs (ADB)	A TA regional project to improve knowledge and enhance capacity in preparing an adequate skill base to address skill needs for competitiveness in key sectors, including emerging green skills.	Education, sub-sector TVET	ADB	India, Indonesia, Sri Lanka, Vietnam and Uzbekistan
Funds and Technical Assistance for green growth (AfDB)	Several regional funds available to support energy/ environment and education projects to build skills and knowledge	Education, energy, environment	AfDB	African countries
Green Bond Program (AfDB)	The programme facilitates the achievement of the Bank's corporate priority of green growth through the financing of eligible climate change projects.	Climate change	AfDB	African countries

III. Case Studies of Initiatives supporting Green Jobs and Skills

This section provides a brief description of some of the projects carried out to support green jobs and skills. It aims to provide a more empirical and practical view on how the different organisations presented above are involved in the topic. The case studies we have assessed are listed and introduced below:

- ✓ *Capacity Building for Sustainability in Vocational Education and Training (VET) in Egypt, Jordan and Syria.*
- ✓ *Small Developing Island Renewable Energy Knowledge and Transfer Network (DIREKT)*
- ✓ *Green Jobs in Asia in particular Philippines*
- ✓ *Strategies for Green Jobs Creation and Promotion in China*
- ✓ *Free State SME Development Initiative in South Africa*

Capacity Building for Sustainability in VET in Egypt, Jordan and Syria

At the time this GIZ funded project was planned, sustainability strategies increasingly gained significance in the political sphere in the target countries. However, the concrete implementation of processes and actions contributing to sustainability remains a challenge in TVET institutions and the private sector of the region. The main goal of the regional project was to **promote the development and implementation of sustainability strategies by capacitating relevant actors and decision-makers within TVET institutions** and the private sector and promoting networking amongst these.

In particular, the case study focuses on the integration of environmental aspects into the Vocational Training Corporation (VTC) curricula in Jordan. The VTC is the main governmental institution offering vocational training courses responsive to the skills requirements of Jordanian industries. The specific objectives in Jordan were to:

- raise awareness on environmental aspects among VTC teachers and trainees;
- create positive attitudes towards the environment in order to reduce environmental pollution;
- build the capacity of trainees to enable them to deal with workshop wastes in an environmentally safe manner; and
- benefit financially from the workshop remnants by partnering with recycling companies.

As part of the project, GIZ carried out four workshops with 76 participants; printed 600 posters as an awareness raising measure; involved over 6 000 trainees in awareness raising activities on issues and risks related to workshop wastes; and supported the development of a more holistic understanding of “safety and health” courses integrating environmental aspects into their curricula. In addition, the project generated income by selling paper waste and left-over coolant oil to recycling companies.

Small Developing Island Renewable Energy Knowledge and Transfer Network (DIREKT)

Through DIREKT, the European Union aimed to strengthen the science and technology capacity for RE in Small developing islands in Africa, the Caribbean and the Pacific (ACP) through technology transfer, information exchange and networking. This 1.1 million Euro university initiative aims to support Small Island Developing States (SIDS) in the ACP region. SIDS are heavily dependent on the importation of fossil fuels to cover their energy needs; their sustainable development depends on reducing the fuel importation bill and the development and application of renewable energy technologies is the most feasible way to achieve this. In order to support these islands, DIREKT aimed to:

- Strengthen internal science & technology capacity in RE of ACP-SIDS; strengthen relationship among institutions;
- Foster cooperation between participant countries and EU; and
- Contribute to the transfer of research results on key issues in RE by establishing “technology transfer centres”.

The **project is not directly linked to a green jobs initiative** but rather supports skills in a ‘green’ sector indirectly. The DIREKT project’s activities have ranged from capacity building seminars and workshops targeting key and diverse stakeholders, to local, regional and international networking events, to the demonstration of renewable energy technologies in action in the form of pilot projects developed and operationalized in all participating countries, to the identification of strategies for universities to enhance training in research into renewable energy.

Green Jobs in Asia in particular Philippines

The ILO project Green Jobs in Asia assisted five Asian countries (Bangladesh, Indonesia, Nepal, Sri Lanka and the Philippines) in initiating the shift towards low-carbon, environmentally friendly and climate resilient economies. This ILO project aimed at **enhancing capacities from government, workers and employers to undertake transition measures**, and to influence national policies such that they

contribute to an inclusive green growth model. The project used the ILO definition for green jobs.

In the Philippines, the project focused on **sustainable construction and social housing**. The project's goal is to enhance capacities needed to undertake just transition measures including green jobs governance, greening of enterprises and decent work. Key strategies are assistance to policies, research and communication, capacity building, demonstration project, knowledge sharing and assistance to tripartite structure formation. As part of the project, a scoping study was carried out, assessing the green employment potential of different sectors and presenting ways for measuring green jobs.

Strategies for Green Jobs Creation and Promotion in China

The ADB focused on supporting the **development of China's national framework for promoting green jobs and strengthen government capacity**. As the world's second largest economy and with the world's largest population, the People's Republic of China's (PRC's) rapid economic expansion has significant impact on its environment. The government is responding by restructuring its economy and pursuing a green and inclusive growth path. The Chinese government has put emphasis on environmentally sustainable and inclusive growth in the Twelfth Five-Year Plan. China has no direct policy to promote green jobs, but there are some policies committed to energy conservation and energy efficiency that indirectly promote the development of green jobs.

The objective of the ADB's Green Jobs project was to **strengthen capacity of the government and other stakeholders** for promoting and creating green jobs in the PRC and to carry out a comprehensive analysis and development of a preliminary national framework for promoting green jobs. The project was implemented by the Ministry of Human Resources and Social Security. The project provided policy recommendations for promoting and creating green jobs and pro-poor green jobs at the national level, and publications on key TA findings and recommendations.

Free State SME Development Initiative in South Africa

This ILO is part of the Green Jobs Initiative. The project aimed at **creating employment opportunities for disadvantaged populations** through the development of sustainable small businesses in different sectors: Agribusiness, construction, social economy/social enterprise development, tourism and waste recycling (focus in South Africa).

Despite more than a decade of uninterrupted economic growth – until the 2010 financial crisis – the national unemployment rate in South Africa stood at 23.9% in the fourth quarter of 2011. The Free State Province registered the highest unemployment rate of all provinces at 29.4% especially among young people. As such, the overall project objective is to create decent employment opportunities for historically disadvantaged population groups in Free State Province through the development of sustainable small businesses. The overall project outcome is to support 2 000 sustainable community-based small businesses that have created at least 5,000 decent jobs.

Since July 2011 the focus has been on establishing a proper knowledge base – prior to embarking on specific SME interventions – through several research studies. The Free State SME Development Initiative commissioned a study to review the challenges and opportunities for small business development and decent job creation in the waste sector in three selected municipalities in the Free State. The report highlights the vulnerable situation of waste pickers, the important role of buy back centres and make recommendation for better waste management including sorting at source.

1. The Relevance of the National Context

Each of the projects is embedded in its national context, and while projects can be also regional, the local context can largely influence the results and impacts. For example, in the Philippines, the ILO's green jobs project was focused on the construction sector, and one of its main success factors was its alignment with national priorities and initiatives in green housing as well as the link to the existing structures dealing with these topics such as the Green Building Council and the Housing and Urban Development Coordinating Council.

Below we present a short overview of the policy context in the different countries under assessment. Additional information can be found in Annex B: Case Studies.

Table 6 – Key strategic documents in the case study countries

Country	Key documents	Support
Jordan	Jordan's National Agenda (2006-2015) ¹¹³ Green Economy Strategy 2010- 2012	UNEP GGGI Korea International Cooperation Agency GIZ

¹¹³ [National Agenda 2006-2015: The Jordan we strive for](#)

Country	Key documents	Support
Barbados	Growth and Development Strategy 2013-2020 ¹¹⁴ Human Resource Development Strategy 2011-2016 ¹¹⁵	UNEP European Commission
Philippines	Development Plan 2011-2016 ¹¹⁶ Labour & Employment plan 2011 – 2016 - Inclusive Growth through Decent and Productive Work ¹¹⁷	ILO
China	Twelfth Five-Year Plan which emphasises environmentally sustainable and inclusive growth	ILO ADB
South Africa	National Strategy for Sustainable Development and Action Plan (2011 – 2014) ¹¹⁸ Green Economy Accord New Growth Pact	ILO

All countries assessed have medium term strategies related to development and all receive or have received support from international organisations in green growth topics. However, only Jordan and South Africa have dedicated strategies for green economy and green growth; while Barbados and the Philippines have plans dealing with human resources and employment which make a direct link to inclusive green growth. For example, Barbados' Growth and Development Strategy mentions the transition to a green economy, while Barbados' Human Resource Development Strategy 2011-2016 focuses on developing national, institutional and human capacity for sustainable growth.

The availability of such strategies and plans can validate and support development projects – or as in the case of China, the lack of such plans and strategies can motivate the implementation of such a project.

2. Type of Initiatives

There are several ways of supporting green jobs and green skills. Based on the case studies assessed, the following typology has been established to classify the development projects dealing with green jobs and skills:

- **Top-down green jobs/skills project** – These projects focus on supporting the development of national or regional strategies for the promotion of green

¹¹⁴ Barbados' Ministry of Finance and Economic Affairs (2013) '[Barbados' Growth and Development Strategy 2013-2020](#)'

¹¹⁵ Barbados' Ministry of Education and Human Resource Development & Ministry of Labour (2010), "[Barbados Human Resource Development Strategy 2011-2016: Developing National, Institutional and Human Capacity for Sustainable Growth](#)"

¹¹⁶ Government of the Philippines (2011) "[Philippine Development Plan 2011-2016](#)"

¹¹⁷ Government of the Philippines (2011) "[The Philippine Labour & Employment plan 2011 – 2016 - Inclusive Growth through Decent and Productive Work](#)"

¹¹⁸ https://www.environment.gov.za/sites/default/files/docs/sustainabledevelopment_actionplan_strategy.pdf

skills and jobs. This is particularly important for those countries where there is limited information on the topic and/or no framework to support green jobs and skills. Top down projects would include, for example, the development of studies assessing green jobs potential in different sectors and support to implement national policies/strategies for green jobs and skills.

- **Bottom-up green jobs/skills project** – Their main aim is to create green jobs and/or develop green skills in a particular sector and/or in partnership with local stakeholders, and in line with local initiatives and activities.
- **Mainstreaming green jobs and skills** – Projects that mainstream green jobs and skills are those that focus on employment and education but include an environmental component or vice versa. These are projects that support green jobs and skills directly and are linked to green growth/ green economy strategies and initiatives.
- **Indirect approach** – These are projects that support green jobs and skills indirectly. This means that, in its conception, the project did not consider green jobs and skills explicitly as a component or driver.

The table below shows some examples of these approaches and how they were applied in our case studies.

Table 7 Approaches towards green jobs in projects

Approach	Project & Description
Top-down	Strategies for Green Jobs Creation and Promotion in China (ADB) – This project aims to support the government in the development of a national framework for promoting green jobs.
Bottom-up	Green Jobs in Asia (ILO) – This project aims to mainstream green jobs and green skills within the different sectors, without creating a national strategy but by incorporating green practices in the sectoral agencies such as the National Housing Association.
Mainstreaming / Indirect	<p>Free State SME Development Initiative in South Africa (ILO) – This project aims to create decent employment opportunities for historically disadvantaged population groups while devoting particular attention to the promotion of green jobs. While the main focus is on minority groups and SME development, the concept of green jobs is explicitly supported.</p> <p>Integrating environmental aspects into VTC curricula in Jordan (GIZ) – Through this project GIZ focuses on TVET, following Germany's national strategy, and aims to integrate green skills in the curricula and at the same time 'green' the sector by e.g. recycling waste paper material from trainings and workshops.</p>
Indirect	DIREKT (EU) – This project deals with green skills indirectly as it provides training and technology transfer in the field of renewable energies. However, there is no direct link to green jobs in the project documentation.

Additional typologies for green jobs and skills projects have been found in literature¹¹⁹, either directly or indirectly, but mostly revolve around: 1) new jobs, new skills vs. 2) greening existing jobs, greening existing skills. An alternative classification is done regarding the players involved in the projects, differentiating between: 1) enterprise, 2) industry, 3) government, 4) educational institutions and 5) Non-state actors and international development partners.

3. The Results and Impact of this Initiatives

The impact of the different initiatives is of course linked to the objectives and the approach taken. As such, not all initiatives lead directly to an increase in green jobs and skills. Mostly, impacts include:

- The integration of environmental aspects in the curricula;
- The training of instructors and trainees;
- Awareness raising regarding environmental aspects;
- Demonstration projects (particularly when working on a specific sector);
- Involvement of relevant stakeholders (including government and/or education institutions);
- Inclusion of the topic in the political agenda.

For example, the ‘Strategies for Green Jobs Creation and Promotion in China’ project from the ADB generated the **first definition of green jobs in the national context**, and this definition will be further discussed and debated at the national level, to achieve consensus and develop a strategy for moving forward. In capacity building projects, the amount of instructors and trainees is usually recorded. The GIZ project ‘Integrating environmental aspects into VTC curricula in Jordan’ involved the participation from 400 VTC instructors and 6000 trainees while the EU project ‘DIREKT’ trained around 260 in various fields of renewable energy.

However, **none of the case studies measured the impact on green job creation**. This is partially due to the fact that green jobs is an emerging topic in the political agendas of developing worlds and as such there is still a long way to go before these results can be measured.

Some of the assessed projects, however, **developed baseline analysis or created a knowledge base that will serve to measure results in the future**. For example, the ILO project in South Africa carried out sector studies of employment creation potential completed in agribusiness, construction, tourism, waste recycling and the social economy; the ILO project in Philippines carried out a mapping study for green jobs to check which sectors could be involved and assess potential pilot partners; and the ADB project in China included reports on pro-poor green jobs policies,

¹¹⁹ ILO (2011). [Skills for Green Jobs. A Global Overview. Synthesis Report Based on 21 Country Studies](#); ILO (2010). [Skills for Green Jobs in the US.](#); CEDEFOP (2010). [Skills for Green Jobs.](#)

assessment of implications for skills training and retraining and capacity building, and green jobs creation two pilot provinces. These sort of studies are a stepping stone towards mainstreaming green jobs in developing countries.

4. Key Success Factors and Main Challenges

This section focuses on the key success factors and main challenges identified while assessing the case studies. However, given the differences in scope and objectives of the projects under assessment, the findings are quite general.

