

# **Draft briefing note on climate change and employment**

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<http://earthmind.net/labour>

## **1. Introduction**

This briefing note provides an overview of the employment implications of climate change, with a particular focus on the challenges of rural employment transition, enterprise development and job creation in developing countries.

It explores several topics including the phenomenon of climate change itself and responses to climate change including adaptation and mitigation. Regarding mitigation the report looks at the implications of the growing market for carbon.

The overall finding of the research undertaken for this briefing is that climate change policies and programmes are to date paying little if any attention to employment.

## **2. Climate change**

For the ILO today, whether or not climate change is a reality and why it is happening, is not an area for much discussion or debate. That governments, companies and communities are responding to climate change and that these responses may have direct or indirect implications for labour, however, are of substantive interest to the ILO and its tripartite networks.

### ***The problem...***

Nevertheless, it is important for those within the ILO who need to address climate change to have a basic understanding of what is happening to the planet's climate and why. In this respect the UN Framework Convention on Climate Change (UNFCCC) provides a good summary explanation of the problem:

"The average temperature of the earth's surface has risen by 0.74 degrees C since the late 1800s. It is expected to increase by another 1.8° C to 4° C by the year 2100 – a rapid and profound change – should the necessary action not be taken. ...

"The current warming trend is expected to cause extinctions. Numerous plant and animal species, already weakened by pollution and loss of habitat, are not expected to survive the next 100 years. Human beings, while not threatened in this way, are likely to face mounting difficulties. Recent severe storms, floods,

and droughts, for example, appear to show that computer models predicting more frequent "extreme weather events" are on target.

...

"Agricultural yields are expected to drop in most tropical and sub-tropical regions – and in temperate regions, too, if the temperature increase is more than a few degrees C. Drying of continental interiors, such as central Asia, the African Sahel, and the Great Plains of the United States, is also forecast. These changes could cause, at a minimum, disruptions in land use and food supply. And the range of diseases such as malaria may expand.

"Global warming is a 'modern' problem – complicated, involving the entire world, tangled up with difficult issues such as poverty, economic development, and population growth. Dealing with it will not be easy. Ignoring it will be worse."

### ***The cause...***

The UNCC also explains why this is happening and places the blame clearly on the industrial revolution:

"The principal reason for the mounting thermometer is a century and a half of industrialization: the burning of ever-greater quantities of oil, gasoline, and coal, the cutting of forests, and the practice of certain farming methods.

"These activities have increased the amount of "greenhouse gases" in the atmosphere, especially carbon dioxide, methane, and nitrous oxide. Such gases occur naturally – they are critical for life on earth; they keep some of the sun's warmth from reflecting back into space, and without them the world would be a cold and barren place. But in augmented and increasing quantities they are pushing the global temperature to artificially high levels and altering the climate. Eleven of the last 12 years are the warmest on record, and 1998 was the warmest year."

The IPCC is also clear on the human causes of climate change. According to a recent report - **Climate Change 2007: The Physical Science Basis** (IPCC, 2007), the Intergovernmental Panel on Climate Change (IPCC) is now very confident that human actions are responsible for climate change:

"Most of the observed increase in globally averaged temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations. This is an advance since the TAR's conclusion that "most of the observed warming over the last 50 years is likely to have been due to the increase in greenhouse gas concentrations". Discernible human influences now extend to other aspects of climate, including ocean warming, continental-average temperatures, temperature extremes and wind patterns." (page 10)

It is clear that those developing climate change policies believe that there needs to be major changes in the way the economy works. The implication, of course, is that this will have a direct impact on labour markets.

### **3. Impacts**

Though there has been a good deal of discussion about the economic impacts of climate change, there is much less discussion or understanding of the implications for labour.

In 2007, the UK government released a major report on the economics of climate change by Nicholas Stern. The summary of conclusions highlights the clear impact that climate change will have on developing countries. However, it also highlights the business opportunities that can arise out of responses to climate change:

"All countries will be affected. The most vulnerable – the poorest countries and populations – will suffer earliest and most..."

"Adaptation to climate change – that is, taking steps to build resilience and minimise costs – is essential. ... Adaptation efforts, particularly in developing countries, should be accelerated." (page 2)

"Action on climate change will also create significant business opportunities, as new markets are created in low-carbon energy technologies and other low-carbon goods and services. These markets could grow to be worth hundreds of billions of dollars each year, and employment in these sectors will expand accordingly."

"The world does not need to choose between averting climate change and promoting growth and development. Changes in energy technologies and in the structure of economies have created opportunities to decouple growth from greenhouse gas emissions. Indeed, ignoring climate change will eventually damage economic growth.

"Tackling climate change is the pro-growth strategy for the longer term, and it can be done in a way that does not cap the aspirations for growth of rich or poor countries." (page 3)

Nevertheless, the report does not assess the impact on employment and small and medium enterprise, except for an occasional reference such as the following from Chapter 5:

"The poorest in developed countries will be the most vulnerable to climate change. ... The most deprived proportion of the population are more likely to be employed in outdoor labour and therefore have little relief from the heat at work." (page 1)

"Lack of insurance could be particularly damaging for small and medium enterprises that will find it harder to access capital to protect against extreme events." (page 15)

Regarding the agriculture sector the UN Food and Agriculture Organisation (FAO) is aware of the importance of climate change, but again has not assessed what it means for farm labour.

However, *Global Warming and Agriculture: Impact Estimates by Country* (William R. Cline, 2007) is a new study that contributes to the increasing evidence that global warming will have a negative impact on agriculture in developing countries:

"This study reaches two fundamental conclusions. The first is that by late in this century unabated global warming would have at least a modest negative impact on global agriculture in the aggregate ... The second broad conclusion is that the composition of agricultural effects is likely to be seriously unfavourable to developing countries, with the most severe losses occurring in Africa, Latin America, and India. Although past studies have tended to recognize that losses will tend to be concentrated in developing countries, this study provides more comprehensive and detailed estimates on such losses than previously available." (page 2)

"Confirming previous studies, the results here indicate that the losses would be most severe in Africa (estimated here at 17 percent average loss and 18 percent median loss in agricultural capacity) and Latin America (13 percent average and 16 percent median loss)." (page 96)

Clearly the implications of this study are that there will be impacts on rural employment, especially in Africa, and that there is likely to be a need to retrain farmers and other rural workers to adapt to new conditions brought about by climate change.

Also, in the section of the report on the second **African Green Revolution Conference** entitled "Catalyst for action" the challenge of climate change is highlighted. Based on the findings of the Stern Report, this section makes clear that climate change needs to be taken into account in efforts to develop agricultural opportunities in Africa.

Though focused on the European Union and not developing countries, one of the most thorough reports on climate change and employment is: **Climate change and employment: Impact on employment in the European Union-25 of climate change and CO2 emission reduction measures by 2030**. This report was produced by a consortium led by the European Trade Union Confederation (ETUC) and was released early in 2007. Though focused on Europe and written from a trade union perspective, it offers one of the few in-depth analyses of the possible impacts of climate change on employment. As the report points out:

"little is known about the connection between climate change and employment" and "decisions on climate policies are rarely assessed from the standpoint of employment." (page 182)

The report looks at employment from sectoral, regional and temporal perspectives and outlines where the impacts are likely to occur and how severe they are likely to be. The findings include the following observations:

"The analysis of the relation between the likely effects of climate change in Europe, on the one hand, and economic activity and jobs in different sectors (agriculture, forestry, fisheries, tourism, finance/insurance, health, infrastructure and energy), on the other, show that ... there will be important redistribution effects between sectors and between countries. The impact will be more negative in southern Europe than in northern Europe. Primary sectors such as agriculture, forestry and fisheries will be affected

more severely than others. The attraction of tourist destinations will change. ....

