OUTREACH
a multi-stakeholder magazine on environment and sustainable development.

THE POOREST FARMERS IN THE WORLD ARE CUSTODIANS OF GLOBAL STOCKS OF CARBON

BY PHILIP DOBBIE

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The Poorest Farmers in the World are Custodians of Global Stocks of Carbon

By Philip Dobbie
Special Advisor, World Agroforestry Centre

The rural poor of the world are the custodians of huge quantities of terrestrial carbon. As an example about 60% of Africa's carbon is found in the drylands of the continent. These are vast, sparsely vegetated areas mainly inhabited by poor farmers and pastoralists. The drylands are often badly degraded and prone to losing the carbon they contain. Desertification brings not only desperation for the people affected, but also loss of the earth's carbon stocks.

For poor farmers and pastoralists, conserving carbon is – of course – not a priority. Their priority is to grow crops, raise livestock, produce food and sell their products, and even this cycle is demanding given the volatility of the natural environment and socio-economic stresses. Their priority is feed their families, send their children to school, pay for health care and escape from poverty. However, the very actions that will help them to escape from poverty are actions that will also protect carbon stocks. Actions that maintain vegetative cover help farmers by controlling soil and water loss. Controlling soil loss keeps the carbon where it is. Trees can help to fertilize the soil while providing fodder for animals. An increase in tree cover will also contribute to carbon sequestration. Low tillage systems increase agricultural productivity while conserving soil, water and carbon.
Agriculture and livestock production depend upon the ecological services provided by the landscapes around farms and pastures. Conserving trees or reforesting highlands helps to ensure the constant supply of water to users downstream. Preserving vegetation around water courses protects fisheries, moderates water flow and reduces flash flooding. All of these actions protect carbon stocks and help farmers, herders and fishers.

The impact of climate change

Tragically, the ability of land users to manage the land to mitigate climate change is likely to be seriously affected by climate change itself. It is expected that the frequency of droughts and floods will increase with climate change, water regimes will change and temperatures will rise. All of these events will have seriously affect agriculture and animal production. Poor farmers in marginal areas will suffer most: they simply do not have the resources to adapt and risk being driven from agriculture. They need considerable assistance to adapt to the effects of climate change. Adaptation includes better water management including water harvesting, improved tillage techniques, the increased use of trees on farms and crop varieties that are adapted to the new realities of a world under climate change.

Financing considerations

Investment will be needed to safeguard the livelihoods of poor farmers, and in doing so conserve valuable carbon. Negotiators may distinguish between development funding and climate change funding, but for a poor land user this distinction is meaningless. What the land user wants is development, and the outcome of investment in development for the rest of the world is mitigation. Unfortunately, the amounts of money available for development are insufficient for today's development challenges. Increased funding must be made available for climate change mitigation by poor farmers. There is, as yet, little on the table for poor farmers, herders and fishers. REDD might become a strong incentive for poor people who live in forested areas, and there are hopes that REDD with a number of pluses added will eventually provide incentives for carbon management in different landscapes. Whether this will ever benefit the land users who are the custodians of carbon in huge, extensive landscapes will depend on the willingness of the international community to develop funding mechanisms that reward improved land management over many thousands of square kilometers, rather that the more easily measured carbon in dense forests.

The incontrovertible differences between a forest and a savannah or a steppe will have to be recognized. Complex instruments that require sophisticated local measurement of carbon will never work. Instruments that require high levels of organizational and technical capacity will not benefit poor people, as has been demonstrated by the paucity of Clean Development Mechanism projects in the poorest countries. It will be necessary for development funding to be intelligently blended with climate change funding. There is considerable resistance to this, especially from the developing countries that would benefit most. They are concerned that funds allocated for development should not be re-labelled as climate change funds, especially during the difficult financial times that many developed countries find themselves in. But, what if (as a single example) development funding could be used to help countries to put in place national soil conservation and management strategies, and climate change funding used to reward the successful implementation of the strategies?

The need for change

If there is to be an increase in focus on development/ adaptation/ mitigation for poor land users, much more research and technology development will be needed. Fortunately, major steps are under way. There has been a rapid and significant development in technologies that significantly improve tree and vegetative cover while improving people's livelihoods. The Ndituli system in Tanzania is a re-introduced indigenous system of woodlots and dry season grazing that the World Agroforestry Centre has helped to spread to 500,000 hectares around Shinyanga. "Evergreen Agriculture" is another system based on a tree species called Faidherbia albida which can be grown with crops. Faiderbia is a "fertilizer tree" that drops nitrogen-rich leaves onto croplands. Faidherbia has the valuable trait of losing its leaves when the rains begin, so it does not shade out the crop growing below. The International Maize and Wheat Improvement Center is developing drought-tolerant varieties of maize, whose seeds are already reaching farmers in East Africa and elsewhere. However, much more is needed, ranging from better methods of water management to better means of monitoring vegetation coverage by satellite.