Key Success Factors

Interviewees highlighted the following key success factors in the implementation of their projects:

- **Alignment with national priorities** – Selecting a sector that is already a national priority, high in the political agenda, gives the project the momentum needed to succeed. Furthermore, this usually implies there is an existing structure to support the project.
- **Knowledgeable and involved partners** – While the international support of the donor or financial institution is very important, the local presence of partners who are involved in the day-to-day activities is key. Particularly, if projects count with the support of local government agencies, this can provide continuity to the project. For example, the project in the Philippines included the involvement of the National Housing Authority who is technically capable and has the building sector as their mandate.
- **Actively engaged staff** – Ideally staff involved in the project should be actively engaged or at least informed and formally approve the project. This is key i.e. for knowledge transfer projects and including environmental aspects in existing TVET curricula.
- **Knowledge sharing platforms and/or participatory approach** – Regional projects highlighted the role of knowledge sharing portals which can strengthen collaboration and provide support and guidance during the implementation process. In addition, communication and participation within institutions in the implementation process are valuable for the sustainability of the projects.
- **Running pilots** – Initiatives used demonstration projects or used one sector as a pilot in order to introduce new processes and structures in a non-threatening way. Further this can be done where they have higher chances of succeeding, which can then facilitate the uptake by other sectors.
- **Flexible approach** – Flexibility is key. The project can be delayed for a number of reasons, or the initial objectives could have been too ambitious.

The fact that both the team and the financial institution are flexible can help overcome such difficulties.

Lessons learnt from the GIZ project

‘Capacity building for Sustainability in VET’ in the Middle and Near East

The aim of the regional project was to promote the development and implementation of sustainability strategies by building capacity for relevant actors and decision makers and promoting networking among them. The project used a Human Capacity Development (HCD) Approach to support and shape both individual learning process and networking of people. A report on the project provided the following key lessons learnt:

- Management support is the most essential ingredient for institutionalisation.
- Involving government agencies can provide valuable support to the implementation of project activities and institutional change.
- All stakeholders should be aware of the process and persons involved should be equipped with the right skills.
- Sharing and networking among participants contributes positively to facilitating learning and initiating institutional change.
- Whether or not project participants were able to act as multipliers or change agents within their institutions depends significantly on their roles and functions within the institutions. Some mechanisms identified for anchoring efforts in institutional structures include: forming units representing the project within their institution and establishing steering committees.
- Adequate preparation of all stages of the project is essential for successful, holistic and sustainable implementation.
- Addressing potential attitudinal blockages at an early stage through sensitisation and awareness raising initiatives was helpful for overcoming barriers.
- Involving the private sector was only successful in those cases where private sector representatives considered specific competences or improved qualifications economically relevant or advantageous.

[Impact and Good Practices of Human Capacity Development \(HCD\) in the Organisational Context - Experiences from two regional projects in the MENA region \(GIZ, 2013\)](#)

Main challenges

On the other hand, some of the challenges mentioned are listed below:

- **Green economy and green jobs are emerging priorities in developing countries** – These topics – though important – are just emerging in the political agendas of many developing countries. As such, it remains a new area where in-depth research, analysis (including job forecasting), and consultations are needed.
- **Lack of standardized occupational classifications for green jobs and of expertise in the topic in general** – In line with the previous challenge, given the novelty of the topic, there is a lack of expertise on green jobs. For example, in the MENA region, there is limited know-how particularly with respect to designing and developing learning materials on environmental issues. Furthermore, the definitions and classifications regarding green jobs within the national contexts are still in debate or not there at all. This presents an opportunity for governments to develop an official database concerned with green industries / green jobs. An overarching policy could ensure consistency and standardisation e.g. on measurements for green jobs.
- **Limited pool of local experts** - The limited amount of local experts – given the fact that green jobs is emerging concept – can be one of the causes for start-up delays related to recruitment. However, local core team members are key as they can deepen the engagement and dialogue with local partners and stakeholders.
- **Time constraints** - The timeframe of the projects is usually too short and/or projects are initially too ambitious. Delays are often related to contracting/procurement. E.g. the project in the Philippines and the project in China. Follow-up projects and/or time extensions could address this.
- **Change of key personnel affects continuity of the projects** – Key staff involved in the project are often moved to different positions during the project (generating delays and loss of information) or get detached from the project once it is finished.
- **Lack of top level/political support** – Lack of support often results in insufficient (human/financial) resources.

Hampering Factors to ADB's project

'Strategies for Green Jobs Creation and Promotion' in China

As the world's second largest economy and with the world's largest population, the People's Republic of China's (PRC's) rapid economic expansion has significant impact on its environment. The government is responding by restructuring its economy and pursuing a green and inclusive growth path. At the same time, the government recognized that there is an urgent need to develop strategies to reconcile growth and environment, create green jobs and an adequate human resource base for emerging green sectors. In support of the PRC's development agenda, the Ministry of Human Resources and Social Security (MOHRSS), and the ADB initiated this technical assistance to formulate green jobs creation and promotion strategies, including introducing the concept and raising awareness of green jobs among the government and the public through advocacy initiatives, conducting strategic research on green jobs to inform policies and strategies, and encouraging innovation in green sectors to spur green employment and growth. However, the project run into the following challenges:

- **Lack of standardized occupational classifications for green jobs:** A key challenge during the project implementation; however, as green industries grow, this presents an opportunity for the National Bureau of Statistics and MOHRSS to develop an official industry database concerned with green industries. The categorization of green industries would be a valuable planning tool, particularly aligning labour market and skills training with high growth strategic industries.
- **Limited time:** The consultants prepared recommendations for establishment of an envisaged green jobs knowledge hub, but there was not sufficient time to carry this out (however MOHRSS indicated interest to further collaborate with ADB to establish a green jobs knowledge hub). The project was extended 12 months to allow completion of data collection and analysis.
- **Limited pool of qualified national consultants:** Given that green jobs is an emerging concept in the region, there is a limited amount of qualified consultants. This led to start-up delays in recruitment of national consultants.

The agenda of green jobs is an important and emerging priority for the PRC, yet it is a new area where in-depth research, analysis (including job forecasting), and consultations are needed. A longer time period for implementation for the TA would have allowed for additional analysis, compilation of a policy note, establishment of green jobs hub, and further consultations with policy makers to review the findings and recommendations in order to develop a national framework for promoting green jobs. Future TA projects on green jobs may find it useful to include a resident mission staff as a core team member to deepen the technical engagement and dialogue.

Recommendations

This section provides information on the way forward regarding support for green jobs. Recommendations are provided at three levels: international, national and operational. This includes recommendations on how to design a high level green jobs strategy, how to mainstream green jobs into national policies as well as an operational checklist to implement initiatives supporting green jobs.

I. Key Findings

Based on the analysis provided in the previous sections, this section provides recommendations at three levels:

- **International level** – recommendations for international organisations working on the topics of green economy/ green growth and green jobs and skills (including the 10 organisations analysed in this report). These recommendations focus on how to design a successful high level strategy on green jobs and skills, i.e. what elements should be included and under which conditions.
- **National level** – these are recommendations for countries working with these international organisations who would like to further promote green jobs and skills at the national level. The main issue to be addressed is how to integrate these new concepts in new and existing national policies and strategies.
- **Operational level** – these are recommendations for project managers and coordinators on how best to incorporate green jobs and skills aspects at the project level. Recommendations are in the form of a checklist.

The image below highlights some of the main recommendations to take into account for the different levels.

Figure Erreur ! Il n'y a pas de texte répondant à ce style dans ce document.7 – Recommendations to support green jobs and skills at different levels

Recommendations		
Adopt working definition for green jobs - specifying target sectors		
International	National	Operational
<ul style="list-style-type: none"> •Frame green jobs & skills within mission & priorities of institution •List instruments offered (i.e. loans, TA, grants) and how they can help •Guidance on how to assess size & scope of green jobs •Suggest enabling factors & support knowledge sharing 	<ul style="list-style-type: none"> •THINK •PLAN: Incorporate green jobs/skills in national vision •DO: Align employment and education policies and initiatives with new vision •CHECK: Baseline and monitoring for green jobs & assessing impact of initiatives 	<ul style="list-style-type: none"> •Identify project •Formulate project •Secure commitment •Planning & implementation •Monitoring & reporting

II. Recommendations at international level

This section is based on the review of the literature as well as of the strategic approaches and programmes of the key international players in this field. Recommendations at international level are classified into 2 groups, (1) key observations related to green jobs and skills and (2) concrete recommendations on how to design a green jobs and skills strategy.

1. Key observations related to green jobs and skills

Clearly framing and defining green jobs and skills is important, how to define them is less

The reviewed literature showed that green jobs and skills are relatively new concepts, existing only since late 2000, with multiple definitions and interpretations. The definitions are evolving over time and are interpreted differently in various local contexts but, overall, they converge around the same idea, i.e. **jobs and skills which produce green goods and services, and jobs and skills where the production or service process is green.**

When an international organisation is designing a green jobs strategy, **it is important to clearly specify the objectives and target group (sectors, activities) of their green jobs and skills strategy.** As such, a working definition of green jobs and skills that is adequate and workable for the institution in question can be set. At

the international level, it is important to increase coordination among the different stakeholders and initiatives in order to reach consensus.

It would be more efficient to integrate education/employment with climate and environmental issues in a global strategy, adopting a specific green jobs strategy would take it even a step further

Most of the organisations already have a green growth or green economy strategy or programme, which promotes green jobs and skills. **The organisations have not yet adopted a specific green jobs strategy to promote green jobs and skills in practice.** This has been apparent from the analysis of the 10 institutions, as only ILO/UNEP had an explicit green jobs programme. The other institutions, in particular the six development banks, treated environment and climate topics separately from education and employment. Even though these themes were dealt with separately, at the project level the two themes were to some extent linked due to **the mainstreaming of environmental concerns into employment/ education projects and vice versa.**

Nevertheless, **if the goal of the institution is to strongly advance green jobs and skills at the strategic level (as it is for ILO), a clear and dedicated green jobs theme would have to be integrated into existing core priorities and practices.** However, it should not be forgotten that green jobs and skills are still emerging concepts, hence it might take time before they are fully integrated into the core strategies and policies of international organisations.

Social protection issues can go hand in hand with environmental objectives

As could be seen from the analysis of the 10 institutions, most, if not all, had clear poverty reduction and 'green' economic development goals to help developing countries as their main mission. In fact **combining social and environmental objectives is key for green growth.** ILO's Decent Work programme is a clear example of this. In general, since sustainable development has been on the agenda, **initiatives do address the economic, environmental and social benefits,** and try to maximize the synergies. Approaches include drafting a clear green jobs strategy by framing green jobs 'decent' or mainstreaming green jobs, by integrating previously separate topics of environment and employment on the project level (as has been described in detail in Chapter 3).

A dedicated financing instrument for green jobs and skills is not needed per se, existing financial instruments can be mobilised

The findings show that **green jobs and skills can be to some extent promoted without any explicit financing instrument by using existing financial tools**. The analysis of six development banks demonstrate that while none of these six banks had a dedicated green jobs and skills funding programme, they all contributed to the development of green jobs and skills to some extent using their existing financial tools. The reason behind it is the fact that almost all of them have green growth strategies, and their combination with the overall poverty reduction mission (including education and employment themes) by default contributes to green jobs and skills objectives. Even without a direct link to green growth or economy (such as GIZ), as long as the institution has employment/ education programmes, it can effectively promote green jobs and skills as many existing important sectors of the economy will be affected by climate change. However, in order to help partner countries work on this topic it is important to assist them in formulating and implementing the projects in such a way that one of the project components is capacity building or technical assistance/ training. Also training and technical assistance should be provided to financial intermediaries to be aware of these issues when following up with their beneficiaries.

Nevertheless, **if a dedicated financing instrument for green jobs and skills was created, it would directly and explicitly contribute to the promotion of green jobs and skills**, and the effect might be stronger than without such a dedicated financing instrument. An example of such an instrument could be a dedicated green jobs fund (see next section for further details). Since none of the reviewed banks had such an instrument, it is at this stage difficult to compare the effectiveness in creating green jobs and skills through dedicated financing instruments and through non-direct financing instruments, as currently employed. Even if the banks had these instruments, it would be difficult to assess their effectiveness due to the lack of and inconsistency in monitoring. These financing instruments include technical assistance, grants and loans. In case of loans, green jobs and skills were often created/ supported by mainstreaming employment/ skills aspects such as training, capacity building into energy/ environmental sectors or indirectly, through capacity building programmes relevant to these green sectors (examples and details on programmes and projects were discussed in chapter 3).

2. How to design a good green jobs and skills strategy

It is clear that certain elements should be included in a good green jobs and skills strategy. These elements are listed below:

Clarify and frame the concept of green jobs and skills within the overall mission and priorities of the institution

There must be a consistency between the existing core principles and values, core strategies and programmes of the institution and the new green jobs and skills strategy. The green jobs definition is not that relevant by itself (i.e. how you define green jobs) as long as there is a working definition. This should include a clear link with the social aspects.

Make it clear why green jobs and skills are important

International institutions need to provide a rationale for giving importance to green jobs and skills. As mentioned in previous chapters, **green jobs and skills are essential for the implementation of public environmental objectives and for the transition to a green economy.** Organisations should elaborate on what implications green jobs and skills have for the different sectors and why they are important for developing countries in particular. It is also very important to highlight the potential benefits of such a green jobs and skills strategies, and to focus on the synergies with existing strategies and programmes.

Suggest enabling factors for green jobs and skills and support knowledge sharing

The strategy should outline recommendations that can be applied at national level, provide evidence of success stories & best practices and stress that social dialogue is important. Different initiatives already provide information on these issues. The Green Growth Best Practices¹²⁰ network is a global example of such an initiative, aiming to advance understanding in the emerging field of green growth.

EuropeAid, for example, developed a Mainstreaming Toolbox within the capacity4dev.eu programme composed of three parts:

- Guidelines on the integration of environment, climate change and biodiversity in development cooperation.¹²¹ These guidelines advice the EC staff and their partners on how to integrate environment and climate change into the different stages of the cycle of operations – into multi-annual programming (via Country and Regional Environmental Profiles), in sector policy support programmes, in general budget support, and in projects. Tools include

¹²⁰ www.ggbp.org

¹²¹ <http://capacity4dev.ec.europa.eu/public-environment-climate/document/2011-final-draft-revised-guidelines-integration-environment-and-climate-change-development>

Country Environmental Profiles, Sustainability Impact Assessments, Strategic Environmental Assessment, and Climate Risk Assessment.