"In recent years, a number of signs have shown that the climate may well not evolve slowly and progressively as has often been supposed. In that case, without rapid attenuation and adaptation measures, climate change will have a significant impact on economic activity and employment, with critical consequences in the latter half of the century." (pages 182-3)

Of relevance to developing countries is the observation in this report that natural resourced based employment is likely to be affected to a greater degree by climate change. For rapidly growing industrialising countries, like China and India, the industrialisation itself may provide the adaptations needed in the labour markets. However, for the rural economies of Africa, in particular, new adaptive strategies will be needed.

In this regard the 2006 newsletter on **Climate change: Why is Africa the most vulnerable region?** of SustainLabour also highlights the impact that climate change will have on Africa. As well, this newsletter reports on a workshop organised by SustainLabour:

"to provide Kenyan trade unionists an introduction to the climate change agenda, to facilitate their intervention in discussions and negotiations and to provide a space for dialogue between developed and developing countries' trade unionists on climate change."

Finally, there has been some work by the ILO on the impacts of climate change. In 2000, the ILO published **The impact of climate change policies on employment in the coalmining industry** on its website. It was prepared by the Australian Bureau of Agricultural and Resource Economics is an early example of an ILO report focusing on the employment impacts of climate change. The paper's summary states:

"An agreement under the United Nations Framework Convention on Climate Change for developed countries to curb greenhouse gas emissions is in the pipeline. The impact on sectoral production from such an agreement is projected to be significant. In particular, lower fossil fuel use in Annex I countries, so that they can meet their emission abatement targets, is projected to result in a 30 per cent fall in global coal production at 2010 under the less stringent emission reduction scenario ... Global

coal production is projected to fall by 42 per cent at 2010 under the more stringent [scenario] ...

"Falls in coal production lead inevitably to significant falls in coalmining employment. It is estimated that there will be between 1.5 million and 2.1 million fewer coalmining workers at 2010 under the less stringent and more stringent scenarios respectively, relative to the reference case."

Clearly more such analysis is needed to better understand the sectoral employment impacts of climate change.

## **4. Responses**

Responses to climate change can be grouped into two broad categories: *adaptation* and *mitigation*.

ILO programmes interested in the challenges of just employment transitions – for example among rural workers in Africa – will be most interested in policies and programmes addressing adaptation.

On the other hand, ILO programmes interested in the implications of climate change for small and medium enterprise development and employment creation may want to focus initially on mitigation responses, particularly in the context of the grown market for carbon offsets.

### ***Adaptation***

A recent green paper by the European Commission on adapting to climate change, explains adaptation as follows:

"Adaptation actions are taken to cope with a changing climate, e.g. increased rainfall, higher temperatures, scarcer water resources or more frequent storms, at present or anticipating such changes in future. Adaptation aims at reducing the risk and damage from current and future harmful impacts cost-effectively or exploiting potential benefits. ... Adaptation can encompass national or regional strategies as well as practical steps taken at community level or by individuals. Adaptation measures can be anticipatory or reactive. Adaptation applies to natural as well as to human systems."

Though developing adaptation technologies and services is potentially a business opportunity for developing country enterprises, the more

immediate opportunities that will generate employment appear to be in the area of mitigation.

### ***Mitigation***

As explained on the UNFCCC website:

"The ultimate objective of the Convention is the stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system."

This requires an overall reduction of greenhouse gas emissions which can be accomplished by economic actors – companies, governments, individuals – directly reducing their emissions or alternatively by offsetting their emissions through ensuring emission reductions by others.

Today's carbon markets trade in the reduction of emissions. Essentially one group of economic actors buy "emission credits" from other groups of economic actors. The production and sale of carbon offset credits – through either mandatory or voluntary carbon markets – is a potentially lucrative business opportunity for developing country enterprises.

## **5. Adaptation**

Though adaptation is a key concern of climate policy community, to date there has been little attention to the employment implications of adaptation policies and programmes. Nevertheless, there are some recent developments which may provide opportunities for the ILO.

A 2005 report entitled **A content analysis reports on climate change impacts, vulnerability and adaptation in Uganda** is indicative of the situation within developing countries with respect to climate change responses. It notes the "heavy dependency on natural resources and rain-fed agriculture" in Uganda coupled with an "inadequate human resources capacity for the enhancement of climate management systems. Overall, there are "low levels of awareness on climate change issues; and insufficient information dissemination on the existing indigenous adaptation knowledge/options" which means a good of deal of preparatory work needs to be undertaken to develop an adequate set of climate change responses.

Likewise in the 2006 note **Climate change, drought and pastoralism in the Sahel** commissioned by the World Initiative on Sustainable Pastoralism, the uncertainty of the impacts and adaptive capacities of pastoral communities is highlighted. The forward explains that:

"with the current marginalisation of pastoralists, their adaptive capacities may have been eroded and they may be more susceptible to climate change than other communities. Conversely, climate change could conceivably lead to the creation of more dryland resources that are suited to pastoralism, thus creating new opportunities for pastoralists to exploit. However, the likelihood and the implications of such changes are very uncertain." (page 1)

In response to such challenges, there is an interesting new programme under way on **Climate Change Adaptation in Africa (CCAA)**. Their home page explains:

"The Climate Change Adaptation in Africa (CCAA) research and capacity development program aims to improve the capacity of African countries to adapt to climate change in ways that benefit the most vulnerable. Building on existing initiatives and past experience, the CCAA program works to establish a self-sustained skilled body of expertise in Africa to enhance the ability of African countries to adapt.

The CCAA is a joint program of the International Development Research Centre (IDRC), Canada, and the Department for International Development (DFID), U.K."

One of the objectives of the CCAA is to "To support adaptation by rural and urban people, particularly the most vulnerable, through action research." In support of this objective, a new activity on "Monitoring adaptive capacity" has been developed:

"In June 2007, IDRC approved a research support project oriented towards monitoring and evaluation (M&E) of adaptive capacity. This project will help CCAA program staff and partners better assess how their activities are contributing to adaptation, and to use M&E as a capacity strengthening tool. It will facilitate a community of practice that will involve M&E experts, CCAA-supported project teams, and program staff, in reflecting on ways to evaluate the capacity of vulnerable groups, organisations, governments and ecosystems to adapt to climate change."

Further indication of the substance of the programme can be found in their **Summary of the first ten projects supported by the Climate Change Adaptation in Africa (CCAA) research and capacity development program**. This short document highlights some of the cutting-edge work underway by CCAA to support adaptation in Africa. For example, of one the projects:

"assesses the vulnerability of smallholder farming communities in Sub-Saharan Africa (SSA) to the effects of climate change and variability on agricultural productivity and livelihoods and identifies opportunities for enhancing the adaptive capacity of different categories of households and communities."