COP 16 is tackling issues of immense global significance. In many ways, it is understandable that the focus should be on the "headline" issues such as emission targets and the conservation of major

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Philip Dobbie *is an international development professional with over 30 years experience. He was a director at the United Nations Development Programme from 1999 to 2010 and prior to this he was the Global Coordinator for UNDP of Capacity 21 from 1993 to 1999. Before working for UNDP, Phillip worked for the UK Overseas Development Agency and Consultative Group for International Agricultural Research.*

Indigenous Peoples' Ambitions for Cancun

By Tebtebba and the Indigenous Peoples' Global Network on Climate Change and Sustainable Development (IPCCSD)

As of yesterday more than 500 indigenous persons from Latin America and the Caribbean, Asia, Africa, Arctic and North America are present in Cancun to ensure that their concerns are taken on board by the 16th Conference of Parties of the UNFCCC. Among these are the members of the Indigenous Peoples' Global Network on Climate Change and Sustainable Development (IPCCSD) and the Tebtebba Partners on Forests and Climate Change. Together they are working to ensure that the following are realized in Cancun:

• Language in the Preambular Section of the AWG-LCA text which affirms the importance of respecting human rights, including indigenous peoples' rights, as contained in the UN Declaration on the Rights of Indigenous Peoples.
• Language in the Shared Vision Text which reiterates that full respect for human rights consistent with International Human Rights instruments, such as the UN Declaration on the Rights of Indigenous Peoples (UNDRIP).
• Retention of the paragraphs on social, economic, environmental and governance safeguards in the REDD Plus Text in Document FCCC/AWGLCA/2010/14 (pages. 56-58), in particular, the recognition of the relevance of the UNDRIP, their full and effective engagement in REDD Plus processes and the need to integrate their traditional knowledge systems and practices on the sustainable management of forests.
• Retention of the reference to the rights of indigenous peoples in the section on Cooperative sectoral approaches and sector-specific actions. (FCCC/AWGLCA/2010/CRP.1)
• Establishment of a mechanism such as the Indigenous Peoples' Advisory Group to provide inputs into the discussions, dialogues and decisions of the UNFCCC. (Xcaret Resolution, Quintana Roo, 27-29 November 2010)
• Language which allows for the direct access of indigenous peoples to Climate Change Finance especially funds for adaptation and for REDD Plus, appropriate technologies and technical assistance.
• Ensuring that gender and inter-generational balance and considerations are included in all the decisions reached.

Climate change continues to drastically impact indigenous peoples. They suffer from loss of their lands and livelihoods, food, water and energy insecurity, loss of lives, increased health risks, loss of traditional knowledge and identity, increased violence, conflict over resources, migration and displacement, and further marginalization.

It is crucial that indigenous peoples' demands are realized in the climate negotiations in Cancun and beyond. Indigenous peoples did not cause climate change. Their low-carbon lifeways, traditional knowledge and practices, protection and sustainable use of their forests and resources present alternative solutions to the current climate crisis.

For more information please contact *Vicky Tauli-Corpuz, Vicky@tebtebba.org, or Raymond de Chavez: Raymond@tebtebba.org, phone +639175317811.*

BIOCHAR:

Building synergies between agriculture, renewable energy production, and carbon sequestration

By Goodspeed Kopolo,
President of Zambia Biochar Trust
and Biochar Europe
Christoph Steiner, Founder, BIOCHAR.org

Biochar offers one of those rare things in the climate change arena – a real win solution. As referred to under AFOLU – Agriculture, forestry and other land use have a unique potential to sequester carbon. Annual sequestration rates by living biomass amount to approximately 100 to 120 billion tons of carbon from the atmosphere. Approximately the same amount is released by plant respiration and decay of dead plant material. The 60 billion tons released from decomposing biomass is almost 10 times more carbon than released by fossil fuel burning.

In light of this, it needs to be recognized that humans currently appropriate more than a third of the production of terrestrial ecosystems. This is a lot of carbon in our hands! It is important to consider the difficulties of changing a GHG source into a sink. Such a transformation needs to grapple with multiple considerations and ensure it doesn't compete with food production as is the case with biofuels, soil fertility is not compromised, it is consistent with a changing climate and the change can be quantifiable.