- Sectoral guidance notes addressing specific entry points for sectors of our cooperation (private sector, health, governance etc.). This also includes Sector Indicator Guidance for Programming.¹²² The aim of this is to support Delegations by providing a menu of options of key indicators to draw from as they are developing their Programming.
- Case studies on climate change, environment, biodiversity and green economy.

This toolbox helps identify the entry points for mainstreaming and the tools to integrate environment, climate change and biodiversity. It also provides guidance to upgrade the programmes towards green economy.¹²³ As part of this 'toolbox', there is a training course organised for the colleagues from EU delegations and headquarters involved in environment and climate relevant sectors (it is also open to a limited number of government officials and in-country stakeholders in developing countries).¹²⁴

What can be seen from this initiative is that the focus is on environmental sustainability rather than green jobs. Hence further tools need to be developed or existing tools adjusted in order to better mainstream green jobs and skills.

Be very transparent regarding the measures and instruments offered

Whether there are dedicated tools or not for green jobs, **organisations should list their initiatives and instruments clearly and in a transparent way.** This includes technical cooperation programmes and funding programmes (including loans, grants and TA). The instruments should be presented with a description and an explanation on how they can be used by interested stakeholders.

For example, IDB provides the following instruments:

- Financial instruments – rates, loans, grants, guarantees, equity investments, technical cooperation, financing solutions, funds under administration,
- Knowledge generation, and
- Project preparation facilities.

¹²² <http://capacity4dev.ec.europa.eu/public-environment-climate/minisite/2-tools-and-methods/sector-indicator-guidance-programming>

¹²³ http://ec.europa.eu/europeaid/aggregator/sources/238_en

¹²⁴ <http://capacity4dev.ec.europa.eu/public-environment-climate/minisite/3-eu-trainings/training-environment-and-climate-change-development-cooperation>

Give guidance on how to assess the size and scope of green jobs in an economy/ sector

The strategy should also include monitoring and evaluation tools. Chapter 2 outlined the key tools/ methods on how to measure green jobs. At the project level, the most important is the design and use of indicators. Green jobs indicators are important and should be included in any good green jobs strategy. These indicators usually relate to the number of people employed/ trained in 'green' sectors.

III. Recommendations at national level

This set of recommendations is targeted to policy makers at national level in developing countries. As could be seen from the review of five case studies, supported by evidence from the literature, green growth, green economy and green jobs and skills are not fully understood or integrated into the policies and strategies at the national level in developing countries. Many such countries are still dealing with higher priorities, such as reduction of poverty and securing food and employment, rather than focusing on improving energy efficiency, reducing CO₂ or investing in renewable energies. These are often seen as "luxury" goods and services, nevertheless there are public bodies and organisations as well as industry (the frontrunners) in these countries which are actively involved in promoting the transition to a green economy, and as such indirectly promoting green jobs and skills.

Developing countries are interested – to some extent (varies per country and current government) – on the topic, but often political will at the highest levels and/ or educated labour force is lacking. In many cases, developing countries have limited environmental/ energy policy/ targets or legislation in place, and often it is not enforced. Sometimes, there are national funding programmes in place to promote environment/ energy objectives, but these are not always operating, or operating sub-optimally. For example, in Jordan, there is a Jordan Environment Fund (financed from selling carbon credits from Clean Development Mechanism projects and fines for environmental violations) and Jordan Renewable Energy and Energy Efficiency Fund (financed from domestic and donor resources, including AFD), both set up and managed by the Government but not operating currently due to a bottleneck in its administration as well as little financial resources.¹²⁵

¹²⁵ AMEC and Triple E Consulting (2014), Financial Mechanisms for Industrial Resource Efficiency, project for the World Bank

International financial institutions and development banks provide funding through their programmes (loans, grants, technical assistance) to support capacity building and green sectors, and as such creating green jobs and skills; however, the green agenda is still relatively new and needs more time to be institutionalised in national agenda and priorities. The case studies selected in this study could be seen as best practices for green jobs and skills, and as such other programmes/ countries can learn from them.

A key finding in our study is the **need for policy integration and co-ordination**. To date, there is evidence of fragmentation, rooted in the resistance and uncertainty about environmental regulations and policies, as well as in the inaccurate definitions of green economy and growth, which hinders the evaluation of jobs/ skills needs. There is also enduring uncertainty around mechanisms and measurements for skill development, mainly the acquisition of skills in informal sectors.

How to successfully integrate green jobs and skills into national strategies and programmes

There are in general four ways how a country can promote green jobs and skills at the national level:

- **Top down approach** – by designing a high level strategy on green jobs and skills;
- **Bottom up approach** – by focusing on local level initiatives without having an explicit high level strategy on green jobs and skills (green growth/ economy strategy should be there)¹²⁶;
- **Mainstreaming** – by mainstreaming employment/ education aspects into green policies and vice versa;
- **Indirectly** – by not creating any link to green jobs, and let them happen indirectly through e.g. capacity building, education and training programmes (in e.g. environment/ energy sectors).

In order to make a choice which approach to adopt, it is necessary that a country has a good understanding of green jobs within its national context. . The following section focuses on the ‘Think’, ‘Plan’, ‘Do’ and ‘Check’ stages of setting a national green jobs agenda and aims to provide a brief overview of some key steps/ considerations that should be considered. In developing countries, most of the effort is placed in the first stages of the process. In particular, for those countries which already include environmental concerns in the agenda, but where targets are still under discussion,

¹²⁶ Support is given to local initiatives and programmes, there is no national strategy. Green jobs and skills are created bottom-up.

the key stages are planning and implementing economic, environmental and social objectives.

Figure 8 – Setting a national agenda for green jobs and skills



1. Think

As a first step in the THINK stage, it is critical to share a good understanding of the environmental, climate and energy needs as well as of the long term and medium term development scenarios for the country. At that stage, we can have meetings between private think tanks and public agencies.

How to set a national agenda promoting green jobs and skills – Thinking

Ideally at this stage, the following should be considered **to set a national agenda promoting green jobs and skills**:

- 1. Ensure that there is a medium/long term development scenario.** In order to incorporate green jobs in the national agenda, certain aspects must be already present in the medium/long term development scenarios. A country must have an interest to achieve green growth, even if this is not yet explicit.
- 2. Promote discussion among stakeholders** – Before planning, it is important to involve the relevant stakeholders (including government, industry and civil society) and secure their support when possible. This will facilitate the process in the next steps.

2. Plan

At the PLAN stage, governments discuss and decide arbitration between short-term interests, social (medium-term interests) and long-term environmental interests. A medium to long term vision of where the country wants to be should be developed. The vision should be linked to the priorities taking into account socio-economic parameters. This will allow for a clear idea of what is practically feasible. Once the scoping/vision and priorities are dealt with, the link to jobs and skills can be made.

How to set a national agenda promoting green jobs and skills – Planning

Ideally at this stage, the following should be considered **to set a national agenda promoting green jobs and skills**:

3. Incorporate green growth or green economy concepts in national visions -

The first step acknowledges the need for sustainable and inclusive growth in the country's vision. This step is relevant for all four approaches listed above.

4. Develop a scoping study, assessing the environmental policies as well as the employment and training policies and their potential impacts. This will serve as a basis to identify the relevant sectors for green jobs and skills at the national level as well as vulnerable sectors where jobs might be lost (e.g. brown sectors). Moreover, the review can identify entry points in these policies where employment and education opportunities can be optimised (except for environmental education).

3. Do

The next stage is to DO. In this stage – after stocktaking - environmental, social and economic objectives should be set and linked to employment and education policy in order to promote green jobs and skills. A good inventory of the labour market and the priority sectors as defined in the scoping and vision document are the basis. Based on these results, a country can implement a whole range of educational and training processes in line with the identified gaps and needs. Local/ national authorities should involve the private sector and the educational sector to set up common programmes. The idea is that the future investment plans of these private companies are going hand in hand with public educational programs in the short, medium and long term and that education programmes are aligned with industry needs. Some lessons can be learned from the oil and gas sector, where the shortage of engineering skills led the industry to get much more involved with educational facilities (secondary and tertiary education) by sponsoring some programmes and raising awareness among students. For “green” industry, attracting students and

graduates seems an easier task due to the current shift towards green economy and growth. The industry should make itself known to students, and motivate them to take subjects that are relevant to them – these can be also general scientific and natural sciences, not only specialised environment or sustainable energy subjects. Potential links to foreign programmes and trainers is also advisable.

How to implement an operational framework promoting green jobs and skills – Doing

Ideally at this stage, the following should be considered **to implement an operational framework promoting green jobs and skills:**

5. Definition of green jobs adapted to the national context - The first step is to adopt a working definition for green jobs that takes into account the national context (e.g. involved sectors) to frame the discussion. This can be done by for example a scoping study to identify relevant sectors and activities for green jobs in the national context and then discuss these with stakeholders. This will be the basis for the next steps.

6. Align education and employment policies with findings – Review policies for the sectors affected and policy provide recommendations based on the gaps found. As part of this step, different alternatives should be considered such as i.e. upgrading of skills, suggesting potential curriculum changes, setting up a green job strategy (top-down approach), etc. Aim for synergies and limit amount of additional work. For example, there might be some green programmes that can be adapted to incorporate employment and skills aspects better (in case of mainstreaming); guidance on integrating employment and skills considerations into local green programmes can be provided (in case of bottom-up approach); existing social funds or educational curriculum might be adapted (in case of mainstreaming) or capacity building programmes which affect green sectors (indirect approach).

7. Develop green job initiatives – In line with the recommendations, public and private initiatives supporting green jobs should be planned and implemented. Ideally, you involve the different stakeholders in the planning exercise. Examples of potential policy measures / initiatives to support green jobs directly (or indirectly if applied to other ‘green’ sectors) are presented in the figure below.

Regulation	Financial incentives	Information-based instruments
Standards & certificates	(Soft) loans	Capacity building
Regulations for 'green' sectors	Grants	Knowledge sharing
	Technical assistance	Awareness raising

Private initiatives supporting green jobs can be for example foundations focused on supporting local development in developing countries, which include environmental or energy sectors. Hence these are not specific green jobs initiatives but indirectly contribute to it. Some examples of such foundations are Oxfam, Hewlett Foundation, Open Society Foundation, the Ford Foundation or GROFIN. This project did not investigate to which extent development banks can support these private initiatives.

8. Promote success stories – This could be done through a customized outreach programme for specific stakeholders or a simple publicity campaign, targeted on those sectors and companies which appear to have the largest potential for green jobs creation, to raise awareness that green jobs and skills are needed for a transition to a green and competitive economy.

9. Set up a dedicated green jobs fund - in case a country wants to set up a dedicated green jobs and skills fund (top-down approach), it should take the following into account: it will need tailored business support, should be a mix of loans and grants (not only grants in order to encourage the beneficiary to use the money wisely, not only loans as some potential beneficiaries need an extra support in terms of grants or are hesitant to take only a loan), have clearly defined criteria for giving financial support, and good applicant selection process.

The boxes below show concrete examples of how to support green jobs using the bottom-up and mainstreaming approaches.

Examples of bottom-up and mainstreaming approaches

Bottom-up approach: Guidance for local strategies	Mainstreaming
<p>Integrating employment & skills into local adaptation plans</p> <ul style="list-style-type: none"> • <i>Step 1: Preparing the ground for adaptation</i> • <i>Step 2: Assessing risks and vulnerabilities to climate change (incorporate jobs aspects)</i> <ul style="list-style-type: none"> • <i>Are there specific economic activities at risk</i> 	<p>Mainstreaming employment aspects into green policies</p> <ul style="list-style-type: none"> • <i>Identify a green funding programme with opportunity for creating jobs and skills</i> • <i>Identify and apply best practices of projects in this programme that consider skills and jobs</i>

Bottom-up approach: Guidance for local strategies	Mainstreaming
<p><i>of climate change? If so, what are the employment implications within those sectors? Do these implications for employment make the risk more significant? What additional skills would be needed in order to take advantage of that opportunity?</i></p> <ul style="list-style-type: none"> • Step 3: Identifying adaptation options • Step 4: Assessing adaptation options (incorporate jobs aspects) <ul style="list-style-type: none"> • <i>Will the adaptation option help protect jobs in a specific sector or service? Will the adaptation option help create jobs in a new area? Are new skills required in order to fully develop this adaptation option?</i> • Step 5: Implementation • Step 6: Monitoring and evaluation (M&E) 	<ul style="list-style-type: none"> • <i>Adapt the guidelines for this programme to better consider the skills and jobs aspects, e.g.</i> <ul style="list-style-type: none"> • <i>use of indicators – number of jobs created, number of people trained, etc.</i> • <i>promotion of specific sectors/ activities relevant to jobs and skills (e.g. capacity building)</i> • <i>Integrate into a programme education and training aspects by linking it to universities, apprenticeships</i> <p>Mainstreaming green aspects into labour policies</p> <ul style="list-style-type: none"> • <i>Social funds and programmes (education related)</i> <ul style="list-style-type: none"> • <i>Adapt the guidelines to integrate green aspects</i> • <i>Organise workshops/ meetings to educate education bodies about green economy</i> • <i>Educational curriculum – incorporate subjects on green economy, climate change, environmental sciences into the school/ university curriculum</i>

4. Check

The final stage is to CHECK. This stage should focus on assessing the effect of the different measures and initiatives. In order to do this, green jobs should be incorporated in the national statistical reporting. This will allow an evaluation of the programmes relevant to green jobs in terms of employment creation. Further, having a baseline for green jobs at the national (or sectoral level) will also allow to monitor progress on green jobs. Based on this, policies and measures can be adapted to achieve better results, making use again of the ‘Think, Plan, Do, Check’ virtuous circle.

How to check and evaluate green jobs and skills in the national agenda - Checking

Ideally at this stage the following should be considered **to check and evaluate green jobs and skills in the national agenda:**

- 10. Evaluate the effectiveness and efficiency of the programmes** relevant to green jobs – Conduct an evaluation study of the relevant programmes, focusing on impacts, efficiency, outputs, lessons learned.

11. Develop measurement framework for green jobs – According to the established definition and following the existing employment reporting processes, a framework should be developed to measure green jobs. It is key to be aligned with government processes and agencies, as well as with the current national statistical practices, in order to avoid doubled efforts and to make sure that such a framework can be easily streamlined and taken up by the government.

12. Develop the baseline for green jobs – A first measurement of green jobs should be carried out in order to be used as the baseline scenario. This will serve to compare with additional measurements made later on and assess the progress in matter of green jobs.

13. Monitoring green jobs – In order to assess the progress of the different environmental policies in the social domain, green jobs should be measured frequently.

IV. Recommendations at the operational level

This section aims at providing recommendations at the operational level through a checklist for project developers. It also provides a short list of projects to be supported to promote green jobs and skills.