Another of the projects:

"intends to facilitate a process of interaction and learning where information/ knowledge from different sources (local, national, regional and international) is shared and integrated in a way that results in its novel use by stakeholders in agricultural innovation systems to better adapt to climate change and variability."

The CCAA is clearly undertaking adaptation work relevant to rural transitions and small and medium enterprise development in Africa. It would appear that the ILO should approach them to find out more about future plans to explore opportunities for collaboration, perhaps particularly with respect to retraining rural labourers.

Another new and most promising programme is the **USAID programme on adapting to climate variability and change** which is focused on strengthening the ability of USAID's programme to deal with climate change:

"USAID's climate change adaptation program seeks to assist Missions and other development partners to build resilience to climate change through a variety of activities. Adapting to climate change requires a hierarchy of linked efforts. We are linking information from observation systems to those lacking such information, improving their understanding of current climate, climate variability and future climate change. We are working to make earth observation information readily applicable to development decisions, including creating innovative applications and appropriate tools to then communicate that information to stakeholders and decision makers. Through interaction with local partners and new tools, we can better understand how environmental changes may impact sectors critical for

development. Once those impacts are understood, stakeholders need to assess and agree on preferred adaptation options. Then, on-the-ground actions are implemented to build the resilience of projects designed to promote economic development."

The programme has just released a most interesting new manual: **Adapting to climate variability and change: A guidance manual for development planning**. Its preface explains that the manual was developed to:

"to assist Missions and other partners to understand how climate change may affect their project outcomes and identify adaptation options to integrate into the design for more resilient projects."  
(page iii)

The manual presents a "six-step approach for assessing vulnerability and identifying and implementing climate change adaptations" which is labelled the "the V&A approach." Similar to a project cycle, the steps are:

- 1: Screen for vulnerability.
- 2: Identify adaptations.
- 3: Conduct analysis.
- 4: Select course of action.
- 5: Implement adaptations
- 6: Evaluate adaptations.

The manual explains these six steps in detail and also shows their applicability to issues related to employment. For example, the manual notes that:

"With agriculture accounting for half of GDP and 80% of jobs, the Ethiopian economy is sensitive to climate variability, particularly variations in rainfall." (page 1)

It appears that the ILO should approach USAID directly to explore opportunities for collaboration.

Another possible partner for the ILO is the **Global Mechanism**. Their website explains that:

"The Global Mechanism (GM) was established under Article 21 of the United Nations Convention to Combat Desertification (UNCCD), and began its operations in October 1997. ...

"[T]he GM is increasingly specializing in providing a range of financial advisory services to the country Parties to the

Convention in close cooperation with International Finance Institutions (IFIs) - in particular the World Bank Group, the International Fund for Agricultural Development (IFAD) and the regional development banks."

Climate change is an increasingly important issue in the context of desertification and the GM is accordingly engaging in both adaptation and mitigation activities under its programme on **Compensation for ecosystem services**. The programme document entitled **Cashing in on the links** explores opportunities to link financial support for the climate and desertification agendas and highlights the following areas and opportunities:

"Forestry-related

- afforestation/reforestation;
- avoided deforestation;
- sustainable forest/land management; and
- agro-forestry and silvopastoral systems.

Agricultural and rural sectors

- cropland and grazing land management; and
- biodigestion and other methane-based projects in the agricultural sector.

Biodiversity, watershed and soil protection

- biodiversity conservation; and
- watershed protection and management.

Energy-related

- (small) hydro projects (possibly combined with forestry activities as watershed protection);
- biofuel, bio-energy projects contributing to SLM;
- other (renewable) energy projects; and
- other/new project types that are compliant with the intervention criteria." (page 13)

All of these areas are relevant to the ILO's work on rural employment and enterprise development in Africa as well as other parts of the developing world.

Finally, regarding guidance for small and medium enterprises, in 2006, the Canadian Chamber of Commerce has produced a guide entitled **A guide to climate change for small- to medium-sized enterprises: How to plan for climate change, reduce operating costs and develop new business opportunities**. The guide explains risks and opportunities and explores both adaptation and mitigation responses. Regarding adaptation the guide explains:

"To anticipate and/or respond to the changing climate, businesses may need to make changes. These might include such actions as re-locating a business to avoid the risk of flooding or planting new crops that can be grown in hotter, drier summer weather. Businesses and business sectors are particularly vulnerable to climate change if they are currently affected by weather events, and/or make long-term investments, especially in climate-sensitive infrastructure." (page 12)

Developing such guidance for small and medium enterprises in developing countries and including a focus on employment creation could become a contribution by the ILO to the topic of climate change and employment.

## **6. Mitigation**

Though there is a continued interest in direct emission reduction by polluters, with the establishment of a mandatory offset market under the Kyoto Protocol, today there is great deal of focus on carbon markets. The mandatory market is further augmented by the innovative developments in the voluntary carbon market.

The ILO programmes focusing on small and medium enterprise development and employment creation, in particular, may want to explore the development of the carbon market, its players, its standards and its financial flows. In this context, there may be an opportunity to identify ways in which enterprise development and employment creation can be enhanced by economic activity within the carbon market.

The **World Bank's** 2007 report on the carbon market explains that:

"The carbon market grew in value to an estimated US\$30 billion in 2006 (€23 billion), three times greater than the previous year. The market was dominated by the sale and re-sale of European Union Allowances (EUAs) at a value of nearly \$25 billion under the EU ETS (€19 billion). Project-based activities primarily through the Clean Development Mechanism (CDM) and Joint Implementation (JI) grew sharply to a value of about US\$5 billion in 2006 (€3.8 billion). The voluntary market for reductions by corporations and individuals also grew strongly to an estimated US\$100 million in 2006 (€80 million)."

The report also highlights the serious challenges facing both the regulated or mandatory markets and the unregulated or voluntary markets:

"In the emerging fragmented carbon marketplace, efforts to mitigate carbon are multiplying in both the regulated and the unregulated sectors.

"For **regulated markets**, emissions trading can help achieve a given level of emission caps efficiently by setting an appropriate price, but this requires that policymakers set the caps consistent with the desired – and scientifically credible – level of environmental performance. ...

"Markets can, to a certain extent, accommodate the appetite that individuals and companies in Europe, Japan, North America, Australia and beyond have for carbon emission reductions that go well beyond what their law makers require of them. This high-potential **voluntary segment**, however, lacks a generally acceptable standard, which remains a significant reputation risk not only to its own prospects, but also to the rest of the market, including the segments of regulated emissions trading and project offsets."

*(emphasis added)*

In short, though there are many challenges facing the carbon market, there are now real opportunities for enterprises from developing countries. Opportunities exist both in the mandatory markets, particularly under the Clean Development Mechanism of the UNFCCC's Kyoto Protocol. They also exist among the myriad of carbon brokers operating in the voluntary markets.

A major challenge facing enterprise development and employment creation in developing countries is to identify carbon offset export opportunities in both the mandatory carbon market and the voluntary carbon market.

## **7. Mandatory markets**

Mandatory carbon markets – also known as regulated or compliance markets – are for the most part linked to the Kyoto Protocol. These included emission trading schemes among developed country parties to the Protocol and "joint implementation" (JI) schemes between developed countries and countries with economies in transition.