Proposals for agricultural and forestry biomass utilization typically focus only on carbon sequestration or bioenergy production, failing to address the issues in tandem. Some suggest maximizing carbon sequestration by the burial of crop residues in the deep ocean or the storage of trees underground. On the other hand, maximizing renewable energy production from crops and crop residues should substitute for fossil fuels (an option currently eligible for carbon trading). However both these options neglect the removal of nutrients and carbon and its beneficial effects on soil fertility. It is imperative that carbon management does not compete with food production and/or compromise soil fertility.
The drawback of conventional carbon enrichment in soils (such as reduced tillage intensity) is that this carbon sink option depends on climate, soil type and site specific management. The issues of permanence, leakage and additionality are the greatest obstacles for land use and forestry (LULUCF and REDD) carbon projects. Furthermore, the permanence and vulnerability of these sinks is likely to change in a warming climate. Therefore carbon sequestered by LULUCF projects is generally considered only temporarily sequestered. The CDM board and Gold Standard deals with these challenges by either excluding or strictly limiting LULUCF projects.

Biochar Carbon Sequestration

Biochar may offer a tool to deal with these issues. Biochar is carbonized plant material produced by pyrolysis. Pyrolysis facilitates renewable energy production, and the remaining carbon (biochar) can be redistributed to agricultural fields to improve soil fertility. This facilitates crop residue utilization, soil carbon sequestration and enhancement of soil fertility in a synergistic way.
Carbonization of biomass increases the half-life time of the remaining carbon (50%) by order of magnitudes and can be considered a manipulation of the carbon cycle. While fire accelerates the carbon cycle the formation of biochar (= carbonized plant material, charcoal, black carbon) decelerates the carbon cycle. Biochar production transforms carbon from the active (crop residues or trees) to the inactive carbon pool. Therefore issues of permanence, land tenure, leakage, and additionalty are less significant for biochar projects.
Biochar sequestration of carbon might avoid difficulties such as accurate monitoring of soil carbon which is another main barrier to include agricultural soil management in emission trading. Independently from its use as soil amendment the turnover rate and the quantity of carbon could be used to assess the carbon sequestration potential.