1. Operational checklist

The checklist below serves as a guide for project managers/ coordinators for the identification and implementation of projects supporting green jobs and skills. It focuses on key steps, relevant for both the development bank or other international institution and the implementing organisations on how to set up and implement a green jobs and skills projects. The organisations responsible for implementation can be governments, local authorities, local banks, universities, engineering companies, etc. The checklist involves five main steps, starting from project identification to monitoring and reporting, each of which includes several distinct activities. Because no two projects are exactly alike, each project should work through the process in a way that suits its specific circumstances while ensuring that the process is collaborative and consultative. The financial institution should take the lead in the project identification and formulation and then later monitoring, in coordination with the implementing organisation (or national authority), while the implementing organisation has a lead in planning and implementation of the project. The implementing organisation will need to work together with other local partners (e.g. utilities, NGOs) and initiatives to secure sufficient commitment.

Table 8 – Operational checklist

Steps	Activities	To be carried out by
1. Project identification	<ul style="list-style-type: none"> • <i>Identify relevant sectors to green jobs and select your target sector (through e.g. a mapping study – as has been the case for Philippines ILO project)</i> • <i>Identify relevant stakeholders and select your target group (Who are the key local institutions – public and private – that should be involved? In case of loans, who are the borrowers?)</i> • <i>Identify and assess problem (What are the key issues related to green jobs and skills? How serious are they?) and outline objectives (including green jobs and skills)</i> • <i>Select strategy/plan to attain green jobs and skills – these need to be consistent with broader development or business plans.</i> • <i>Check the employment policy context</i> • <i>Do we have an explicit debate between social, economic and environmental objectives? Has it been already organised?</i> • <i>At this stage it's important to look for synergies with existing initiatives and policies to increase public acceptance and to make sure the project can be internalized by the local/national society.</i> 	Financial institution in consultation with local authorities
2. Project formulation	<ul style="list-style-type: none"> • <i>Building a logical framework – i.e. an intervention logic or objective tree stating how change will happen (cause-effect).</i> • <i>Setting the objectives, outputs and activities in such a way that they would stimulate better green jobs/ skills. Moreover, make sure social aspects and disadvantaged population groups are taken into account. Set general objectives (overall aim, vision), specific objectives (concrete tasks) and operational objectives (specific actions the project should achieve/ targets). Add a list of outputs and desired activities that should take place, taking into account outputs related to green jobs and skills (e.g. reporting, workshops, creation of a certain number of jobs, training, etc.)</i> • <i>Setting up the indicators and means of verification – this will allow for monitoring and evaluation later on. Indicators could be number of jobs created or number of people trained (in absolute numbers or per investment), transfer of knowledge channels, availability of apprenticeships, and future prospects of growth.</i> 	Financial institution / Implementing organisation
3. Securing commitment	<ul style="list-style-type: none"> • <i>Assess the national context (existing policies and strategies) and secure commitment with relevant local stakeholders (in particular national authorities) – a project must be a participatory exercise.</i> 	Financial institution / Implementing organisation /

Steps	Activities	To be carried out by
	<ul style="list-style-type: none"> • <i>Develop consensus around the possible job creation target / capacity building target and their achievement</i> 	Stakeholders
4. Planning & implementation	<ul style="list-style-type: none"> • <i>Develop project implementation plan & scheduling – needs to take into account the budget available & tasks, set deadlines</i> • <i>Responsibility matrix – who will do what, management structure</i> • <i>Assess training and manpower needs – Does the project have sufficient capacity? Are the training courses structured well? Are they supported at regional/ national level? Is the specific training plan disseminated properly?</i> • <i>Does the project support employment creation?</i> • <i>Are knowledge transfer channels in place? From management to on-the-ground level.</i> • <i>What measures should be in place to ensure continuity after project finalisation? Are guidelines needed?</i> • <i>Is cooperation and knowledge transfer between the different parties going well? e.g. between academic institutions and private sector, or with municipalities.</i> 	Implementing organisation in collaboration with local institutions
5. Monitoring and reporting	<ul style="list-style-type: none"> • <i>Planning monitoring and evaluation – identifying indicators to be monitored and assessed.</i> • <i>Collect information – project level information on outputs, indicators – and evaluate the progress.</i> • <i>Develop/ adapt reporting structure</i> • <i>Publish/ circulate report</i> • <i>Consider possible replication of the project and knowledge sharing with similar initiatives.</i> 	External / Financial institution / Implementing organisation

What can be seen from the operational checklist is the fact that the first three steps are extremely important in order to promote and ensure green jobs and skills. This is where the project is set up and started. The monitoring and evaluation step is also important as lessons learned can be collected and applied in further projects. What is also important is to make sure that follow-up activities are in place in order to make the green jobs and skills projects sustainable in longer term and take advantage of activities already in place.

2. What kind of projects should be supported to promote green jobs and skills

As already briefly mentioned, at operational level, the (financial institution) guidelines for selection of applicants (if relevant) as well as reporting requirements/ outputs could be amended to reflect better green jobs and skills in projects. These could add

indicators/ topical requirements that would steer applicants and project managers and coordinators towards greater emphasis on green jobs and skills. Some examples are given below:

Mainstreaming employment and social considerations (including skills needs) into environment/ energy projects

- Check the institutional willingness regarding employment policy.
- Support to green projects that have the potential to develop green skills through training – transfer of knowledge would be one important component of the project. This could be measured by the number of trained people or the number of apprenticeships offered.
- Importance of job-creation (temporary and permanent) potential of the project. The green projects would have to monitor their job creation (direct and indirect) and its potential future growth by including indicators such as jobs created/ expected, permanent and temporary.
- Support to green projects that look at skills needed in the green sectors to improve the knowledge base on this topic.
- Development of certification and auditing services in the building sector for example. Many such services relate to energy efficiency, which creates green jobs and skills.

Mainstreaming environment/ energy into employment and training projects

- Support projects that establish or adopt official certifications for green skills and jobs to increase the participation rate in training activities and projects dedicated to the transition to a green economy. This can be the first step towards a green employment certification system linked to the environmental public targets.
- Development of generic skills needed across a variety of sectors, including green sectors.
- Supporting training courses for public authorities in e.g. forestry, agriculture sectors that are followed up and involve experts from these sectors.
- Capacity building projects for public authorities to develop local and national green growth and economy plans and strategies.

Indirect green jobs and skills creation

- Support to projects that develop strategic capacity within SMEs. A broader understanding of how SMEs respond to skill deficits and their mechanisms for skills development is necessary to boost their engagement in the green skill

transition. Since the projects are not aimed directly at contributing towards green jobs and skills, it will be difficult to measure their impacts on green jobs and skills promotion.

- Support to projects that are aimed at SME development and support to improve their competitiveness and innovation. There are many of such initiatives in developing countries, many of which indirectly support green jobs and skills by providing funding to SMEs in green sectors, or SMEs developing a particular innovative technology. The aim of such projects is SME development, hence green jobs and skills are created indirectly.

Conclusions

Green jobs and skills are essential for the transition to a green economy. However, since these are still emerging concepts, they are not clearly defined making it difficult to define green job strategies and measure impacts on green job creation. The development of concepts of **green growth and green economy** focus on sustainable growth (economic growth being decoupled from environmental impacts) and environmental benefits. Both concepts encompass the three goals of sustainable development: economic development, environmental protection and social equity.

In parallel to the development of the green economy and green growth concepts, 'green' employment has been seen as a positive impact of green economy and green growth programmes. Similar to other green concepts, green jobs have multiple definitions and interpretations vary according to the context. Most of these definitions advocate for green jobs that are decent and socially inclusive. Over the years, green jobs evolved from including merely jobs in environmental services and low-carbon industries, to those protecting nature and environment, reducing consumption of materials and making countries climate resilient. To unlock the potential of green jobs, green skills are necessary. As such, both green jobs and skills are seen as enabling factors for a transition to a green economy.

Given that the concepts of green jobs and skills are still emerging, there are a number of knowledge gaps. The definitions remain unclear, and while this might improve over time, there is also a risk of the concepts becoming popular but hollow. Further, a framework to measure and monitor green jobs and assess the (employment) impacts of the transition to green economy is lacking. What is also missing is an effective policy framework with targets and indicators that would speed up a transition to a green economy.

Nonetheless, there are several initiatives dealing with green growth and green economy which support green jobs and skills. Most development banks and cooperation agencies aim for inclusive green growth (or green economy) and poverty reduction. However, only the ILO is leading the efforts to support green job creation and green skills (though with support from other UN agencies).

In order to promote green jobs from an **international organisation perspective** it is important to frame green jobs and skills within the overall mission and priorities of the institution. Such institutions must be transparent regarding the measures and instruments offered (i.e. loans, TA, grants) and how they can be used to support green jobs. Further, these institutions can provide guidance on how to assess the size and scope of green jobs in an economy/ sector, suggest enabling factors for

green jobs and skills and support knowledge sharing (i.e. online platforms to share best practices and success factors). Projects supported by an international organisation can be done at the national level or at a smaller scale as explained below.

From a **national perspective**, literature shows that developing countries are lagging behind regarding green jobs. While countries have set environmental and social objectives, not all include green growth/ green economy in their long-term visions. Fewer make explicit the need for green skills development and green employment support. In order to incorporate green jobs in the national agendas, countries should: include green growth in the country vision, develop scoping studies to understand which sectors will be most affected and will need the most support, align current policies with the findings, develop/ implement green jobs initiatives taking into account the country context, and set up a monitoring plan that includes green jobs. Financial institutions and development banks can support national governments through e.g. scoping study, national green job strategy support, etc. Involvement of local stakeholders and alignment with other national priorities is key.

From an **operational perspective**, projects can take different approaches such as top-down, bottom-up, mainstreaming and indirect towards supporting green jobs and skills. This includes green jobs strategies, local initiatives, mainstreaming green issues into employment and education projects and vice versa, and other projects. Green jobs and skills projects include the involvement of the financial institution or development bank, dealing with the project identification and formulation as well as the monitoring, and the implementing agency, dealing with the planning and implementation. Because no two projects are exactly alike, each project should work through the different stages in a way that suits its specific circumstances while ensuring that the process is collaborative and consultative.

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Annex A Literature Review

I. Definitions of green economy and green growth

Table 9 – Definitions of green economy and green growth

	Source	Definition
	UNEP, 2011 ¹²⁷	One that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities. It is low carbon, resource efficient, and socially inclusive. In a green economy, growth in income and employment should be driven by public and private investments that reduce carbon emissions and pollution, enhance energy and resource efficiency, and prevent the loss of biodiversity and ecosystem services.
	UNEP, 2008 ¹²⁸	A system of economic activities related to the production, distribution and consumption of goods and services that result in improved human well-being over the long term, while not exposing future generations to significant environmental risks or ecological scarcities.
	UNCTAD, 2011 ¹²⁹	An economy that results in improved human well-being and reduced inequalities, while not exposing future generations to significant environmental risks and ecological scarcities. It seeks to bring long-term societal benefits to short-term activities aimed at mitigating environmental risks. A green economy is an enabling component of the overarching goal of sustainable development.
Green Economy	Green Economy Coalition, 2011 ¹³⁰	Green economy is “a resilient economy that provides a better quality of life for all within the ecological limits of the planet.”
	International Chamber of	“Green Economy” is described as an economy in which economic growth and environmental responsibility work together in a

¹²⁷ UNEP. (2011). Towards a green economy: Pathways to Sustainable Development and Poverty Eradication.

¹²⁸ UNEP (2008) [Green jobs: Towards decent work in a sustainable, low-carbon world](#)

¹²⁹ UNCTAD. (2011). The Road to Rio+20: For a development-led green economy. Issue 2, November 2011.

¹³⁰ Green Economy Coalition (2012). Principles for a green, fair and inclusive economy, 3 May 2012.

Source	Definition
Commerce, 2011 ¹³¹	mutually reinforcing fashion while supporting progress on social development.
UNCSD, 2011 ¹³²	Green economy can be seen as a lens for focusing on and seizing opportunities to advance economic and environmental goals simultaneously.
Government of South Africa, 2011 ¹³³	The green economy involves largely new economic activities and must provide an important entry-point for broad-based black economic empowerment, addressing the needs of women and youth entrepreneurs and offering opportunities for enterprises in the social economy.
Danish 92 Group, 2012 ¹³⁴	The Green Economy is not a state but a process of Transformation and a constant dynamic progression. The Green Economy does away with the systemic distortions and disfunctionalities of the current mainstream economy and results in human well-being and equitable access to opportunity for all people, while safeguarding environmental and economic integrity in order to remain within the planet's finite carrying capacity. The Economy cannot be Green without being Equitable.
OECD, 2011 ¹³⁵	Fostering economic growth and development, while ensuring that natural assets continue to provide the resources and environmental services on which our well-being relies.
World Bank, 2012 ¹³⁶	Is about making growth processes resource-efficient, cleaner and more resilient without necessarily slowing them. Development that is green [which here means resources-efficient], clean and resilient.
GGGI ¹³⁷	Green growth is the new revolutionary development paradigm that sustains economic growth while at the same time ensuring climatic and environmental sustainability. It focuses on addressing the root causes of these challenges while ensuring the creation of the necessary channels for resource distribution and access to basic commodities for the impoverished.

Green Growth

¹³¹ International Chamber of Commerce (2011) Ten conditions for a transition toward a “Green Economy”, ICC.

¹³² Retrieved from the UNCSD website. <http://www.uncsd2012.org/content/documents/138apec.pdf>

¹³³ Retrieved from the UNEP website. <http://www.unep.org/greeneconomy/AdvisoryServices/SouthAfrica/tabid/79056/Default.aspx>

¹³⁴ The Danish 92 Group. (2012). Five Working Principles of an Equitable Green Economy.

¹³⁵ OECD (2011) [Towards green growth: A Summary for Policy Makers](#). OECD, Paris.

¹³⁶ World Bank (2012) [“Inclusive Green Growth - The Pathway to Sustainable Development”](#)

¹³⁷ Retrieved from the [GGGI website](#).