Most importantly, for developing country enterprises is the **Clean Development Mechanism (CDM)** which trades in project-based Certified Reduction Credits (CERs). UNEP's guidebook to the CDM explains:

"The CDM allows an Annex I party to implement a project that reduces greenhouse gas emissions or, subject to constraints, removes greenhouse gases by carbon sequestration in the territory of a non-Annex I Party. The resulting certified emission reductions, known as CERs, can then be used by the Annex I Party to help meet its emission reduction target."

The advantage of working with the CDM is that it results in "certified" credits. The disadvantage is that it is very complex. Fortunately, a new initiative under the CDM has recently been launched which is sure to facilitate better trade between developing country exporters and developed country importers – the **CDM Bazaar**:

"The UNFCCC CDM Bazaar is a Web-based facility which serves as a platform for exchange of information on Clean Development Mechanism (CDM) project opportunities. ...

"The UNFCCC CDM Bazaar covers supply of and demand for CDM projects, i.e. the actions taken by project sellers, buyers and service providers (in a broad sense).

"The key objective of the Bazaar is to facilitate the creation of an efficient global CDM market through sharing information related to project activities and transactions of Certified Emissions Reductions (CERs) among stakeholders worldwide."

Launched in September 2007, the CDM Bazaar should probably be the first place for a potential developing country enterprise to visit to seek out possible developed country offset buyers. Already hundreds of sellers and buyers have registered on the site.

The employment criteria and implications of CDM trades, however, are not well articulated. All CDM trades are supposed to offset carbon and at the same time promote sustainable development. Yet, the role of employment policies and programmes in broader programmes of sustainable development are also not well articulated. Hence, for the ILO, engaged with the mandatory market operated under the CDM provides one strategy for more fully integrating employment considerations into sustainable development.

## 8. Voluntary markets

The increasing interest of large multinational companies to offset their carbon emissions has generated new demands for offsets. As a 2006 report by **Business for Social Responsibility** and the **Ecosystem Marketplace** explains:

"To meet rising interest, the number of voluntary carbon offset providers has grown dramatically ... The diversity of offset projects is constantly growing, from reforestation to soil tillage to carbon capture.

The report further highlights the various reasons for this increased demand:

"Today, the motivations for companies engaging in voluntary carbon markets are as diverse as the players and include:

- **Fulfilling corporate greenhouse gas reduction targets**, especially when internal reductions are not feasible or cost-effective;
- **Gaining carbon market experience** in order to increase authority and influence in policy discussions about climate change and greenhouse gas regulation;
- **Preparing for potential regulatory requirements** that may include a range of offset approaches and partnerships;
- **Enhancing brands and/or differentiating products**, including being able to offer products that are carbon neutral at a price premium; and
- **Attracting investors**, particularly in light of increasing investor awareness of risks associated with greenhouse gas emissions in a carbon constrained future."

For the developing company enterprises, there is clearly a business opportunity. The challenges will include finding the right voluntary carbon brokers with whom to engage.

For the ILO the complexity and fluidity of the emerging voluntary carbon market presents challenges. Nevertheless, it appears to be a market offering substantive opportunities for the development of small and medium enterprises and the creation of new employment opportunities in developing countries.

## 9. Carbon standards

A major challenge in the carbon market is the development and adoption of carbon offset standards. In the voluntary carbon market there are at least five/six standards which are in use by various carbon offset brokers. A brief introduction to these standards based on the **Overseas Development Institute** briefing noted in the appendix follows.

For the ILO, it is clear that the standards need to be evaluated from the perspective of the ILO's labour conventions and standards. In particular, the focus of these standards on issues such as just transition, enterprise development and employment creation need to be analysed.

### **CDM Projects**

[cdm.unfccc.int](http://cdm.unfccc.int)

Though the CDM process is not a strictly speaking a standard, it provides an important benchmark for all of the carbon offset standards:

"Article 12 of the Kyoto Protocol defines the clean development mechanism. The purpose of the clean development mechanism shall be to assist Parties not included in Annex I in achieving sustainable development and in contributing to the ultimate objective of the Convention, and to assist Parties included in Annex I in achieving compliance with their quantified emission limitation and reduction commitments under article 3."

*Objective:* Emission reduction & contributing to sustainable development in developing countries.

*Scope:* CDM projects: renewable energy, energy efficiency & afforestation/reforestation projects.

*Assessment process:* Not a standard in itself, but the 7 stage project cycle sets out standardised components for any project which are approved by the CDM Executive Board. Requires 2 different 3rd party verifiers to validate & certify projects. For small-scale projects the same entity can be used for both steps.

### **Carbon Neutral Protocol**

[carbonneutral.com](http://carbonneutral.com)

This is an example of a framework standard behind the brand of one of the more well know voluntary carbon brokers. They explain:

"We registered the CarbonNeutral® trademark in the 1990s. When you see it applied to a product, service or activity, it signifies that:

- CO2 emissions have been independently measured
- 100% of emissions have been reduced to net zero through a mix of internal reductions (change of a manufacturing process for example) and best practice external reductions (carbon offsetting)
- there will be clear communication around the proposition.

There are a set of rules - known as the CarbonNeutral Protocol - governing what the CarbonNeutral brand mark stands for and how it can be applied. These rules are discussed and agreed with an Independent Advisory Group of NGOs, scientists and business, and they ensure any CarbonNeutral claims have real integrity and follow best practice."

*Objective:* Effective action on climate change.

*Scope:* Recognises that the practical and economic feasibility of actions to reduce greenhouse gas emissions are highly variable between different types of organisations.

*Assessment process:* Includes verification checks on emission assessments, emission reduction actions, certified offsets, EU allowances, non-certified offsets (VERs), and communication.

***Climate, Community and Biodiversity Project Design Standards (CCB Standards)***

[climate-standards.org](http://climate-standards.org)

With its emphasis on community, this standard appears to be one that might be receptive to incorporating criteria related to retraining or rural enterprise development.

"The Climate, Community and Biodiversity Project Design Standards (CCB Standards) evaluate land-based carbon mitigation projects in the early stages of development. The CCB Standards foster the integration of best-practice and multiple-benefit approaches into project design and evolution. The Standards:

- Identify projects that simultaneously address climate change, support local communities and conserve biodiversity.

- Promote excellence and innovation in project design.
- Mitigate risk for investors and increase funding opportunities for project developers."

*Objective:* Minimize climate change, support sustainable development & conserve biodiversity.

*Scope:* CDM: land-use, land-use change & forestry projects (LULUCF). Also used as a benchmark for voluntary market projects.

*Assessment process:* Project documentation assessed against 15 essential & 8 optional indicators. Then ranked as 'approved', 'silver' or 'gold'. 3rd party verification required & CDM accredited verifiers are recommended.

**GHG Protocol**  
ghgprotocol.org

With its strong support from multinationals, this protocol may be able to incorporate small and medium enterprise development up corporate supply chains.

"The Greenhouse Gas Protocol (GHG Protocol) is the most widely used international accounting tool for government and business leaders to understand, quantify, and manage greenhouse gas emissions. The GHG Protocol Initiative, a decade-long partnership between the World Resources Institute and the World Business Council for Sustainable Development, is working with businesses, governments, and environmental groups around the world to build a new generation of credible and effective programs for tackling climate change."