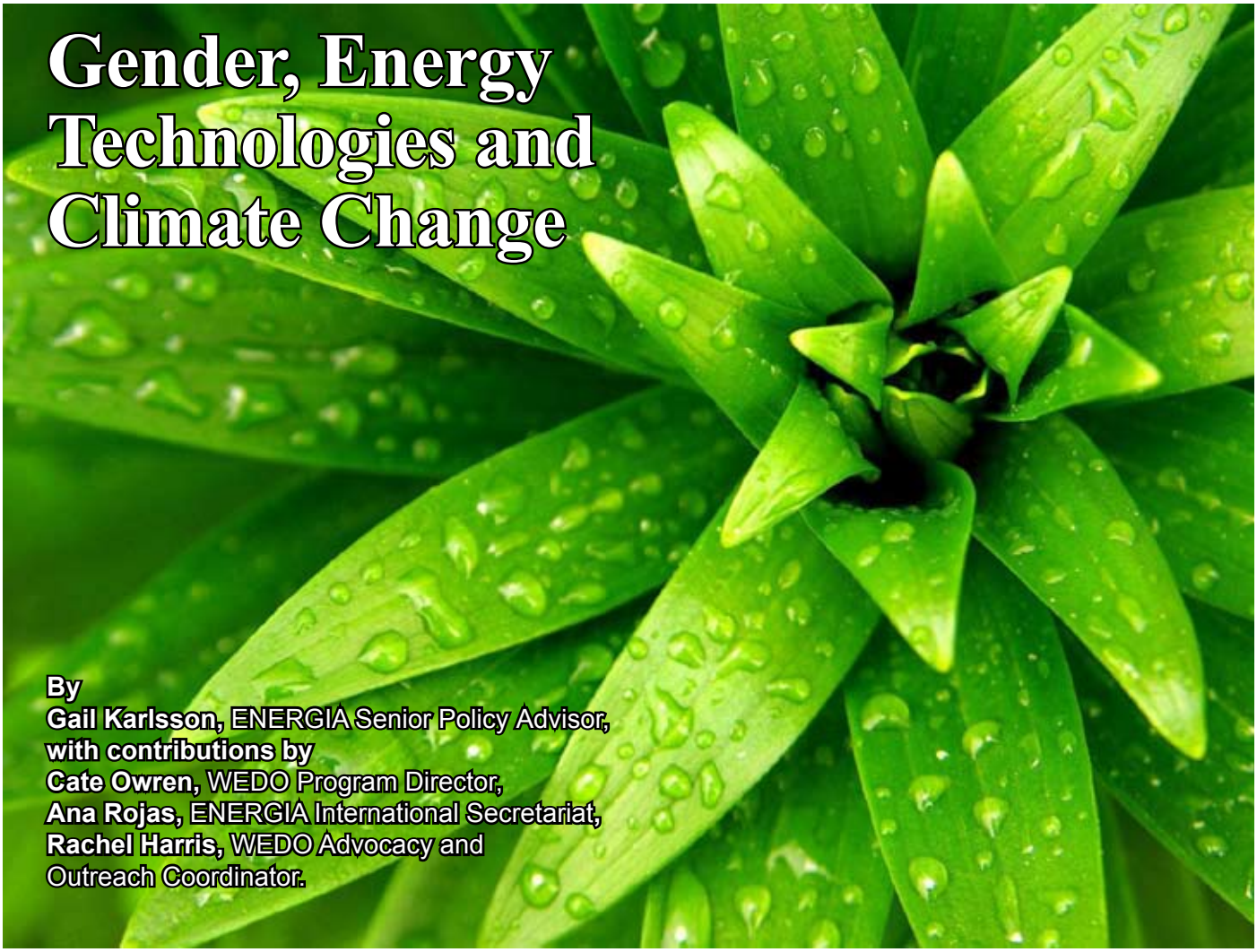
Land tenure

The exclusiveness of rights to the land is one fundamental precondition for REDD and payments for environmental services. This poses another obstacle, in particular for small farmers. Insecure tenure reduces the incentive for long-term fertility improvements and those receiving the payments cannot exclude other people who could use forest and land resources in ways that are incompatible with providing the contracted service.
This does not apply for biochar carbon sequestration because the carbon once sequestered in the soil is permanent. There is no risk that altered management practices would reduce the carbon stock. Terra Preta soils in the Amazon Basin proof that.

An obstacle of acceptance:

Most carbon offset schemes do not accept the avoidance of CO2 emissions from decomposing plant material. The definition of a carbon sink should be revised to include the difference between a sink to the inactive carbon pool, such as biochar, and a sink that remains in the active carbon pool, such as reforestation.
Nevertheless, article 3.3 of the Kyoto Protocol counts carbon stock change in soil, as well as biomass. Article 3.4 allows parties to include sequestration in plants and soil through management of cropland, grazing and land and existing forests. The Millennium Development Goals (MDG) Carbon Facility's mission is to improve access to carbon finance enabling a wider range of developing countries and project types to participate in the carbon market. They promote projects that generate additional sustainable development and poverty reduction benefits, thereby contributing to all MDGs. The Facility operates within the framework of the Clean Development Mechanism and Joint Implementation and is a joint project between UNEP and Fortis Bank. As such it might provide support to include biochar C offsets in the compliance market.
In this way Biochar is different from trade reductions in current emissions. Because biochar is an effective and permanent carbon sink, it has the potential to recapture historic emissions, thus providing an important path for industrialized nations to reduce their historic carbon dept. Therefore, on top of all its other attractions, biochar may present a pathway for negotiating reductions in GHG emissions with fast-growing economies such as China and India.

Gender, Energy Technologies and Climate Change



By
Gail Karlsson, ENERGIA Senior Policy Advisor,
with contributions by
Cate Owren, WEDO Program Director,
Ana Rojas, ENERGIA International Secretariat,
Rachel Harris, WEDO Advocacy and Outreach Coordinator.

Sustainable energy technologies are essential for effective climate change responses, as well as for economic and social advancement, including increased access to food, water, shelter, sanitation, medical care, schooling and information.

Women in developing countries are already facing many challenges, especially those who are living in poverty and/or dependent on small-scale agriculture and collection of water and fuel from their local environment to meet their daily needs. In many cases they lack even basic technologies like lights, stoves, grinders and pumps that could ease their daily household burdens, or any modern equipment that could provide opportunities for sustainable livelihoods.

Climate change is likely to make the lives of women in developing countries even more difficult. However, there is also great potential for climate-related funds and mechanisms to support new investments in low-carbon, renewable and energy-efficient technologies that would benefit women while at the same time reducing greenhouse gas emissions.

Investments in low-emission technologies that benefit women

There are many low-carbon energy technologies that can be used to provide electricity in off-grid or underserved areas, as well as motorized power, for agricultural production and processing machinery, water pumps, communications technologies, and other equipment that frees up women's time, expands their access to information, and provides new employment and business opportunities.

Examples of these technologies include: solar photovoltaic panels, small hydro systems, wind turbines, and generators fueled by plant oils or biofuels (including biogas, biodiesel, and bioethanol) produced locally in ways that do not adversely affect food supplies.
In addition, improved cooking stoves can also simultaneously reduce: greenhouse gas emissions; indoor air pollution that damages women's health; the amount of women's time and labor expended in collecting fuel; and the increasing pressures on forests and woodlands as fuel sources. Recently, research on the contributions of 'black carbon' or soot to climate change has focused new attention on the potential for innovations in cooking stove designs.

Carbon financing possibilities to expand women's access to energy

Emission reduction credits under the Clean Development Mechanism (CDM) could potentially be used to expand energy access and improve energy efficiency in ways that would provide benefits to women in poor areas, but so far it has been used mainly for efficiency gains in large facilities, and the transaction costs have generally been too high for small-scale projects led and implemented by women.

Reforms are needed to more fully realize the 'development' aspect of the Clean Development Mechanism.