Source	Definition
UNDESA – Rio+20 Objectives and Themes of the Conference ¹³⁸	Green growth is growth that “emphasises environmentally sustainable economic progress to foster low-carbon, socially inclusive development”. The OECD definition is similar but emphasises also green investment as “a driver for economic growth”.
World Bank, 2012 ¹³⁹	Green growth is growth that is efficient in its use of natural resources, clean in that it minimizes pollution and environmental impacts, and resilient in that it accounts for natural hazards and the role of environmental management and natural capital in preventing physical disasters. And this growth needs to be inclusive. Inclusive green growth aims to operationalise sustainable development by reconciling developing countries’ urgent need for rapid growth and poverty alleviation with the need to avoid irreversible and costly environmental damage.
Global Sustainability Panel, 2011	Aims to foster economic growth and development while ensuring that natural assets and environmental services are protected and maintained. The approach places a premium on technology and innovation — from smart grid systems and high-efficiency lighting systems to renewable energies including solar and geothermal power — as well as on improving incentives for technology development and innovation.
Green Growth Leaders, 2011 ¹⁴⁰	It means “job creation or GDP growth compatible with or driven by actions to reduce greenhouse gases.”

¹³⁸ UNDESA (2012) [A guidebook to the Green Economy](#). Issue 1: Green economy, green growth, and low-carbon development – history, definitions and a guide to recent publications.

¹³⁹ World Bank (2012) [Inclusive Green Growth – The pathway to sustainable development](#)

¹⁴⁰ Green Growth Leaders. (2011). Shaping the green growth economy. The Berkeley Roundtable on the International Economy

II. Definitions of green jobs and skills

Table 10 – Definitions of green jobs and skills

Source	Definition
UNEP, ILO, IOE, ITUC (2008) ¹⁴¹	Green jobs are defined as “...work in agricultural, manufacturing, research and development (R&D), administrative, and service activities that contribute substantially to preserving or restoring environmental quality. Specifically, but not exclusively, this includes jobs that help to protect ecosystems and biodiversity, reduce energy, materials, and water consumption through high efficiency strategies, decarbonize the economy, and minimize or altogether avoid generation of all forms of waste and pollution.”
ILO, CEDEFOP (2011) ¹⁴²	Green jobs are defined as jobs that reduce the environmental impact of enterprises and economic sectors, ultimately to levels that are sustainable. This definition covers work in agriculture, industry, services and administration that contributes to preserving or restoring the quality of the environment while also meeting the criteria for decent work – adequate wages, safe conditions, workers’ rights, social dialogue and social protection. It also covers activities related to both mitigation of and adaptation to climate change. It implies in its inclusivity and breadth that every job can potentially become greener. The understanding of green jobs varies from one country to another. Ultimately, countries will need to compose their own national definitions and set thresholds for practices considered green or non-green.
OECD, Eurostat (1999) ¹⁴³	Use the term of eco-industries (i.e. industries producing environmental goods and services, such as pollution and resource management industries), to refer to green jobs.
AfDB (2012) ¹⁴⁴	This paper defines green growth as “ <i>the selection of economic activities that, at best, promote environmental and social development and, at a minimum, do not harm the environment or human welfare.</i> ”
World Bank (2012) ¹⁴⁵	Chapter 4 states that there is no agreement on the definition of green jobs. The report distinguishes between definitions of green jobs as “employment in ‘green’ industries” and as “the employment consequence of green policies”.

¹⁴¹ UNEP (2008) [Green jobs: Towards decent work in a sustainable, low-carbon world](#)

¹⁴² ILO (2011) [Skills for green jobs: A global view](#)

¹⁴³ OECD/Eurostat (1999) [The environmental goods & services industry - manual for data collection and analysis](#)

¹⁴⁴ AfDB (2012) “[Facilitating green growth in Africa: perspectives from the AfDB](#)”

¹⁴⁵ WB (2012) “[Inclusive Green Growth - The Pathway to Sustainable Development](#)” - chapter 4 deals with “Human Capital: Implications of Green Growth Policies for Labor Markets and Job Creation”

III. Empirical evidence on green jobs and skills

The following sub-sections provide a more in-depth illustration of case studies that have been successful in fostering the transition towards greener economy, shedding light on the scope of the opportunities and the net effects for employment.

Uganda - Sustainable agriculture

Agriculture is Uganda's major source of GDP and provides 69% of all employment. The sector's output comes exclusively from around 4.5 million smallholder farmers, 80% of who own less than two hectares of land. Uganda has experienced an important process of land conversion in the past two decades, starting as early as 1994 when a few commercial companies chose to engage in organic agriculture. By 2003, a general movement towards developing sustainable agriculture as a means of enhancing people's livelihoods had turned Uganda's land area under organic agriculture production into the world's 13th largest, and the largest in Africa. Since then, sustainable practices have continued to expand. In 2011 the country had 226,954 hectares under organic agricultural management (up from 210,245 hectares in 2008–09). The number of farmers certified organic went from 180,746 to 187,893. Income improved with the farm-gate prices of organic pineapple, ginger and vanilla in 2006, by 300, 185 and 150% higher, respectively, than those of conventional products. Uganda's certified organic exports increased from US\$3.7 million in 2003–04 to US\$22.8 million in 2007–08. Organic farming is also a low-carbon growth path. GHG emissions per hectare are estimated to be on average 64 per cent lower than emissions from conventional farms, as organic fields sequester 3–8 tonnes more carbon per hectare than conventionally cultivated fields.¹⁴⁶

Upgrading recycling work in Brazil and Sri Lanka

Brazil has the world's largest national waste-pickers' movement. The income of its some 60,000 members is three to five times higher than that of unorganized wastepickers. This is the fruit of an effective mix of policies put in place by the Brazilian Government over the past decade. Policies include legal recognition,

¹⁴⁶ Adapted from: ILO. (2013). Sustainable development, decent work and green jobs.

entrepreneurial development, municipal government contracts and facilities (sorting stations), modern recycling methods, skills development and occupational safety and health precautions, as well as measures to prevent and discourage child labour. These measures have triggered large-scale improvements in recycling efficiency, working conditions and incomes. The Brazilian poverty eradication strategy *Brasil Sem Miséria*, launched by President Rousseff in June 2011, aims to scale this up and formalize a further 250,000 waste-pickers in addition to the over 60,000 already organized.¹⁴⁷

Sri Lanka has initiated a strategy to improve working conditions and the formalization of jobs among the most vulnerable categories of informal workers, including those in waste management. A total of 4,000 waste handlers, truck drivers, waste sorters/collectors and local communities across seven zones in the Western Province have been sensitized on occupational health and safety at work. OSH standards have been integrated into the National Vocational Qualification (NVQ) certification for waste management operations, endorsed by the national Tertiary and Vocational Education Commission (TVEC). The national OSH Act was expanded to the workplaces and workers involved in waste management. The Waste Management Authority agreed to training for the 4,000 workers on bargaining and collective issues, provided by trade unions.¹⁴⁸

Jordan – Green job creation

The government of Jordan is currently supporting numerous policies, initiatives and programmes aimed at achieving a green economy, such as: the adoption of the renewable energy law and fiscal incentive package on renewable energy and energy efficiency equipment in 2010; the removal of subsidies for oil in 2008; and the establishment of the Eco-Cities Forum, the Eco-Financing Seminar and the Zarqa River rehabilitation project. Additionally, the government's 2010 Executive Programme highlights its pursuit of green economy development, by documenting the necessity to "launch a programme for green services and industries to meet the requirements for adhering to environmental standards and turning Jordan into a regional centre for green

¹⁴⁷ Dias, S.M. (2011). Overview of the legal framework for inclusion of informal recyclers in solid waste management in Brazil, WIEGO Urban Policies Briefing Note No. 8 (Cambridge, MA, WIEGO).

¹⁴⁸ ILO. (2012). Employment creation model in Sri Lanka: Promoting green jobs and livelihoods in municipal solid waste management.(Jakarta).

services and industries.” This Scoping Study reviews the current state of investments in Jordan and implications for a transition towards a green economy. The study looks at the economic, social and environmental challenges of Jordan, and identifies the sectors that appear to offer a significant potential for green investment to drive a transition towards a green economy. These sectors relate to energy, water, transport, waste management, agriculture and tourism.

The findings of the report are summarised in the table below¹⁴⁹:

Table 11 – Green jobs creation in Jordan

Sector	Green Jobs Created	Investments (JD million)	Time Period
Renewable energy	3,000	620	2010-2020
Transport	9,500	130	2010-2020
Water	31,000	330	
Waste Management	3,000	41	
Organic Agriculture	1,700	11	2010-2014
Sustainable Tourism	3,900	89	Annually
Total	51,000	1,321	--

Based on the table, greening Jordan’s economy could bring about 51100 new jobs and trigger approximately JD 1.321 billion in new investments in ten years. This could simultaneously mobilize significant development aid to support jobs and income advancements and ensure long term sustainability.

A review of 24 studies available for nine countries and two regions and one global analysis find that observable net employment gains have been accomplished, or can be realized.¹⁵⁰ The table below provides a brief summary of the findings.

¹⁴⁹ UNEP (2011). Towards a Green Economy in Jordan.

¹⁵⁰ See: ILO and ILLS. (2012). [Working towards sustainable development](#) and ILO (2013) Sustainable development, decent work and green jobs, Genève: ILO.

Table 12 – Estimated employment effect of greening the economy.

Country	Model and employment effects
Brazil	Employment is anticipated to increase by 1.13% annually between 2010 and 2030, and GDP could increase on an average of 0.5% per year in reducing pasture areas and protecting forests
China	6.8 million direct and indirect jobs could be created by meeting the government's solar, wind and hydropower targets; Reduction in energy intensity industries could be outstripped by approximately 10 million jobs by means of increased employment in renewable energy and shifting from basic industries towards services.
South Africa	98,000 new direct jobs can be created in the short term (between 2011-12), 225,000 in the medium term (2013-17), and 462,000 in the long term (2018-25) through energy and resource efficiency, low-carbon energy generation, natural resources management and emission and pollution mitigation; An additional 106,000 renewable jobs can be created by 2030 under an ambitious 'energy revolution scenario'; total energy employment would be 56% higher than the IEA reference scenario.
Indonesia	A 2% GDP annual green investment in energy, transportation, forestry could generate between 0.9 and 1.2 million jobs in four sectors with decent working conditions, many being green jobs.

IV. Examples of Green Skills for Green Jobs

- Strategic and leadership skills to enable policy-makers and business executives to set the right incentives and create conditions conducive to cleaner production, cleaner transportation etc.;
- Environmental awareness and willingness to learn about sustainable development;
- Coordination, management and business skills to facilitate holistic and interdisciplinary approaches incorporating economic, social and ecological objectives;
- Communication and negotiation skills to discuss conflicting interests in complex contexts;
- Consulting skills to advise consumers about and spread the use of green solutions ;
- Adaptability and transferability skills to apply new processes required for green jobs;

- Systems and risk analysis skills to understand the need for change and the measures required;
- Networking, IT and language skills to perform in global markets;
- Entrepreneurial skills to seize the opportunities of low-carbon technologies;
- Innovation skills to create new strategies to respond to green challenges; and
- Marketing skills to promote greener products and services.

Source: ILO/CEDEFOP (2011) Skills for green jobs: A global view

Annex B Case Studies

I. National context for the case studies

1. Jordan

Jordan's National Agenda (2006-2015)¹⁵¹ sets environmentally-sustainable economic development as a key policy goal. This is reflected in different sectors, including energy, transport, and waste management. The 2010 Executive Programme has stated Jordan's pursuit of a green economy development. The Ministry of Environment, created in 2003, has a number of initiatives including the green economy strategy for Jordan (2010-2012) launched in 2010 jointly with UNEP to assist the country in the implementation of its 2010 Executive Programme on green economic development.

Key relevant strategies in Jordan include:

- **Jordan's Master Strategy of the Energy Sector for 2007-2020**¹⁵² - includes ambitious targets to increase the contribution of renewable energy sources to the national energy supply. Furthermore, it recognizes the country's potential to reduce consumption by using energy efficiency measures
- **Water for Life – National Water Strategy 2008-2022**¹⁵³ – aimed at overcoming the acute challenges of water in Jordan, and to cut back on abstraction from 32% of supply in 2008 to 13% by 2022. It also aims to increase the use of alternative water sources such as desalination plants, wastewater treatment and other large bulk water supply projects and to improve water efficiency.

UNEP published a scoping study 'Towards a Green Economy in Jordan'¹⁵⁴ which states that the country has established a number of policies on the sustainable energy field and that such policies could be expanded to other sectors. In addition, the Global Green Growth Institute and the Korea International

¹⁵¹ [National Agenda 2006-2015: The Jordan we strive for](#)

¹⁵² Government of Jordan (2007) '[Master Strategy of the Energy Sector for 2007-2020](#)'

¹⁵³ Government of Jordan (2011) '[Water for Life – National Water Strategy 2008-2022](#)'

¹⁵⁴ UNEP (2011), [Towards a Green Economy in Jordan](#)

Cooperation Agency are supporting another project on the topic in Jordan: 'Jordan-Green Growth planning' running from 2011 until 2016.¹⁵⁵

2. Barbados

Barbados' Growth and Development Strategy 2013-2020¹⁵⁶ mentions the transition to a Green Economy along with a number of measures to be taken to achieve this. Further, it explicitly states that green jobs in the renewable energy sector are an opportunity for Barbados. This is in line with the 'Barbados Human Resource Development Strategy 2011-2016'¹⁵⁷ which focuses on developing national, institutional and human capacity for sustainable growth. This strategy already mentions the government support towards a green economy. As such, the strategy explores clean and renewable energy sources, encourage research and development of environmentally sustainable solutions, and support the creation of green jobs through specialized education and training in integrated waste management, coastal preservation, water supply management, environmental economics, and related areas.

In addition, a scoping study¹⁵⁸ was carried out by UNEP on Barbados' green economy in 2014 provides the potential for greening different sectors and an analysis of enabling conditions for a transition to the green economy.

3. Philippines

The 'National framework strategy on climate change 2010-2022'¹⁵⁹ and the 'National Climate Change Action Plan 2011 – 2028'¹⁶⁰ envision a climate-resilient Philippines with healthy, safe, prosperous and self-reliant communities with thriving and productive ecosystems. The 'Philippine Development Plan 2011-2016'¹⁶¹ adopts a framework of inclusive growth, which is high growth that is sustained, generates mass employment, and reduces poverty. Regarding employment in particular, 'The Philippine Labour & Employment plan 2011 –

¹⁵⁵ http://en.openei.org/wiki/Jordan-Green_Growth_Planning

¹⁵⁶ Barbados' Ministry of Finance and Economic Affairs (2013) '[Barbados' Growth and Development Strategy 2013-2020](#)'

¹⁵⁷ Barbados' Ministry of Education and Human Resource Development & Ministry of Labour (2010), '[Barbados Human Resource Development Strategy 2011-2016: Developing National, Institutional and Human Capacity for Sustainable Growth](#)'

¹⁵⁸ UNEP (2014) '[Barbados' Green Economy Scoping Study](#)'

¹⁵⁹ Government of the Philippines (2010) "[National framework strategy on climate change 2010-2022](#)"

¹⁶⁰ Philippine climate Change Commission (2011) "[National Climate Change Action Plan 2011 – 2028](#)"

¹⁶¹ Government of the Philippines (2011) "[Philippine Development Plan 2011-2016](#)"

2016 - Inclusive Growth through Decent and Productive Work¹⁶² mentions the development and harmonizing of green programs as one of the key strategies to increase employment opportunities in the Philippines. It also mentions that government agencies will also harmonize their green programs toward the promotion of green jobs. Further, it states that initiatives to promote green jobs and industries will be pursued particularly in automotive, manufacturing, MSMEs, construction, housing, shipbuilding, mining, solid waste management, community contracting for employment-intensive green infrastructure, natural resource management and renewable energy. In addition, as part of ‘Enhancing human capital through education and training’ it mentions the need to develop green skills standard setting and certification as well as capacity building for employers and workers.