*Objective:* Emission reductions.

*Scope:* Mandatory emission targets, voluntary programs, company targets.

*Assessment process:* Framework of guidance & standards for reporting & accounting for emissions. Discusses need for verification of information reporting. Some guidance for 3rd party verification.

**Gold Standard for voluntary offsets**  
cdmgoldstandard.org

Focused on sustainable development and with strong support from NGOs, this standard may be able to include some consideration of fair labour policies related to climate change.

"The Gold Standard Foundation offers a quality label to CDM/JI and voluntary offset projects, fetching premium prices. Renewable energy and energy efficiency projects with sustainable development benefits are eligible. The Gold Standard is endorsed by 37 non-governmental organizations worldwide. Gold Standard projects are preferred by a range of government and private actors."

*Objective:* Sustainable development & environmental integrity.

*Scope:* Voluntary market: renewable energy & end use energy efficiency improvement.

*Assessment process:* Projects scored according to sustainable development. High scores carry a premium. 3rd party verification required & CDM accredited verifiers are recommended. Targeted random sampling and annual independent auditing of sample of projects.

### **Voluntary Carbon Standard (VCS)**

v-c-s.org

This standard may well become the one to watch.

"Since late 2005, The Climate Group (TCG), the International Emissions Trading Association (IETA) and the World Economic Forum Global Greenhouse Register (WEF) have been working together to develop the Voluntary Carbon Standard (VCS). The VCS is designed to be a global benchmark standard for project-based voluntary emission reductions that provides a degree of standardization to the Voluntary Carbon Market and creates a credible voluntary emission reduction credit, the VCU, that can be trusted, traded and used by VCM participants."

*Objective:* Emission reductions.

*Scope:* Voluntary market: energy efficiency projects.

*Assessment process:* Ten threshold criteria to be met. GHG Protocol & ISO Standards used for auditing, verification & certification. It also sets

out a 5 step process for credit registration a registry for tracking credits. 3rd party verification required. Recommends same accredited verifiers as CDM.

## **10. Carbon finance**

With the growth of carbon markets – both mandatory and voluntary – the amount of available carbon finance is also expanding. For example:

"The World Bank Carbon Finance Unit (CFU) uses money contributed by governments and companies in OECD countries to purchase project-based greenhouse gas emission reductions in developing countries and countries with economies in transition. The emission reductions are purchased through one of the CFU's carbon funds on behalf of the contributor, and within the framework of the Kyoto Protocol's Clean Development Mechanism (CDM) or Joint Implementation (JI)."

Or in the City of London,

"Climate Change Capital is a leading investment banking group specialising in the commercial opportunities created by a low carbon economy. It advises and invests in companies who recognise that combating global warming is both a necessity and an economic opportunity. Its activities, which also include investment management and financing emission reductions, aim to make the world's environment cleaner while delivering attractive financial returns."

As enterprises in developing countries grow their carbon offset businesses, they will need to engage with carbon financiers as well as carbon offset brokers. The question for the ILO is whether these carbon finance providers consider the labour implications of their investments.

## **11. Carbon market critics**

It probably now safe to say that most political leaders, scientists and conservationists believe that global warming is a real and significant threat. However, the same cannot be said for carbon markets. There is much doubt about the ability of these markets to deliver substantive climate change mitigation and there is much criticism regarding what impacts they are actually likely to have.

The ILO should be aware of the views of the critics for at the very least they may provide some guidance on with whom developing country enterprises should do business and with whom they should not. At some stage, the ILO may even consider developing a labour guide to the carbon market which will assess its impacts on the labour market, enterprise development and employment creation.

Three examples of recent articles critical of carbon markets follow:

- **The great global warming swindle: The West is running a protectionist racket against the developing world** (The Spectator, 2007)

This article from a popular conservative British magazine argues that with the increasing support for offset markets, "politics appear to be shifting the burden of cutting carbon emissions on to the world's poor: they must be kept in a state of noble peasantry so that we can carry on living pretty much as before."

- **Look, no footprint: Can you really cleanse your carbon sins by paying for a few faraway trees or solar panels?** (New Scientist, 2007)

From a well respected science magazine, the conclusion is clear: "Buying offsets may assuage your guilt, but does it actually work? The answer is a resounding maybe."

- **Carbon negative: The offsetting industry needs to be as clean as it is green** (The Times, 2007)

Once again, the carbon markets are considered suspect: "Highly publicised offsetting proposals in Central America and South Africa are also vulnerable to the charge that they are either subsidising moves that would have occurred anyway or delivering far less than implicitly promised."

## **12. What is to be done?**

This draft briefing note has highlighted some of the linkages between the responses to climate change and employment, particularly with respect to rural employment and enterprise development in developing countries. In so doing it has also mapped some of the relevant work that has been undertaken by other international agencies ranging from the UNFCCC and the World Bank to NGOs.

Though there is a great deal being done in response to climate change – both in the policy arena and in the market economy – it is clear that this is little focus on the employment implications of climate change and how response to climate change relate to the plight of workers and the prospects for small and medium enterprises in developing countries.

For the ILO there are clear opportunities and challenges to engage more fully in the evolution of climate change policies and carbon markets to ensure that employment considerations are more fully integrated. New programmes by the IDRC, USAID, and the Global Mechanism, for example, provide interesting opportunities for building programmatic partnerships within the development community. The employment implications of the various carbon market standards, however, provide new challenges to the ILO's labour standards standards and conventions.

Perhaps the next step is to explore internally within the ILO where there is capacity and interest to take this topic forward. As this draft briefing note has shown, there are several options for going forward – both with respect to adaptation and to mitigation. For the ILO, it will be important to develop its response to climate change strategically.

## **Appendix A: More on climate change**

### **UNFCCC guide: Feeling the heat**

[http://unfccc.int/essential\\_background/feeling\\_the\\_heat/items/2917.php](http://unfccc.int/essential_background/feeling_the_heat/items/2917.php)

"This guide provides an introduction to climate change and shows how the international community is responding." The quotes in section 1 above are taken from this guide.

### **IPCC website**

<http://www.ipcc.ch/>

### **Introduction to climate change (Sustainlabour, 2007)**

This PowerPoint presentation by Sustainlabour - the International Labour Foundation for Sustainable Development - provides an overview of the issues, particularly from an African perspective.

### **Emissions from animal feeding operations (USEPA, 2001)**

This report for the US Environmental Protection Agency is indicative of the type of focused analysis required to identify sources of climate change emissions which may have direct or indirect impacts on rural employment and enterprise development. It explains:

"This report presents the results of a preliminary investigation into air pollution from large animal feeding operations (AFOs) for the beef, dairy, swine, and poultry (broilers, layers, and turkeys) animal sectors. ...

"Animal feeding operations can emit ammonia (NH<sub>3</sub>), nitrous oxide (N<sub>2</sub>O), hydrogen sulphide (H<sub>2</sub>S), carbon dioxide, methane (CH<sub>4</sub>), total reduced sulphur (TRS) compounds, volatile organic compounds (VOC), hazardous air pollutants (HAP), and particulate matter (including PM<sub>10</sub> and PM<sub>2.5</sub>). The substances emitted and the quantity of emissions can vary substantially depending on the design and operation of each facility. Factors that influence emissions include feeding regimen, the type of confinement facility, type of manure management system (storage, handling, and stabilization), and the method of land application." (page xi)

### **BBC guide to climate change**

[http://news.bbc.co.uk/2/shared/spl/hi/sci\\_nat/04/climate\\_change/html/climate.stm](http://news.bbc.co.uk/2/shared/spl/hi/sci_nat/04/climate_change/html/climate.stm)

A user-friendly animated introduction to climate change.