There are some cook stove programs that have applied for CDM financing; for example, in Nigeria, the Developmental Association for Renewable Energies and other partners have sought programmatic CDM status for highly efficient wood stoves that reduce firewood use by about 80%. However, in situations where the exact amount of emissions savings from each stove has to be reported, the logistical challenges add to the transaction costs.

It may be somewhat easier to obtain carbon financing for projects that actually eliminate the combustion of traditional biomass fuels (wood, charcoal, dung and agricultural wastes) and provide cleaner-burning biogas technologies instead. For instance, the Biogas Support Programme in Nepal has received CDM credits for domestic biogas plants. The initiative encourages women's ownership of biogas digesters, and trains women to build and manage biogas digesters as business ventures.

In the area of electricity generation, Grameen Shakti in Bangladesh has bundled projects for CDM financing that involve training women and employing them as engineers to install solar panels.

Recommendations for climate policy-makers on energy technologies and gender equity

The technology transfer, capacity building and financing provisions of climate agreements and response plans should be inclusive and equitable so that both women and men can have access to, and benefit from, the development and transfer of new energy technologies, and should specifically:

• Require gender balance on management boards, expert panels and advisory groups for international, national and local climate response planning, energy technology transfer and dissemination, and carbon financing.

• Support training of women on the use, development, production and marketing of low-carbon energy technologies, and opportunities to share that knowledge with other women.

• Set targets for women's participation in projects and programs designed to expand energy access, including as designers, managers and entrepreneurs.

• Establish programs and centers focused on capacity building for women on clean energy business initiatives and opportunities.

• Create financing mechanisms for making access to carbon finance easier for smaller projects.

• Engage gender and energy experts to apply a gender analysis in the development of climate and energy policies and projects.

Engaging women in energy technology design, production and marketing

Technology development and use is widely viewed as 'men's work'. However, in many developing countries, it is traditionally women's work to gather wood, provide food, and generate income for their own and their children's needs. It therefore makes sense to enlist women in designing and producing locally-appropriate energy technologies that they can use for their own household and income needs, and also market to other women in similar situations.

Mainstreaming gender-sensitivity into energy and climate-related policies and projects requires a paradigm shift that recognizes women's contributions to climate change responses and promotes the development of new opportunities for women in the energy sector. To accomplish this goal, women generally need technical and business management training equipment for their own activities, plus also sell energy services to earn income, or actually learn to build, sell, maintain or repair energy technologies.

Innovative financing and credit schemes for expansion of energy services can serve as a catalyst for new entrepreneurial activities for women, if energy access is effectively linked with income-generating opportunities. Women could use

The ability of women to take advantage of business opportunities offered by new energy options is often constrained, though, by legal or social barriers that limit their property rights, land tenure, and access to credit. Government policies are needed that go beyond climate change and energy sector planning, and expand women's overall opportunities for economic empowerment.

"The role of women as energy providers can be transformed into suitable micro-enterprises if they can manage fuel wood or oil seed plantations, dispense kerosene or LPG, assemble solar panels, build cook stoves and brick kilns, and even manage electricity distribution and bill collection."
Where Energy is Women's Business, ENERGIA 2007

ENERGIA, *the International Network on Gender and Sustainable Energy, takes the view that projects, programs and policies that explicitly address gender and energy issues will result in better outcomes in terms of the sustainability of energy services as well as the human development opportunities for women and men.* ***www.energia.org***

WEDO *is a global women's advocacy organization working on issues of sustainable development, women's leadership and global governance and finance; climate change has been a cross-cutting priority for several years.* ***www.wedo.org***

Agro-ecological agriculture is critical to address climate change

By Andrew P. Kroglund,
Director of Information and Policy,
The Development Fund, Norway

The UN special raporteur on food, Olivier de Schütter, has asked for a global Marshall Plan for agriculture, in order to meet the climate challenges ahead of us. He is right in doing so. 925 million people in the world today are hungry. That number, according to Mr. Schütter, will grow with an additional 600 million by 2080, due to climate change. What can we do? Do any viable solutions exist? Can Cancun come up with something?

Well, let us start with agriculture itself. As of today, modern, industrialized agriculture is one of the problems, with high CO2 emissions, and in addition, devastates crop and other biodiversity.
In a comprehensive literature review of the options for lowering agricultural emissions at global and national levels, Wrights (2010) of the Overseas Development Institute concluded:

"While humanity is confronted with the almost overwhelming challenge of climate change and finite resources, there is no evidence suggesting that it is impossible to find a way to move forward. To the contrary, the growing body of analytical work examining scenarios at the global and regional level suggests it is not only technically feasible but also economically affordable, even profitable. The affordability of an ambitious response is even clearer when the costs of inaction are considered. These conclusions, however, only apply assuming a global transformation towards sustainability begins in the very near future and accelerates quickly."