The ILO Green Jobs Programme works with Philippine counterparts to enhance capacities of workers’ and employers’ organization to contribute fully to the development and implementation of just transition measures of green jobs at the national level, including policy frameworks such as the Decent Work Program, the National Jobs Pact, the Medium Term Development Plan and the National Climate Change Action Plan. As part of their work, together with the Department of Labor and Employment (DOLE), they supported the first Philippine Green Jobs Conference, “Promoting Green Jobs and Decent Work towards Inclusive Growth”¹⁶³, which focused on developing and enhancing information links among various stakeholders to identify the new jobs, skills and competencies that should be acquired to ensure a just transition toward employment-friendly resources.

In 2014, ILO published the ‘Green jobs mapping study in the Philippines: An overview based on initial desk research’¹⁶⁴ which provided estimates for green jobs in ten different sectors.

4. China

Its GHG emission reduction commitment urges China to adopt a series of policies to stimulate the development of a green energy-saving economy. The

¹⁶² Government of the Philippines (2011) [“The Philippine Labour & Employment plan 2011 – 2016 - Inclusive Growth through Decent and Productive Work”](#)

¹⁶³ <http://www.philgreenjobs.dole.gov.ph/>

¹⁶⁴ ILO (2014) [“Green jobs mapping study in the Philippines: An overview based on initial desk research”](#)

Chinese government has put emphasis on environmentally sustainable and inclusive growth in the Twelfth Five-Year Plan. China has no direct policy to promote green jobs, but there are some policies committed to energy conservation and energy efficiency that indirectly promote the development of green jobs. The consultant's report states that the government has emphasized the importance of promoting green jobs, including introducing the concept and raising awareness through advocacy initiatives; conducting strategic research on green jobs to inform policies and strategies; strengthening skills training for green jobs; and encouraging innovation in green and clean sectors to spur green employment. The government targets to create 2.2 million green jobs by 2020.

China is supported by ILO through the Green Jobs Initiative 2008-2009.¹⁶⁵ The green jobs activities in China include:

- Assessing the impact of climate change on employment, and the potential of creating more green jobs;
- Supporting policy formulation for green employment promotion;
- Developing training programmes to support the setting up of new green businesses;
- Demonstrating good practices for the enterprises in transition;
- Building capacity of government, employers organizations, workers organizations and other partners;
- Promoting inter-agency dialogue, and facilitating consultation at the national level;
- Integrating green jobs into post-disaster reconstruction in Sichuan

5. South Africa

South Africa has implemented a number of environmental policies. The most relevant one under this context is the 'Green Economy Accord' and the South African National Strategy for Sustainable Development and Action Plan (2011 – 2014)¹⁶⁶, as well as the 'New Growth Pact'.

¹⁶⁵ http://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/---ilo-beijing/documents/publication/wcms_133679.pdf

¹⁶⁶ https://www.environment.gov.za/sites/default/files/docs/sustainabledevelopment_actionplan_strategy.pdf

In 2010 a report was published called ‘Unlocking South Africa’s Green Growth Potential’¹⁶⁷, dealing with the potential in the renewable energy sector. Another report also focuses on green economy and employment opportunity in South Africa.¹⁶⁸ This report concludes that the green economy already employs several hundred thousand predominately in mining jobs, as well as services jobs in recycling, biodiversity conservation and eco-tourism. Further, it states that the growth of a green economy presents an opportunity for the creation of 300 000-400 000 new jobs to be created in green industries.

II. Case studies

1. Capacity Building for Sustainability in Vocational Education and Training (VET) in Egypt, Jordan and Syria – GIZ

Capacity Building for Sustainability in VET		Regional project: Middle and Near East Countries (Egypt, Jordan and Syria)	
		Partner: GIZ	
Integrating environmental aspects into VTC curricula		Jordan	
Type of project	Human Capacity Development (HCD) Approach to support and shape both individual learning processes and networking of people.		
Budget and timeframe	2009		
Sector	E-learning, tourism & hospitality sector, waste management		
Context	At the time the project was planned, sustainability strategies increasingly gained significance in the political sphere in the target countries. However, the concrete implementation of processes and actions contributing to sustainability remains a challenge in TVET institutions and the private sector of the region. TVET plays a central role in developing new competences that meet the requirements of the economy and cater to aspects of environmental sustainability. Such competences or qualifications foster innovation and cleaner technologies and thus contribute to creating new employment opportunities and fields of work.		
Related regulations / target	Key relevant strategies in Jordan – as identified in a previous TEC project - include: <ul style="list-style-type: none"> • <i>Jordan’s Master Strategy of the Energy Sector for 2007-2020 - includes ambitious targets to increase the contribution of renewable energy sources to the national energy supply. Furthermore, it recognizes the country’s potential to reduce consumption by using energy efficiency measures</i> • <i>Water for Life – National Water Strategy 2008-2022 – aimed at overcoming the acute challenges of water in Jordan, and to cut back on abstraction from 32% of supply in 2008 to 13% by 2022. It also aims to increase the use of alternative water sources such as</i> 		

¹⁶⁷ SARI (2010) ‘[Unlocking South Africa’s Green Growth Potential](#)’

¹⁶⁸ TIPS (2012) ‘[Green Economy Policy Framework and Employment Opportunity: A South African Case Study](#)’

Capacity Building for Sustainability in VET		Regional project: Middle and Near East Countries (Egypt, Jordan and Syria)	Partner: GIZ
Integrating environmental aspects into VTC curricula		Jordan	
	<i>desalination plants, wastewater treatment and other large bulk water supply projects and to improve water efficiency.</i>		
Objectives	<p>The main goal of the regional project was to promote the development and implementation of sustainability strategies by capacitating relevant actors and decision-makers within TVET institutions and the private sector and promoting networking amongst these. The Jordan project aimed to:</p> <ul style="list-style-type: none"> • <i>raise awareness on environmental aspects among VTC¹⁶⁹ teachers and trainees,</i> • <i>create positive attitudes towards the environment in order to reduce environmental pollution,</i> • <i>build the capacity of trainees to enable them to deal with workshop wastes in an environmentally safe manner,</i> • <i>benefit financially from the workshop remnants by partnering with recycling companies.</i> 		
Definition of green jobs	<p>No definition available.</p> <p>The UNEP study states that greening the economy in Jordan could result in created 51100 new jobs in Jordan.</p>		
Stakeholders involved	GIZ, Jordan Vocational Training Corporation, Jordan Chamber of Industry (Other stakeholders involved in other countries)		
Results and impacts	<p>In Jordan:</p> <ul style="list-style-type: none"> • <i>Four workshops with 76 training centre directors and health, safety and environment officers covering topics such as environmental protection law, waste management, occupational safety and health etc.</i> • <i>600 posters as an awareness raising measure on environmental issues.</i> • <i>Approximately 400 VTC instructors and 6000 trainees participated in awareness raising activities on issues and risks related to workshop wastes.</i> • <i>Income generated by selling paper waste and left-over coolant oil to recycling companies</i> • <i>VTC instructors have developed a more holistic understanding of “safety and health” courses integrating environmental aspects into their curricula</i> 		
Governance	Within the regional project, separate initiatives took place at the national level with the regional project providing support.		
Success factors	<ul style="list-style-type: none"> • <i>Senior staff is well sensitised on the key issues at stake and, ideally, has been actively engaged in initiating the project (or that they are –at least- informed and formally approve the project).</i> • <i>Communication and participation within institutions in the implementation process</i> • <i>TVET-Portal provides a platform that plays a central role in strengthening collaboration</i> • <i>Running pilot projects: A non-threatening way to introduce new processes and structures</i> • <i>Providing sufficient support mechanisms such as guidance and counselling during the implementation process</i> • <i>Flexible and participatory approach applied to developing and implementing the HCD measures</i> 		
Lessons learnt	<p>For regional project:</p> <ul style="list-style-type: none"> • <i>Management support is the most essential ingredient for institutionalisation.</i> 		

¹⁶⁹ The Vocational Training Corporation (VTC) is the main governmental institution offering vocational training courses responsive to the skills requirements of Jordanian industries.

Capacity Building for Sustainability in VET		Regional project: Middle and Near East Countries (Egypt, Jordan and Syria)	
		Partner: GIZ	
Integrating environmental aspects into VTC curricula		Jordan	
	<ul style="list-style-type: none"> Involving government agencies can provide valuable support to the implementation of project activities and institutional change All stakeholders should be aware of the process and persons involved should be equipped with the right skills Sharing and networking among participants contributes positively to facilitating learning and initiating institutional change Whether or not project participants were able to act as multipliers or change agents within their institutions depends significantly on their roles and functions within the institutions. Some mechanisms identified for anchoring efforts in institutional structures include: forming units representing the project within their institution and establishing steering committees. Adequate preparation of all stages of the project is essential for successful, holistic and sustainable implementation. Addressing potential attitudinal blockages at an early stage through sensitisation and awareness raising initiatives was helpful for overcoming barriers. Involving the private sector was only successful in those cases where private sector representatives considered specific competences or improved qualifications economically relevant or advantageous <p>For Jordan: The key element for the successful implementation of the project was, to create positive attitudes towards the environment for both trainers and trainees encouraging them to decrease pollution by applying recycling processes.</p>		
Hampering factors	<p>For regional project:</p> <ul style="list-style-type: none"> Change of management personnel Key staff involved in the project are moved to other positions by superiors generating delays due to their replacement Lack of top level/political support resulting in insufficient (human/financial) resources Lack of an overarching policy ensuring consistency and standardisation of Career Guidance activities across various placement offices. The widespread negative image of TVET¹⁷⁰ within societies of the target countries impacted negatively on the implementation of some of the transfer project activities. <p>For Jordan:</p> <ul style="list-style-type: none"> Lack of expertise within VTC in this thematic area, particularly with respect to designing and developing learning materials on environmental issues. T Operational challenges such as a lack of recycling companies in Jordan for materials other than paper and plastic. Limitations to the reach of the project as facilities require additional funding to separate wastes from the workshops. 		
Recommendations	For Jordan:		

¹⁷⁰ Vocational training has a negative image because children are encouraged to achieve academic education in universities and colleges, as this is thought of as a guarantee for employment.

Capacity Building for Sustainability in VET		Regional project: Middle and Near East Countries (Egypt, Jordan and Syria)	Partner: GIZ
Integrating environmental aspects into VTC curricula		Jordan	
	<ul style="list-style-type: none"> • Providing required facilities for VTC institutes to enable them to deal with the training workshops in an environmentally safe manner. • Creating a partnership with NGOs, to sponsor the project and provide support. • Creating an entrepreneurial thought leading the trainees to contribute to the reduction of pollution in their professions in the future. 		
Replicability	Yes, it's a regional project		
References and documentation	Impact and Good Practices of Human Capacity Development (HCD) in the Organisational Context - Experiences from two regional projects in the MENA region (GIZ, 2013)		

2. Small Developing Island Renewable Energy Knowledge and Transfer Network (DIREKT) – European Commission in ACP (Small developing islands in Africa, Caribbean, Pacific)

DIREKT		ACP region (Small developing islands in Africa, Caribbean, Pacific)	Partner: European Commission
Type of project	Knowledge and Technology Transfer		
Budget and timeframe	2009-2012 / EUR 1.1 million		
Sector	Renewable energy		
Context	<p>Most Small Island Developing States (SIDS) in the ACP region are heavily dependent on the importation of fossil fuels to cover their energy needs. The sustainable development of SIDS depends on reducing the fuel importation bill and the development and application of renewable energy technologies is the most feasible way to achieve this.</p> <p>It is a universities' initiative (University of Hamburg). They identified the skills gap and RES is seen also as reducing costs.</p>		
Related regulations/ targets	<p>Barbados' Growth and Development Strategy 2013-2020¹⁷¹ mentions the transition to a Green Economy along with a number of measures to be taken to achieve this. Further, it explicitly states that green jobs in the renewable energy sector are an opportunity for Barbados.</p> <p>The project considered the relevant regulations but there is no direct link between them and the project.</p>		
Objectives	<p>Strengthening the science and technology capacity for renewable energy of targeted ACP (African, Caribbean and Pacific) Small Island Developing States (SIDS), through technology transfer, information exchange and networking. The overall objectives are to:</p> <ul style="list-style-type: none"> • Strengthen internal science & technology capacity in RE of ACP-SIDS; strengthen relationship among institutions • Foster cooperation between participant countries and EU; and • Contribute to the transfer of research results on key issues in RE by establishing "technology 		

¹⁷¹ Barbados' Ministry of Finance and Economic Affairs (2013) '[Barbados' Growth and Development Strategy 2013-2020](#)'