### **The problem of climate change** (ClimateSense, 2007)

A concise two-page introduction.

### **Climate change controversies: A simple guide** (The Royal Society, 2007)

An "overview of the current state of scientific understanding of climate change to help non-experts better understand some of the debates in this complex area of science."

## **Appendix B: More on impacts**

### **Stern Review on the Economics of Climate Change**

[http://www.hm-treasury.gov.uk/independent\\_reviews/stern\\_review\\_economics\\_climate\\_change/sternreview\\_index.cfm](http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/sternreview_index.cfm)

Of particular interest are the following sections:

- Executive summary
- Summary of conclusions
- Chapter 5: Costs Of Climate Change In Developed Countries

### **FAO image regarding the agriculture sector and climate change**

<http://www.fao.org/NEWS/FACTFILE/FF9721-E.HTM>

### **Global Warming and Agriculture: Impact Estimates by Country** (William R. Cline, 2007)

<http://www.cgdev.org/content/publications/detail/14090>

Of particular interest is the following:

- Press release
- Press release - New York Times
- Chapter 1: Introduction and overview
- Chapter 2: Brief survey of existing literature
- Chapter 5: Country-level agricultural impact estimates
- Chapter 7: Conclusion

## **African Green Revolution Conference**

<http://www.africangreenrevolution.com/en/index.html>

Worth noting are the following:

- Full conference report
- Section on "Catalyst for action"

The website states:

"The second African Green Revolution Conference was held in Oslo, Norway from August 30 - September 1. It gathered leading experts on sustainable agricultural development, including government representatives from across Africa...

"The Oslo Conference has become the prime venue for Public-Private Partnership (PPP) aimed at increasing agricultural productivity in Africa. ...

"Under the theme of Partnership for Productivity, the 2007 Conference community reviewed the progress of recent initiatives, identified important innovations, and discussed potential public-private partnerships that could extend agricultural opportunities to more of Africa's people. A common thread throughout the conference was an emphasis on improving the productive environment for smallholder farmers."

## **Climate change and employment: Impact on employment in the European Union-25 of climate change and CO2 emission reduction measures by 2030**

Of special interest are the following:

- Full report
- Synthesis
- Press release

## **The impact of climate change policies on employment in the coalmining industry (ILO, 2000)**

This paper is published on line at:

<http://www.ilo.org/public/english/dialogue/sector/papers/impact/index.htm>

Of particular interest are the following:

- Summary
- Conclusions

## **Appendix C: More on responses**

**Adapting to climate change in Europe - Options for EU action (EC, 2007)**

This green paper from the European Commission looks at adaptation challenges in Europe within a global context.

**Climate change 101: Understanding and responding to global climate change (Pew Center, 2006)**

This primer outlines the challenges and opportunities for emission reduction, with a focus on the US situation where the government has not been particularly supportive of policies to address global warming.

**Stocktaking of progress on integrating adaptation to climate change into development co-operation activities (OECD, 2007)**

This OECD report highlights the work that needs to be done to ensure that climate change is addressed within development assistance programmes

**Walking the talk on climate and energy (WBCSD, 2007)**

A flyer by the World Business Council for Sustainable Developing promoting corporate responsibility on climate change.

**Policy Directions to 2050 - A business contribution to the dialogues on cooperative action (WBCSD, 2007)**

The purpose of this major report is "to identify and explore policy options to sustain economic growth while transforming the ways we access, produce and consume energy."

## **Appendix D: More on adaptation**

**Climate Change Adaptation in Africa (CCA)**

[http://www.idrc.ca/en/ev-94424-201-1-DO\\_TOPIC.html](http://www.idrc.ca/en/ev-94424-201-1-DO_TOPIC.html)

An interesting new programme managed by IDRC with funding from DFID.

**USAID programme on adapting to climate variability and change**

[http://www.usaid.gov/our\\_work/environment/climate/policies\\_prog/vulnerability.html](http://www.usaid.gov/our_work/environment/climate/policies_prog/vulnerability.html)

A promising new programme underway by a major development assistance agency.

**CRISTAL (Community-based Risk Screening Tool – Adaptation & Livelihoods)**

[http://www.iisd.org/security/es/resilience/climate\\_phase2.asp](http://www.iisd.org/security/es/resilience/climate_phase2.asp)

This initiative is component of the International Institute for Sustainable Development (IISD) programme on livelihoods and climate change. The website explains that Cristal:

"enables project planners and managers to (i) assess an intervention's impact on local capacity to cope with climate stress, and (ii) think about how to adjust project activities so that at the very least they don't undermine local coping capacity and, where possible, they further enhance coping capacity.

"Field tests of CRiSTAL were conducted in Mali, Bangladesh, Tanzania, Nicaragua and Sri Lanka. Feedback from each of the tests allowed project partners to fine-tune CRiSTAL, rendering it more useful and usable for project managers interested in mainstreaming climate risk into their field work."

The CRiSTAL Tool can be downloaded from:

[http://www.sei-us.org/Cristal/Cristal\\_Setup.exe](http://www.sei-us.org/Cristal/Cristal_Setup.exe)

The **brochure** explains:

"Community-level projects are rarely designed with a look to the implications of climate change, and especially how they might affect local adaptive capacity. Without a mechanism for assessing the role and impact of a project vis-à-vis climate adaptation, it is often difficult for project planners and managers to design activities that actually foster adaptation and minimize maladaptation." (page 1)

**Apollo Alliance**

<http://home.apolloalliance.org/home2.html>

Of particular interest are the following:

- The Apollo jobs report (2004)
- Ten-point plan for good jobs and energy independence (2007)
- Community jobs in the green economy (2007)

Based in the US:

"The Apollo Alliance is a broad coalition within the labour, environmental, business, urban, and faith communities in support of good jobs and energy independence. It has been endorsed by the AFL-CIO and 23 international labour unions as well as a majority of national environmental organizations. ...

The Apollo Alliance is pursuing a \$300 billion, public-private program to create three million new, clean energy jobs to free America from foreign oil dependence in ten years. It is a program that reinvests in the competitiveness of American industry, rebuilds our cities, creates good jobs for working families, and ensures good stewardship of both the economy and our natural environment."

Apollo is promoting a pro-active response to climate change by seeking ways to create new jobs in the "green economy" which at the same time reduce America's dependence on foreign oil. For example, a recently released report on "Community jobs in the green economy" explains:

"The emerging green economy holds great promise for America's cities, and especially for our low-income, heavily minority urban communities. Every aspect of clean energy development, from manufacturing to construction, operating and maintenance, can create good jobs, clean up the air and water, and save consumers money on their energy bills. Every city and community in the United States has some potential to capitalize on this new economy, whether through good wind or solar resources or through retrofit programs to bring old, dilapidated buildings up to energy efficiency codes." (page 19)

By linking decent job creation to energy self-sufficiency, Apollo is adopting both adaptation and mitigation responses that are sustainable in terms of enterprise development and employment creation.