In agriculture, sustainability means a clear shift towards agro-ecological models of production that allow drastic reductions in the use of fossil fuel, present great mitigation potential through soil and plant sequestration, and have the flexibility and diversity required to allow adaptation to changing conditions.

In practice, agriculture can contribute to cooling the planet in three ways: by reducing the use of fossil fuel through reducing fertilizer production and the use of fossil-fuel powered transport and machinery; by slowing the release of biotic carbon; and by increasing sequestration, particularly in soils.

Adaptation to climate change

There is consensus on the overall negative impact of climate change on agriculture.
Studies indicate that South Asia and Southern Africa are the two "hunger hotspots"
likely to face the most serious impacts from climate change. The crop with the single largest potential impact is maize in Southern Africa. Maize is the most important source of calories for the poor in this region and, with the effects of climate change, its yield could be reduced up to 30 percent by 2030. In South Asia, where roughly one-third of the world's malnourished live, several key crops including wheat, rice, rapeseed, millet and maize – have more than a 75 percent chance of incurring losses from climate change.

The uncertainty of future rainfall patterns, coupled with the likely increase in extreme rainfall or drought events and the emergence of unfamiliar pests and diseases, demands a form of agriculture that is resilient, and a system of food production that supports knowledge transfer and on-farm experimentation through building the adaptive capacity of farmers.

Resilience to climate change in agricultural systems requires presence of overlapping elements:

- agro-ecosystem resilience – refers to the persistence and sustainability of yield from the land or sea in the face of a changing climate;
- livelihood resilience – achieved through livelihood strategy diversification, such as introducing fish into rice paddies or planting a wider variety of crop species;
- reduced dependence on external inputs;
- decoupling of agricultural practice from volatility and changes in other markets, while retaining assets on-farm.

Many traits found in indigenous breeds will become increasingly important as climate change alters the environment and the pattern of pathogen spread between and within countries. Their protection, along with the local knowledge that is critical to their management and breeding, is critical for the future.

Meat and energy

Of course, small-scale farming can provide diversified diets including a wide range of pulses, beans, fruits, vegetables cereals and animal-derived products. In addition to being good for consumers' health, this diet also has its implications for climate change mitigation. A more vegetarian diet is responsible for fewer greenhouse gas emissions over a lifetime. Think about it: an average of 25 kcal fossil energy is used per kcal of meat produced, compared with 2.2 kcal for plant-based products. If developing countries were to consume as much meat as industrialised ones, we would need two-thirds more agricultural land than we have today.

A comparative analysis of energy inputs on long-term trials at the Rodale Institute found that organic farming systems used 63 percent of the energy required by conventional farms, largely because of saving the energy input that would have been required for synthetic nitrogen fertiliser.

The majority of climate change mitigation activities are cornerstones of organic agricultural practice, meaning that organic production systems arguably serve as the best wide spread examples of low emissions agriculture to date. Organic systems also tend to be more resilient than industrial in terms of withstanding environmental shocks and stresses including droughts and flooding.

Various other assessments that have reviewed whether low emissions agriculture can feed 9 billion people have incorporated data from the certified and non-certified organic, agro-ecological and biodynamic farming movements, which are the best defined bodies of intentionally sustainable, whole farm systems. Their results show an overwhelming concordance in the positive impact on climate change mitigation while ensuring sufficiently high levels of food production.
This dual potential and challenge of sustainable agriculture to mitigate climate change and feed the population by 2050 has become widely recognised.

Andrew P. Kroglund *is Director of Information and Policy, The Development Fund, Norway and has worked in several different Norwegian NGOs. He was Vice-Chair in the International Rainforest Foundation for 3 years.*

Profile

Dr. Spencer Thomas

Organisation: Government of Grenada

Current Position: Ambassador and Special Envoy for Multilateral Environmental Agreements
Deputy Chairman of the Alliance of Small Island States Negotiating Team

How long have you been in this position? 3 years

What prompted your early interest in environment?
A project on renewable energy technology retrofit for public buildings as part of school environment sensitivity and training programme. The project focussed on solar systems retrofit.

Describe your first attempt to 'save the planet':
Signing of the Catagena Protocol on Biosafety on behalf of the Government of Grenada at the Fifth Meeting of the Conference of the Parties to the CBD in Nairobi, Kenya.

Favourite quote:
If you want to walk fast go alone. If you want to walk far go together.

What jobs have you held that have led to the role you are in today?
Director General and Permanent Secretary in the Ministry of Finance and Planning.
Economic Policy Adviser to the Prime Minister and Minister of Finance.
Chairman of the Subsidiary Body on Scientific, Technical and Technological Advice of the Convention on Biological Diversity from 2008 to 2010.