ACP region (Small developing islands in Africa, Caribbean, Pacific)	
DIREKT	Partner: European Commission
	<p><i>transfer centres”</i></p> <p>The specific objectives are to:</p> <ul style="list-style-type: none"> • <i>Increase the capacity and improve the quality of research in RE as a tool to fight climate change;</i> • <i>Develop and establish a market-oriented research framework to better capitalise upon and disseminate research results; and</i> • <i>Strengthen links of research communities in ACP-SIDS with regional markets, businesses and policy in RE</i>
Definition of green jobs	<p>The project is not directly linked to a green jobs initiative. So there is no working definition used. Indirectly, they focus on green jobs and skills as the aim was to build capacity in the sea and provide training.</p>
Stakeholders involved	<p>DIREKT is a partnership among the Hamburg University of Applied Sciences, the University of the West Indies, the University of the South Pacific and the University of Mauritius, and is funded by the ACP Science and Technology Programme, which is a European Union (EU) programme for cooperation between the EU and the ACP region. They also involved the private sector.</p>
Results and impacts	<p>The DIREKT project’s activities have ranged from capacity building seminars and workshops targeting key and diverse stakeholders, to local, regional and international networking events, to the demonstration of renewable energy technologies in action in the form of pilot projects developed and operationalized in all participating countries, to the identification of strategies for universities to enhance training in research into renewable energy.</p> <p>Outputs:</p> <ul style="list-style-type: none"> • <i>Study ‘Assessment of Needs for Market-Oriented Research and Technology Transfer’</i> • <i>Pilot RE demonstration facilities (Barbados, Fiji, Hamburg, Mauritius) - Technology transfer pilot projects.</i> • <i>Capacity building programmes for business and university staff: National, regional and international seminars and workshops to increase awareness and knowledge of RE technologies and enhance relevant skills. The persons trained represented businesses and other private sector organisations, the public sector and educational institutions, including schools and universities.</i> • <i>Transnational recommendations report - Recommendation report on research and technology transfer policies in ACP SDIs.</i> • <i>Promotional material</i> • <i>DIREKT website and EU-ACP DIREKT network with local subgroups in partner countries.</i> • <i>Research and Technology Transfer Centres for renewable energy at the partner institutions in SDIs.</i> • <i>A local and regional research and technology transfer strategy in the field of renewable energy for ACP partner institutions.</i> <p>Outcomes</p> <ul style="list-style-type: none"> • <i>In-depth understanding of the market needs for renewable energy (comparative analysis of political and institutional frameworks, assessment of research and innovation needs in science and technology);</i>

DIREKT	
ACP region (Small developing islands in Africa, Caribbean, Pacific) Partner: European Commission	
	<ul style="list-style-type: none"> • Reinforcement of research quality (research and technology transfer strategy, national and international capacity building seminars); • Improved market-orientation of research and technology for better capitalisation (SDI Research and Technology Transfer Centre, pilot project, recommendations); • Increased linkages among the scientific community (dissemination and networking). • Around 260 people trained in the ACPs in various fields of RES. The audience was multidisciplinary, coming from different sectors.
Governance	<p>Uni of Hamburg was the lead partner working with EU donors, other universities and private sector (companies involved in RES). They encouraged the private sectors to come on board, in exchange for advertisement on their campus and demonstration of their technologies, how the technologies operate. Private parties were involved in assisting the financing of technologies. Because of the advertisements, other companies came to the campus to promote their products and advertise their name, gave presents, it's a form of giving recognition to their product. Government was to some extent involved.</p>
Success factors	<ul style="list-style-type: none"> • Established collaboration • Working relationship with private sector, the initiative continues, people still come to the campus, other projects signed, more people coming on board → relationship started with this project • The working relationship started with TVET council, Standards institute • Ministry of Energy • Build up confidence with universities and are donating more stuff to the unis • Conditions for success <ul style="list-style-type: none"> • Implemented by the university involved in research – people were not hesitant to get involved, unlike if it came from government or private sector (trust issues) □ buy in process easier from private sector and govt • Age group of the people – enthusiastic • Technical expertise – still needs more training • Centralised administration – by the University center for the 4 campuses
Lessons learnt	<ul style="list-style-type: none"> - University a lot more receptive to similar projects - Confidence increased
Hampering factors	<ul style="list-style-type: none"> • Financing deployment of some of the technologies • University administration was not familiar with the technological, was a bit risk averse
Recommendations	<ul style="list-style-type: none"> • Financing first, sometimes not enough funding to do what you have to do, puts a strain to complete the tasks • Networking important as part of the project, fosters collaboration, communication, they can see the importance of the project, assist in the buy in process • We need to talk more with people involved in the conceptualisation of these projects → increases confidence, people feel comfortable getting involved → communication is key • Certification – no official certification, people don't want to pay as they don't receive any certificates, especially if they have to pay for it. • Training – still need more people
Replicability	<p>If you have the correct framework in place then it's possible (they have done it through universities)</p>

ACP region (Small developing islands in Africa, Caribbean, Pacific)	
DIREKT	
Partner: European Commission	
References and documentation	Interview with Natasha Corbin – Project Manager in UWI Cavehill campus in Barbados DIREKT website , ACP website and Transnational Recommendation Report

3. Green Jobs in Asia - ILO (Philippines)

Green Jobs in Asia		Philippines
		Partner: ILO
Type of project	The ILO project Green Jobs in Asia assisted five Asian countries (Bangladesh, Indonesia, Nepal, Sri Lanka and the Philippines) in initiating the shift towards low-carbon, environmentally friendly and climate resilient economies. Approach – social dialogue and action learning	
Budget and timeframe	Operating from mid-2010 until August 2012	
Sector	Sustainable Construction – social housing (but they did a mapping study and selected 8 priority sectors and chose this sector to demonstrate it on)	
Context (history and relevance of the project)	<ul style="list-style-type: none"> • <i>Agreement between Australian aid agency and ILO → want to focus on key things (including green jobs) in the region, decision was to come up with regional collaboration</i> • <i>In each country preliminary inception meetings and background studies took place to decide on the thematic focus (each country had different focus).</i> • <i>Joint decision to go into sustainable construction in the Philippines from the tripartite constituents (government, employer association, employee association)</i> • <i>Probably changes in the Australian government priorities between 2010 and 2012 as there was no next phase of the green jobs in Philippines project. The first phase focused on technical demonstration.</i> • <i>But these issues are taken on board by the other constituencies of ILO through other projects (i.e. Green Business Asia)</i> 	
Related regulations/ targets	<ul style="list-style-type: none"> • <i>There is commitment from government and ILO constituents on green jobs and social housing</i> • <i>ILO Decent Work Program</i> • <i>The Philippine Labor & Employment Plan 2011-2016 – green jobs one of the policy principles and strategies and social housing identified as a sector for decent work employment generation.</i> <ul style="list-style-type: none"> • <i>Social housing one of the key sectors highlighted under the Medium Term Philippines Development Plan 2011-2016 → look into green elements in the building materials and making them climate resilient, also it includes decent and affordable housing as a means for inclusive growth.</i> • <i>The National Climate Change Action Plan of the Philippines until 2020 includes green jobs as the key pillars, they use it as their policy basis, and it lists climate adaptive housing and climate-proofing of infrastructure as integral outputs → its included in the national policies</i> • <i>The Housing and Urban Development Co-ordinating Council (HUDCC) accredits appropriate materials and technology for construction of housing facilities. HUDCC also comprises the National Housing Authority (NHA), which is the sole national agency mandated to engage in</i> 	

Green Jobs in Asia		Philippines Partner: ILO
	<p>housing production for low income families.</p> <ul style="list-style-type: none"> The Philippines Green Building Council recently launched “Building for Ecologically Responsive Design through Excellence” (BERDE), a voluntary rating system for sustainable/green buildings, which will guide member industries in their construction. 	
Objectives	<ul style="list-style-type: none"> The project’s goal is to enhance capacities of its constituents - government, workers and employers, to undertake just transition measures including green jobs governance, greening of enterprises and decent work. Key strategies are assistance to policies, research and communication, capacity building, demonstration project, knowledge sharing and assistance to tripartite structure formation. Influencing national policies and so contribute to an inclusive growth model that is job-centred, environmentally sustainable, and promotes decent work 	
Definition of green jobs	<ul style="list-style-type: none"> ILO definition was used → “jobs that reduce the environmental impact of enterprises and economic sectors, ultimately to levels that are sustainable while also meeting the criteria for decent work – adequate wages, safe conditions, workers’ rights, social dialogue and social protection”. Definition includes mitigation as well as adaptation and jobs that are environmentally friendly – climate resilient buildings, they always look at CCA → expansion of green occupations and jobs; it also includes decent work jobs. The study looked at which sectors had potential, how to measure green jobs and which partners were relevant at the country level. There were probably different mapping studies done in different countries There was an agreement on how to define green jobs within the context of social housing → the components include: application of green products to create green jobs, technical skills training incorporating greening and decent work, formation of enterprises and workers guild, promotion of occupational safety and health, crafting of green guide for socialized housing and mainstreaming gender. 	
Stakeholders involved	<ul style="list-style-type: none"> ILO – Regional Office Philippines National Housing Authority Philippines government Philippines employer association Philippines Green Building Council Housing and Urban Development Council (HUDCC) Australian Government Philippines employee association Building Workers International affiliates Philippines Climate Change Commission Philippines private contractors Philippines Technical Education and Skills Development Authority (TESDA) and HOLCIM Ltd. 	
Results and impacts	<ul style="list-style-type: none"> Exit conference only, almost a year after the project was completed held by the National Housing Authority (NHA). National housing authority made the conference and reported on the activities → they tried to integrate and mainstream green jobs into their processes → good indication in being effective in terms of convincing them There was a five day occupational safety and health training to broaden the knowledge of trade union representatives and social partners working in the Socialized Housing sector – to learn how to implement OSH at designated construction sites in 2011. Other training: e.g. for lower skilled, on the job, community-based training, multi-skilling training, and training for professionals 	

Green Jobs in Asia		Philippines Partner: ILO
	<ul style="list-style-type: none"> • <i>Foundation Training on Green Jobs and Greener Business Forum in 2011</i> • <i>A roundtable discussion and project advisory committee meeting on green jobs initiative – discussing the role of government, employers’ and workers organisations.</i> • <i>First Philippine Green Jobs Conference in 2011 organised by ILO</i> • <i>Even when project finished, lot of things were not completed yet, you needed more time as a long process to see the results</i> • <i>But they managed to get done the initial steps to make that happen – guidelines (“green socialised housing guide”), identifying the site, training of first and second batches of people that could produce</i> • <i>No formal post evaluation done to look into the results</i> • <i>Results were not measured. There was only a mapping study, no statistics to measure them → that could be the follow up, nothing about how do we actually improve the numbers → there were preparations done because of expectations of next steps</i> • <i>Mapping study looking at which sectors would take it up, and who would be country level partners – skills projection</i> 	
Governance	<ul style="list-style-type: none"> • <i>Incorporation in the project implementation process</i> • <i>It’s a regional programme so knowledge exchange happening in different countries, regional green jobs conference conducted during that time, carried on the work last year in the regional network, they had a meeting to update each other what has happened</i> • <i>They tried to keep going the knowledge</i> • <i>Lot of work done by regional office – it’s one of their key functions</i> • <i>Requirements to start the project:</i> • <i>Decent work country program → key priorities affirmed by ILO and its constituents (govt representatives – labour, ministry of employment, workers administrations, employers)</i> • <i>It must be affirmed as within the national priorities</i> • <i>They used additional non-traditional partners → climate change commission of the country, there is a memorandum of understanding between ILO and the CC Commission</i> 	
Success factors	<ul style="list-style-type: none"> • <i>Partners were technically capable and had the topic in their mandate: Given the time that we had working with the partners, certainly the good elements in place were: key partner mainly looking after this sector as part of their mandate (social housing managed by one agency – national housing authority)</i> • <i>Aligned with national priorities: This sector was selected because of these structures (NHA), also the national priority of the Philippines (and a priority for ILO), social housing sector, & because it provided opportunity to construct climate resilient structures</i> • <i>Green buildings gaining ground</i> • <i>The Philippines green building council was also a partner → green building guidelines came out, good timing</i> • <i>It was the right timing, it was aligned to national priorities, and good partners technically capable and having it in their mandates (so interest)</i> • <i>The regional program allowed for knowledge exchange, e.g. through the knowledge portal which is still active. There was a regional meeting in 2014 and a regional green jobs conference.</i> 	

Green Jobs in Asia		Philippines Partner: ILO
Lessons learnt	<ul style="list-style-type: none"> You need to take into account the scheduling needed to see the impacts/ effects This includes the lengthy contracting process + finding labour to do the tasks (e.g. construction workers) Having good partners is crucial Also, having support from the government is crucial. The topic should be within the national priorities to have sufficient interest. 	
Hampering factors	<ul style="list-style-type: none"> Key challenges: scheduling – we were given very short time to go into this sector, initially their visions were very ambitious, they thought they could actually produce demonstration sites – green construction materials and taking into account green skills developed, but they were able to get the initial steps to make that happen – guidelines, identifying the site, training of first and second batches of people that could produce They didn't consider: contracting process, all these projects needed to go through government contracting, this was one of the biggest obstacles as need to find a private contractor willing to go through this, took a very long time (as usually with govt contracting) ☐ so couldn't reach the original target Capacity issues – they might have benefit if more seasoned people to implement the project, coming from that segment of the sector, most of the time expectation of the ILO is that it would provide techn and policy components of the program, to prove demonstration, we would need also construction people, the project was not ready for that 	
Recommendations	<ul style="list-style-type: none"> Recommendations to have more of these projects – green jobs provide a very good context for ILO context to become relevant, to find this very direct linkage to the global concerns of climate change and improving environment and natural resources; transformation is happening globally, art of skills agenda is to be up to date and respond to these new challenges, green skills is another context to look into especially in Asia Green skills – one area where ILO could have a complementary help – technical experts outside of their context ILO can focus on that technologies through skills are embedded in the country program, because sometimes there are other agencies working on the same topics, why ILO then, because you can show the link how it effects the employment prospects and opportunities for people, in their countries little focus on developing skills It would be interesting to see this at the regional level, at least in Asia Directions should be very clear → what you want to produce to avoid missed expectations They carry initiatives jointly with UNDP 	
Replicability	<ul style="list-style-type: none"> Yes. The mapping study highlights a number of other sectors where the concepts can be applied. 	
References and documentation	<ul style="list-style-type: none"> Interview contact person: Georginia Pascual (Green Business Asia) Documents: 2 page document on Green Jobs in Asia Project – Employment Creation Model in Philippines, Regional Office for the Asia and the Pacific Final Report on the process documentation of green construction materials for socialized housing (June 2012) – received from our contact person Website: 	

Green Jobs in Asia		Philippines Partner: ILO
	<ul style="list-style-type: none"> • 2 page leaflet on sustainable construction in Philippines • Link to the ILO relevant webpage on the project • Presentations from one training in 2011 in the Philippines. • Link to the ILO Green jobs program in Asia (5 countries) • Other material available from the meetings and training on the ILO website. 	