**Decoupling development of employment and use of nature** (Wuppertal, 2007)

A PowerPoint presentation prepared by Prof. Dr. Peter Henricke and Dr. Wolfgang Irrek for an ETUC conference which addresses the challenges of "decoupling" employment creation from global warming. It looks at how energy efficiency can generate new jobs and proposes the following new paradigm:

"Make kilowatt hours and tons redundant and not people!"

### **Global Mechanism**

<http://www.global-mechanism.org>

A possible inter-governmental partner for the ILO with a special interest in the drylands of Africa. Of particular interest is the following report:

- **Cashing in on the links between climate change and land degradation** (GM, 2007)

**Adapting to climate change: Natural resource management and vulnerability reduction** (2002)

Produced by IUCN-The World Conservation Union in collaboration with is an example of the type of guidance coming out of the nature conservation / sustainable development community on climate change adaptation. It notes the employment impact on the poor and proposes that investing in natural resources may be a way to adapt to this challenge:

"Agriculture, forestry and fishing are directly responsible for 50% of all jobs worldwide and 70% of jobs in sub-Saharan Africa, East Asia and the Pacific.<sup>80</sup> Because the poor have a narrow and geographically concentrated set of livelihood sources, they are most vulnerable to losing their livelihoods during disasters. ...

"The poor usually have the least choice among strategies, receive the least assistance from government authorities and are therefore most dependent on the state of the environment for providing alternative livelihoods. Thus, investing in the natural resource base that sustains their livelihoods may have a direct positive impact on their immediate lives and long-term resilience to climate variability." (page 28)

## **Appendix E: More on mitigation**

**Carbon Markets** (Ecosystem Marketplace, 2006)

A concise two-page overview.

### **State and trends of the carbon market 2007** (World Bank)

Released at the Carbon Expo 2007 in May in Cologne, this report provides one of the best overviews of the carbon market today. For example, though the developing world is now a major player, the report shows how carbon offset exports from the developing world are dominated by China (60%) and India (12%).

### **The international carbon reduction market** (Green Markets, 2006)

An introductory PowerPoint presentation of the carbon markets

### **Understanding the carbon market** (CarbonNetural Company, 2007)

A detailed PowerPoint overview of the regulated and voluntary carbon markets.

### **Guide to the carbon market** (TNC, 2007)

A guide for conservationists with a focus on developing countries produced by The Nature Conservancy, one of the largest conservation NGOs.

## **Appendix F: More on mandatory markets**

### **CDM Bazaar - How to use the Bazaar**

<http://www.cdmbazaar.net/howtouse.asp>

This page is the starting place for using this new web portal for trades in the mandatory carbon market.

### **CDM information and guidebook** (UNEP, 2004)

A comprehensive introduction to the CDM system worth reviewing before going to the CDM website.

### **The Clean Development Mechanism: A user's guide** (UNDP, 2003)

Another comprehensive introduction the CDM system which is also worth reviewing before working through the CDM website.

### **Clean Development Mechanism**

<https://cdm.unfccc.int/index.html>

The website of the CDM. Filled with all the details and the complexities of the system.

### **Capacity development for the CDM**

<http://www.cd4cdm.org/>

Website of a UNEP-run project "to help to establish GHG emission reduction projects that are consistent with national sustainable development goals, particularly projects in the energy sector.

### **CDM: History, status, and prospects** (Review of Environmental Economics and Policy, 2007)

This academic article provides an in depth overview of the development of the CDM and where it is today.

### **CDM's contribution to sustainable development: A review of the literature** (UNEP, 2005)

A good overview of the CDM from a sustainable development perspective.

## **Appendix G: More on voluntary markets**

### **Guide to carbon offsetting** (F&C, 2007)

A 4-page introduction by an investment house.

### **The voluntary carbon market: Status & potential to advance sustainable energy activities** (Green Markets, 2007)

A concise PowerPoint overview with an emphasis on the energy sector.

### **Offsetting emissions: A business brief on the voluntary carbon market** (Business for Social Responsibility & Ecosystem Marketplace, 2006)

This document is a very useful introduction to the voluntary markets from a buyer's perspective.

### **A consumer's guide to retail carbon offset providers** (Clean Air-Cool Planet, 2006)

This document provides an excellent introduction to the voluntary market and its brokers from a consumer's perspective.

**Exploring the market for voluntary carbon offsets** (IIED, 2006)

A comprehensive introduction to voluntary markets.

**Voluntary offsets for air-travel carbon emissions: Evaluations and recommendations of voluntary offset companies** (Tufts Climate Initiative, 2007)

Another good review of the carbon offset brokers.

**Voluntary Carbon Offsets Information Portal**  
<http://www.tufts.edu/tie/tci/carbonoffsets/>

A joint project of the Stockholm Environment Institute and the Tufts Climate Initiative.

## **Appendix H: More on carbon standards**

**Briefing paper: Can standards for voluntary carbon offsets ensure development benefits?** (Overseas Development Institute, 2007)

A concise overview of some of the key offset standards in use today and an assessment of their relevance to sustainable development.

**Carbon connoisseur** (The Economist, 2007)

Short article about "the baffling menu of emissions-offset options."

## **Appendix I: More on carbon finance**

**World Bank Carbon Finance Unit (CFU)**  
<http://www.carbonfinance.org>

**Climate Change Capital**  
[www.climatechangecapital.com](http://www.climatechangecapital.com)

**IFC Carbon Finance Unit**  
<http://www.ifc.org/carbonfinance>

**New Carbon Finance**  
<http://www.newcarbonfinance.com/>

### **Carbon finance for Africa – An investor’s guide (Africappractice, 2005)**

"The Guide aims to address the barriers to investment in CDM projects and compliment the extensive in-country capacity building by bi-lateral and multi-lateral development agencies."

### **Sustainable energy and carbon finance: Unleashing the power of the private sector to mitigate climate change (IFC, 2007)**

An introduction to carbon finance and what the IFC has to offer.

### **Guidebook to financing CDM projects (UNEP, 2007)**

An excellent new guide "aimed at both developing country financial institutions and at CDM project proponents."

## **Appendix J: Glossaries**

Climate change policies and responses have developed their own large and often confusing terminology. This appendix provides web links to useful glossaries of terms. At some point the ILO may want to consider developing its own guide to the climate change and the terms used to address this topic.

#### **Climate change glossary**

[pewclimate.org/global-warming-basics/full\\_glossary/glossary.php](http://pewclimate.org/global-warming-basics/full_glossary/glossary.php)

#### **Glossary of climate change acronyms**

[unfccc.int/essential\\_background/glossary/items/3666.php](http://unfccc.int/essential_background/glossary/items/3666.php)

#### **Glossary of CDM terms**

[cdm.unfccc.int/Reference/Guidclarif/glossary\\_of\\_CDM\\_terms.pdf](http://cdm.unfccc.int/Reference/Guidclarif/glossary_of_CDM_terms.pdf)

#### **Carbon offset glossary**

[tufts.edu/tie/tci/carbonoffsets/glossary.htm](http://tufts.edu/tie/tci/carbonoffsets/glossary.htm)

#### **A glossary of common carbon offset terms**

[climatetrust.org/pdfs/RFPs/Offset%20Glossary.pdf](http://climatetrust.org/pdfs/RFPs/Offset%20Glossary.pdf)

## **Appendix K: Terms of reference**

**Climate change: Implications for SME and Skills development policies and strategies, particularly in developing countries**

### **Background**

## ***Climate change***

Over the past 100 years, global mean temperatures have increased by 0.7°C, and the 1990s was the warmest decade for the past 150 years, with some of the hottest years ever recorded. Today there is a mass of evidence and a very broad consensus that this process is due to human activity, and principally the emission of greenhouse gases. Furthermore, it is predicted that if this warming persists, it will influence water availability, agricultural productivity and biodiversity, and lead to a growing number of extreme weather events such as hurricanes, forest fires and floods.