What do you believe should be achieved at COP16?
An agreed balanced outcome of decisions including a shared vision of deep cuts in global GHG emission reductions sufficient to ensure that average global temperatures are kept well below 1.5 degrees celcius above pre industrial levels to ensure the survival of the most vulnerable countries, in particular Small Island Developing States, and to ensure that major life dependent ecosystems do not exceed their stress threshold levels, thus compromising their ability to provide the necessary ecosystem goods and services. The balance outcome of decisions must also include significant progress on all current items under consideration.

What do you consider the most significant hurdle to achieving an international agreement to succeed the Kyoto Protocol?
Rebuilding the trust among Parties and negotiating teams following the Copenhagen fallout which resulted in the cementing of hard and irreconcilable positions among the Parties and groups, with each Party and group resorting to a beggar thy neighbour approach with unwillingness to forge compromises based on the sound scientific evidence available.

What timeline is reasonable for an international agreement to be achieved? And what should this look like?
Definitely no later than December 2011 at the COP 17 in South Africa. The draft legally binding agreement submitted by AOSIS is an appropriate starting point.

Mitigating transport emissions in developing countries:

recommendations to the climate negotiations in Cancun, Mexico

by Cornie Huizenga,
Joint Convener, Partnership on Sustainable, Low Carbon Transport

The issue of low carbon development and transport needs to be urgently addressed in the rapidly expanding mobile populations in the developing world. In response to this, the land transport community has convened around the theme of transport and climate change to promote the need for comprehensive and coordinated action.

Recommendation 1:

Better integrate land transport to prevent developing countries from becoming giant emitters

The current 'business as usual' scenario for land transport is one in which GHG emissions are projected to increase by over 80% by 2050, with the bulk of the increase in transport emissions taking place in developing countries. It will become increasingly difficult post 2012 and especially beyond 2020 to realize emission reduction ambitions without involving land transport.

Recommendation 2:

Combine Avoid-Shift-Improve measures as the basis for effective mitigation action in land transport in developing countries

There is wide spread agreement GHG emissions from the transport sector can be reduced with no impact on economic progress through an integrated and comprehensive approach which avoids the need for travel through sound land-use policies and telecommuting, which shifts travel to the most efficient modes, e.g. public and non-motorized transport for passenger transport and rail and in-land waterway for freight transport; and which improves vehicle and fuel technologies.

Recommendation 3:

Raise the profile of sectors, including the transport sector, in the discussion on future agreement on climate change

There are considerable differences between the transport sector and other sectors, such as power and energy, in the sheer number of sources and in the complexity of calculating emissions for the sector. Transport typically has small emissions divided over a large number of individual sources, who all behave in their own individual manner. The success of any future global agreement will depend largely on the manner in which the different sectors, including the transport sector, will implement emission reductions agreed upon.

Recommendation 4:

Ensure that NAMAs are suitable for transport sector

So far the developing countries have given a strong signal that they would like transport to be included in NAMAs as well over half (28 out of 46) of the submitted NAMAs include transport. Many of the mitigation solutions in the transport sector have medium to long term negative incremental costs, especially when non climate related benefits are taken into consideration. Yet, there are considerable up-front costs linked to the transition of existing transport systems to more sustainable, low carbon transport solutions. Allowing such transition costs to be funded as part of transport NAMAs will enable substantial future emissions from the transport sector to be avoided.

Measurement and verification of GHG emissions in the transport sector is inherently complicated due to the large number of individual sources. In cases where it is not possible to determine with a high level of certainty the GHG emission reductions of measures which are known to have occurred, it should be acceptable to accept the use of proxy indicators as part of the MRV arrangements to ensure that emission reductions have taken place.

Recommendation 5:

Strengthen the coverage of transport in National Communications

To strengthen the role of NatComs in mitigation planning and reporting for transport, it is important to ensure that emission inventories are updated every 2 years. It is suggested to revise the IPCC guidelines for determining GHG emissions from the transport sector to enable reporting of emission reductions on the basis of transport activity data rather than just on the basis of overall fuel use.

Recommendation 6:

Acknowledge co-benefits

NAMAs are implemented in the context of sustainable development and many of the mitigation solutions in transport have large development co-benefits which in many cases are important reasons for the implementation of these mitigation measures.

Recommendation 7:

Integrate transport in capacity building and technology transfer

Capacity building is a priority and should focus on the replication and scaling up of successful measures under the Avoid-Shift-Improve approach. The transport sector is well placed to make an early start under any technology transfer mechanism to be agreed in Cancun. There is not only a need for the transfer of fuel and vehicle technologies, which have been traditional areas of focus, but also for the transfer of approaches on, for example; land use planning, management of transport services, congestion charging etc.

Recommendation 8:

Give transport a place in Climate Financing

For the transport sector to be able to contribute in a sizeable manner to climate change mitigation in the post 2012 period, it is critical that the transport sector receives a significant part of any climate fund that will be established, this in line with the importance of land transport as a source of emissions. To enable developing countries to develop their transport services in a sustainable and low carbon manner, it is also important that climate finance and development assistance are better aligned in the future.