4. Strategies for Green Jobs Creation and Promotion in China (ADB)

Strategies for Green Jobs Creation and Promotion		China Partner: ADB
Type of project	policy and advisory technical assistance (TA)	
Budget and timeframe	USD 400 000, 2011-2014	
Sector	All	
Context	<p>As the world's second largest economy and with the world's largest population, the People's Republic of China's (PRC's) rapid economic expansion has significant impact on its environment. The government is responding by restructuring its economy and pursuing a green and inclusive growth path. At the same time, the government recognized that there is an urgent need to develop strategies to reconcile growth and environment, create green jobs and an adequate human resource base for emerging green sectors. In support of the PRC's development agenda, the Ministry of Human Resources and Social Security (MOHRSS), and the ADB initiated this technical assistance to formulate green jobs creation and promotion strategies, including introducing the concept and raising awareness of green jobs among the government and the public through advocacy initiatives, conducting strategic research on green jobs to inform policies and strategies, and encouraging innovation in green sectors to spur green employment and growth.</p>	
Related regulations/target	<p>The Chinese government has put emphasis on environmentally sustainable and inclusive growth in the Twelfth Five-Year Plan. China has no direct policy to promote green jobs, but there are some policies committed to energy conservation and energy efficiency that indirectly promote the development of green jobs. The consultant's report states that the government has emphasized the importance of promoting green jobs, including introducing the concept and raising awareness through advocacy initiatives; conducting strategic research on green jobs to inform policies and strategies; strengthening skills training for green jobs; and encouraging innovation in green and clean sectors to spur green employment. The government targets to create 2.2 million green jobs by 2020.</p>	
Objectives	<p>To strengthen capacity of the government and other stakeholders for promoting and creating green jobs in the PRC and to carry out a comprehensive analysis and development of a preliminary national framework for promoting green jobs. Additional relevant policy includes the "PRC circular economy promotion law" (2009) and the "National program on addressing climate change"</p>	
Definition of green jobs	<ul style="list-style-type: none"> • <i>Primarily Green Job means friendly to the environment in the original, saving energy, with zero potential environmental impact, or repair features for environment.</i> • <i>Progressive Green Job means those employments in the process of production that can improve energy efficiency and reduce carbon emissions, covering the majority of</i> 	

Strategies for Green Jobs Creation and Promotion		China Partner: ADB
	<p><i>manufacturing jobs.</i></p> <ul style="list-style-type: none"> • <i>End of Pipe Green Job refers to employment that is related to waste recycling, ecological restoration and remedies for environmental degradation.</i> 	
Stakeholders involved	Ministry of Human Resources and Social Security (executing and implementing agency)	
Results and impacts	<p>The main outputs were</p> <ul style="list-style-type: none"> • <i>policy recommendations for promoting and creating green jobs at the national level developed,</i> • <i>policy recommendations for promoting and creating pro-poor green jobs at the national level developed, and</i> • <i>publications on key TA findings and recommendations disseminated.</i> <p>The expected outputs included one main report and three subreports on:</p> <ul style="list-style-type: none"> • <i>pro-poor green jobs policies.</i> • <i>assessment of implications for skills training and retraining and capacity building, and identifying the training needs of disadvantaged groups, including low-income migrant labor.</i> • <i>green jobs creation in the two pilot provinces (Fujian and Hunan).</i> 	
Governance	No information available	
Success factors	<p>The TA generated the first definition of green jobs in the PRC context, and this definition needs to be further discussed and debated at the national level, to achieve consensus and develop a strategy for moving forward.</p> <p>The MOHRSS expressed strong satisfaction with the outputs related to gender aspects, as policy analysis showed that there is a need for a green jobs strategy to address gender and equity issues to ensure inclusive green growth, as policy analysis showed that growth in green jobs is likely to occur in gender differentiated ways. There is a need for a green jobs strategy to address these issues to ensure equitable and inclusive green growth.</p> <p>The MOHRSS also appreciated the experiences learned during an international study visit to Australia where participants witnessed innovative approaches to green jobs.</p> <p>The performance of MOHRSS was satisfactory. The MOHRSS provided guidance and support in the implementation of TA activities, design of the TA's various reports and feedback to consultants, and involvement of external peer reviewers.</p>	
Lessons learnt	<p>The agenda of green jobs is an important and emerging priority for the PRC, yet it is a new area where in-depth research, analysis (including job forecasting), and consultations are needed. A longer time period for implementation for the TA would have allowed for additional analysis, compilation of a policy note, establishment of green jobs hub, and further consultations with policy makers to review the findings and recommendations in order to develop a national framework for promoting green jobs. Future TA projects on green jobs may find it useful to include a resident mission staff as a core team member to deepen the technical engagement and dialogue.</p>	
Hampering factors	<ul style="list-style-type: none"> • <i>Limited time: TA consultants prepared recommendations for establishment of an envisaged green jobs knowledge hub, but there was not sufficient time to carry this out (however MOHRSS indicated interest to further collaborate with ADB to establish a green jobs knowledge hub). TA was extended 12 months to allow completion of data collection and analysis.</i> 	

Strategies for Green Jobs Creation and Promotion		China Partner: ADB
	<ul style="list-style-type: none"> Limited pool of qualified national consultants (green jobs is emerging concept): Led to start-up delays in recruitment of national consultants. Lack of standardized occupational classifications for green jobs: Key challenge. As green industries grow, however, this presents an opportunity for the PRC National Bureau of Statistics, industry line ministries, and MOHRSS to develop an official industry database concerned with green industries. The categorization of green industries would be a valuable planning tool, particularly aligning labor market and skills training with high growth strategic industries. 	
Recommendations	In order to expand and sustain the PRC's and ADB's efforts in this topic of strategic importance, to disseminate findings of this TA, and to encourage continued policy discussion around the recommendations, a session on green jobs and green skills should be included in a regional education forum planned to be held in the PRC in late 2014	
Replicability	No information available	
References and documentation	Short completion report Full report TA report	

5. Promoting green jobs through SME development in South Africa (ILO)

South Africa		Promoting green jobs through small and medium scale enterprise development Partner: ILO
Type of project	<ul style="list-style-type: none"> ILO project part of its Green Jobs Initiative Part of the Free State SME Development Initiative which seeks to create decent job opportunities through small and medium sized enterprise (SME) development. 	
Budget and timeframe	<ul style="list-style-type: none"> Operating from 1 June 2011 – 31 December 2014 Budget 4 500 000 EUR Co-funded by Flemish International Cooperation Agency (FICA) 	
Sector	Agribusiness, construction, social economy/social enterprise development, tourism and waste recycling (focus in South Africa) .	
Context (history and relevance of the project)	<p>Despite more than a decade of uninterrupted economic growth – until the 2010 financial crisis – the national unemployment rate in South Africa stood at 23.9% in the fourth quarter of 2011. The Free State Province registered the highest unemployment rate of all provinces at 29.4% especially among young people. Many young people try their fortune as entrepreneur, but often lack the necessary skills and support to make their small businesses profitable.</p> <p>Broad-based wealth creation through the promotion of decent work is thus a policy priority for the Government of South Africa and for the Provincial Government of the Free State Province. One of the strategic means to pursue this policy goal is the creation of decent employment opportunities through Small and Medium Enterprise (SME) Development.</p> <p>The project is based on a systemic approach for sustainable enterprise development focusing on strengthening a culture of entrepreneurship, improvement of the business environment and development of demand driven BDS in the priority sectors. In terms of waste recycling, the project has been supporting the private and public initiative "The Clean and Green Free State Campaign" to</p>	

South Africa Promoting green jobs through small and medium scale enterprise development Partner: ILO			
	<p>create awareness on waste management in the Province for two years. Besides, support was also being provided to the development of an Integrated Waste Management Plan for Manguang Metro Municipality.</p>		
Related regulations/ targets	<ul style="list-style-type: none"> • The Green Economy Accord – commits to improved waste recycling re-use and recovery and to identify and promote recycling projects to bring small entrepreneurs in the informal economy into viable commercial activities with improved working conditions → the main driver for this project • the National Environmental and Waste Act of 2008 • Republic of South Africa. Department of Environmental Affairs. National Waste Management Strategy 2011 → target to raise access to waste removal services by 2016 • The South African National Strategy for Sustainable Development and Action Plan (2011 – 2014) • The New Growth Pact 		
Objectives	<p>The overall project objective is to create decent employment opportunities for historically disadvantaged population groups in Free State Province through the development of sustainable small businesses. The overall project outcome is to support 2 000 sustainable community-based small businesses that have created at least 5,000 decent jobs. The immediate project objectives are:</p> <ul style="list-style-type: none"> • To nurture a stronger culture of entrepreneurship among the population of the Free State Province, • To create a more conducive policy, legal and regulatory framework (PLRF) for the start-up and operations of SMEs in the Free State Province • To strengthen the capacity of local organizations to provide sector-specific business development services (BDS) geared towards SMEs at community level • To stimulate BDS uptake among prospective and emerging entrepreneurs and their employees living and working in these communities 		
Definition of green jobs	<ul style="list-style-type: none"> • ILO definition was used → “jobs that reduce the environmental impact of enterprises and economic sectors, ultimately to levels that are sustainable while also meeting the criteria for decent work – adequate wages, safe conditions, workers’ rights, social dialogue and social protection”. • More precisely, green jobs are decent jobs that: <ul style="list-style-type: none"> • Reduce the consumption of energy and raw materials • Limit GHG emissions • Minimise waste and pollution • Protect and restore ecosystems. • To have decent green jobs is especially challenging in occupations in waste management and agriculture, so the decent work program is especially important in this context. 		
Stakeholders involved	<table style="width: 100%; border: none;"> <tr> <td style="vertical-align: top; width: 50%;"> <ul style="list-style-type: none"> • ILO – Regional Office • Provincial Government of the Free State Province • Flemish International Cooperation Agency (FICA) </td> <td style="vertical-align: top; width: 50%;"> <ul style="list-style-type: none"> • the Free State Department of Economic Development, Tourism and Environmental Affairs • The Manguang Metro Municipality • Free State Development Corporation </td> </tr> </table>	<ul style="list-style-type: none"> • ILO – Regional Office • Provincial Government of the Free State Province • Flemish International Cooperation Agency (FICA) 	<ul style="list-style-type: none"> • the Free State Department of Economic Development, Tourism and Environmental Affairs • The Manguang Metro Municipality • Free State Development Corporation
<ul style="list-style-type: none"> • ILO – Regional Office • Provincial Government of the Free State Province • Flemish International Cooperation Agency (FICA) 	<ul style="list-style-type: none"> • the Free State Department of Economic Development, Tourism and Environmental Affairs • The Manguang Metro Municipality • Free State Development Corporation 		

South Africa		Promoting green jobs through small and medium scale enterprise development	Partner: ILO
	<ul style="list-style-type: none"> University of the Free State (FDC) Industry (RAG, Petco, PACSA) 		
Results and impacts	<p>Since July 2011 the focus has been on establishing a proper knowledge base – prior to embarking on specific SME interventions – through several research studies:</p> <ul style="list-style-type: none"> SME research study with the University of the Free State (UFS) assessed the effectiveness of past and ongoing SME development support programmes. Sector studies of SME development and employment creation potential completed in agribusiness, construction, tourism, waste recycling and the social economy. Global review of SME Observatories and analysis of demand and supply of entrepreneurship culture promotion and education services concluded. Gap analysis of coordination between SME initiatives and Business Development Services providers finalized. Stocktaking of publications on private sector development in the Free State Province since 1994 completed. <p>The Free State SME Development Initiative commissioned a study to review the challenges and opportunities for small business development and decent job creation in the waste sector in three selected municipalities in the Free State. The report highlights the vulnerable situation of waste pickers, the important role of buy back centres and make recommendation for better waste management including sorting at source.</p> <p>The overall project outcome is sustainable community-based small businesses that have created at least 5000 decent jobs.</p>		
Governance	<ul style="list-style-type: none"> To nurture a stronger culture of entrepreneurship among the target group through awareness and promotion campaigns highlighting the importance of enterprise. In addition, a training programme was developed to enhance entrepreneurial skills in women and young people. At the level of the policy and the regulatory framework, the programme worked on a more coherent provincial and municipal policy on SME development. Activities will also be organised to foster synergy between the different SME development initiatives. As for the supporting services, the programme provided guidance to organisations that deliver services to SME. This will improve service provision to SMEs, not just in terms of financial services, but also with regard to sector-specific training and advice. For the provision of financial credit, the Free State Development Corporation (FDC), which is the provincial SME development agency, was closely cooperated with. Among starting and young entrepreneurs the active use of and the demand for financial and other supporting services has been promoted. Attention was devoted to HIV/AIDS at the workplace and to the promotion of green jobs. 		
Success factors	<ul style="list-style-type: none"> Report created awareness – don't ban them off the street, give them access to waste/accommodate them in different ways. Awareness that waste pickers assist the municipality in lessening the filling of landfills. 		
Lessons learnt	<ul style="list-style-type: none"> Private projects work – they help provide better jobs for waste pickers Initiatives from well-run municipalities also work (I.e. Project where they created a transfer stations where they formally employed waste pickers to sort the waste. 		
Hampering factors	<ul style="list-style-type: none"> Badly run municipalities can prevent the inclusion of waste pickers or even ban them from their (informal) jobs 		

Promoting green jobs through small and medium scale enterprise development	
South Africa	Partner: ILO
Recommendations	<ul style="list-style-type: none"> • Many project specific recommendations for South Africa, e.g. relief and welfare action – regular medical check-ups and training in health issues in waste collection • Broadening provincial efforts to the national level – to establish networks and links with national efforts, the involvement of the manufacturers of packaging materials from recycled waste • Support municipalities to properly manage landfill sites • Creating awareness. Recognize that waste pickers are valuable. • Work to see how to accommodate people or at least make it more accessible. You can support in a variety of ways - i.e. waste pickers have no protective clothing. • Support private initiatives which run well. • The whole management system should be looked at. If municipalities implement a two bag system this helps the waste pickers to provide easier access • Education, awareness, participation process that needs to be done in a coherent manner
Replicability	<ul style="list-style-type: none"> • No information available
References and documentation	<p>Interview contact person: Mr. Winnie Sereeco National Programme Officer, Ms. Julliet Williamson National Programme Coordinator, Catherina Schenck author of the report.</p> <p>Documents:</p> <p>South Africa - SME Observatory. Unrecognized Waste Management Experts: Challenges and Opportunities for Small Business Development and Decent Job Creation in the Waste Sector in the Free State (ILO,2012)</p> <p>ILO website</p> <p>The Clean & Green Free State Campaign booklet</p> <p>Flanders department of Foreign Affairs website and http://www.vlaanderen.be/int/en/fiche/employment-creation-through-small-and-medium-scale-enterprise-development-free-state-ilo</p>

Prior publications in the collection

Notes techniques n°1	Panorama des inégalités hommes – femmes dans le monde (Juin 2015)
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What is AFD?

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Design and layout: Elsa MURAT, AFD