The recent report by former World Bank economist Sir Nicholas Stern for the UK government predicted that extreme weather could cut global GDP by up to 1%. A 2-3°C rise in temperatures could reduce global economic output by 3%, increasing to 10% if temperatures rise by 5°C. In the worst case scenario, global consumption per head would fall by 20%. These figures are in line with estimates from the United Nations Intergovernmental Panel on Climate Change (IPCC). Few scientists have been able to put a monetary value on the cost of climate change, but Cambridge University's model predicted damage amounting to €74 trillion if governments pursue 'business as usual' over the next two centuries.

A recent pioneering study by the European Trade Union Confederation (ETUC) of the impacts of climate change on employment in Europe analyzed the measures taken to combat climate change and their impact on employment. It specifically analysed the implications in different sectors of the economy: energy generation, transport, iron and steel, cement, housing and construction, which alone account for over 80% of greenhouse gas emissions. In summary the study concluded that "...even ambitious targets for reductions in emissions could translate into net gains for employment. However, it should be noted, that major transformations, creating numerous winners as well as losers are expected. Some sectors are likely to see mostly increases in employment, including construction (particularly from renovation), equipment manufacturing, energy savings and efficiency. In other sectors such as transport and energy, very significant restructuring is likely, with many workers having to change occupations. In some energy intensive sectors, like iron and steel, mitigation measures precipitate the ongoing relocation to emerging economies. "

Today it is widely recognised that sustainable development, which balances economic development, social development, and

environmental protection are prerequisites for - and not obstacles to - sustainable economic growth. The impact of global warming will fall hardest on populations already living in conditions of extreme vulnerability, and whose already inadequate and precarious livelihoods will be further jeopardized as climates become more extreme. Furthermore, they have the least ability, in terms of know-how and financial resources, to adjust their livelihoods in response to environmental protection and damage mitigation policies. Rural populations- especially in Africa - are in most need of innovative strategies to maintain and improve productivity and employment opportunities in the face of this challenge.

### ***Impact on SMEs, skills development and employment***

Micro, Small and Medium Enterprises (SMEs) play a significant role in virtually every economy and represent a large segment of the private sector. In low-income countries with GNP per capita between \$100 and \$500, SMEs account for over 60 percent of GDP and 70 percent of total employment and in middle-income countries they produce close to 70 percent of GDP and 95 percent of total employment.

SMEs already face a number of market and institutional disadvantages due to their size, including disproportionately high fixed costs of accessing markets and information, credit constraints, insufficient firm capacity, and difficulties in dedicating resources to research, development and training that could lead to innovations and potentially rapid growth.

Climate change will add new challenges for these enterprises. In many countries, increased short-term variability (in rainfall, for example) and/or long-term trends (such as rising sea levels) are damaging the ecosystems on which these enterprises depend. Policies, strategies, institutions and technologies will be needed that enhance the adaptive capacities of owners and workers in such enterprises to adapt to the changes brought about by climate change.

These changes will in turn induce changes in the types of agricultural products, the techniques for their production and the ways in which they are processed and marketed. Adapting to these changes, and indeed utilizing them for the objective of improving sustainable livelihoods and local rural economy development, will require acquisition of new technical and entrepreneurship skills - to adapt to new products or to new technologies. This will, in turn, accentuate the necessity of developing cost-effective ways to deliver skills development

opportunities in rural areas and ensure their accessibility to young people and women

## **Objectives and outputs**

### **Objectives**

This consultancy will address the implications for skills development and SME development policies and programmes. Specifically the objectives of the assignment are to:

1. Contribute analyses of policies and programmes to build the capacity of rural communities to adapt to climate change and adopt new technologies to improve productivity and decent work, which will inform the preparation of the General Discussion Reports for the International Labour Conference, 2008, on:
  - a. Rural Employment and Poverty Reduction
  - b. Skills for Productivity, Employment Growth and Development.
2. Inform ILO staff involved in SME and skills development on some of the major trends in responding to climate change, and
3. Assist the ILO staff involved in SME and skills development to reflect on and begin planning for strategies about the implications for their work and the overall strategy Job Creation and Enterprise Development Department.

### **Outputs**

The outputs for this assignment are as follows:

1. **A Briefing Note** (20-30 pages- in support of Objective 1, above)
  - a. Draws on the existing body of evidence and summaries some of the likely impact of climate change on livelihoods and employment, particular focus on least developed countries and rural communities, identifying both at-risk employment and new enterprise/employment opportunities, with what is known about probable timelines of impact.
  - b. Articulates the implications for what skills and enterprise development support will be needed to capitalize on the potential of new technologies, crops, processing to expand productive and sustainable livelihood (e.g. agricultural and industrial skills training for the introduction, expansion, improvement processing and export of crops enabling to increase their job-creating capacity, efficiency and quality)
  - c. Articulates the implications for the need for new re-skilling, as part of broader policy interventions, for those whose livelihoods

are lost or no longer sustainable in order to ease transition into new kinds of agricultural and rural employment

- d. Identify and explain examples of positive, or potentially positive, policies, programmes, independent initiatives to deliver training and support to rural communities to enable them to adopt new sustainable technologies that can be effective in responding to the emerging challenges of climate change (e.g. setting-up or strengthening support agencies such as agricultural extension centres, exporters' associations, standards setting agencies in agriculture, dialogue mechanisms and coordinated programme implementation between provincial and national policy agencies, local economic initiatives and their linkages to national policy), summarizing what is known about their impact and their factors underlying their potential success.
  - e. Highlight in particular examples of the efforts of Employers' and Workers' associations in these local efforts and conducive national policies, as well as awareness-building research and campaigns.
2. **A mapping** of what other what other international development agencies concerned with Skills and SME development are doing or planning to do in this area of work.
  3. **A Staff Development full-day workshop** for ILO staff involved in SME development and skills development on the major challenges and trends in responding to climate change with respect to sustainable and productive enterprise and employment. Prior to the workshop the consultant will be required to provide background information and presentation materials that can be distributed to potential participants and interested ILO field staff. Through the workshop, it is anticipated some of the key concerns for the ILO on SME and skills development and climate change will start to be articulated. It is expected that this will inform future work on the SME and skills development components of a broader ILO programme of work on the employment impact of climate change. Coordination with other units working on employment impact of climate change will be consulted and involved (INTEGRATION, EMP/ELM).
  4. **A final report** that can be published as a joint Working Paper by EMP/ENTERPRISE and EMP/SKILLS.