Agriculture & Rural Development Day

Cancún, México December 4th 2010

Finding sustainable agriculture solutions to meet food security and climate change challenges!

Agriculture is where climate change, food security, and development intersect!

Agriculture and Rural Development Day 2010, held in parallel to COP16, will bring agriculture sector adaptation and mitigation strategies to the forefront of the global climate treaty negotiations. It will demonstrate clearly that agriculture is where climate change, food security, and development intersect. It informs the **climate change negotiations** and advocates for a COP decision on a "work program for agriculture" — and at the same time looking beyond the negotiations.

Agriculture and Rural Development Day 2010 will show how agricultural development can contribute to low emission futures, while adapting to **climate change** and enhancing supporting **sustainable food security.** The ensuing messages together with those of Forest Day 4 will be presented jointly at an official COP side event.

Go to **www.agricultureday.org** for more information.

Please see below details for the COP16 side event;

Official COP16 side event

Monday, 6 Dec 2010, 18:30-20:00,
Cancún Messe, Room Mamey
Enabling agriculture and forestry to contribute to climate change responses

This official COP16 side event is held jointly by the organisers of Agriculture and Rural Development Day 2010 together with those of Forest Day 4.

Drawing on the outcomes of these two days, major international organisations, donors, farmers, civil society and the private sector will outline options for more integrated approaches among sustainable agriculture, forestry and **climate change** for food security — in close proximity to the negotiations of COP16.

Moderator – Andrew Steer, **Special Envoy** for Climate Change, The World Bank

COP16 side event programme

18.30 Introduction

18.35 Climate-smart agriculture
Lindiwe Majele Sibanda, Chief Executive Officer, Food, Agriculture and **Natural Resources Policy Analysis Network** (FANRPAN), South Africa

18.45 Forestry and climate change
Frances Seymour, Director General, Centre for International Forestry Research (CIFOR), Indonesia

18.55 Panel discussion

- Peter Holmgren, Director, Climate, Energy and Tenure Division, **Food and Agriculture Organization** of the **United Nations** (FAO)
- Farmer representative (TBC)
- Mihir Kanti Majumder, Secretary of Environment, Bangladesh (TBC)
- Fred Kossam, Principal Meteorologist, **Ministry of Natural Resources, Energy and Environment, Malawi.**

19.15 Open Discussion

19.50 Wrap up

20.00 Food and drinks

Contact: s.buzzelli@cgiar.org

Africa, the Caribbean and the Pacific (ACP) media facing the challenge of climate change

By Therese Burke,
The Technical Centre for Agricultural and Rural Cooperation (CTA)

Media coverage in the Western world on the impact of climate change is ubiquitous. It seems that almost every week we read, watch or listen to reports on the effect of our evolving climate and weather conditions.

The situation could not be more different in Africa, the Caribbean or the Pacific (ACP). Across these regions the media focus is on escalating food prices and natural disasters. Although they contribute the least to it, these countries are often the hardest hit by climate change. Consequently, they now urgently need to address food security challenges. This is not a simple task, as these challenges are exacerbated by an agricultural sector which is severely impacted by climate change.

Climate change and agriculture are intimately linked. On the one hand extreme climate variability profoundly affects agriculture, yet on the other hand agriculture contributes to the problem through the production of Greenhouse gases. Accessing information on the effects of climate change impacts the development of appropriate adaptation strategies, and is therefore, essential for ACP countries wishing to grow a sustainable agricultural industry. Current and historic weather information, for example, would allow forward planning so the farmer could make the best decision as to when to plant, what to plant, what diseases might attack the crops, and when to harvest.

Research must combine traditional and indigenous knowledge with modern technologies. This know-how also needs to reach smallholder farmers. Further studies are required on water and soil management, as well as drought and flood-resistant crop varieties. Increased investment in agricultural research should come from the ACP governments and relevant donor agencies.

All stakeholders, be they ACP farmers, policy makers, civil society groups, researchers, the media or the private sector, must be engaged in the debate on how to feed a growing population while coping with climate change. Let us remember that even small changes at local level can contribute positively to the global effort of achieving sustainable agriculture.

Media has several responsibilities in this area. It should promote debates, create social and political influence for positive change and sound policy decisions, as well as, to a large extent, inform the public on how to better adapt to climate change. The Technical Centre for Agricultural and Rural Cooperation (CTA) encourages the media to step up and play an active part in contributing to this debate.

At COP16, CTA has supported journalists from around the ACP regions to attend Agriculture and Rural Development Day 2010 (ARDD) in Cancún, Mexico. Climate change is an important feature of CTA's Media Training Programme.
For more information on CTA Media Training Programme contact us at **cta@cta.int or visit us online at www.cta.int**

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