How law enforcement and anti-corruption activities are essential to successful and equitable efforts to reduce deforestation and forest degradation.

Is genetically engineered food really the answer to food security and climate resilience?
Towards a Programme of Work on Agriculture

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Agriculture is a unique sector of the economy. Its primary function is the production of food, and it is therefore vital for the day to day survival of mankind. At the same time, agriculture secures the livelihoods of large populations in rural areas, and it is an essential basis for economic development there. This is true both for developed and developing countries. The sustainable production of agricultural goods (food, feed, fibre and raw materials) alongside the provision of public goods by agriculture (such as the protection of the environment and the maintenance of the countryside) is indispensable for rural development.

Mitigation possibilities are varied in the different farming systems across the world. In Europe, greenhouse gas emissions from agriculture have declined by 20% since 1990, while yields and overall levels of production have increased. This demonstrates that there is a potential in increasing resource efficiency, and in the sustainable intensification of agricultural production. Often, current production techniques do not yet ensure the level of sustainability which is required in the long term. There are great challenges for developed and developing countries to overcome in order to reap the potential for green growth in the agricultural sector, while limiting and reducing environmental impacts.

These challenges require a change of current agricultural practices across the globe. There is a need to increase production while taking account of the fact that land resources are limited and natural environments need to be preserved. Production increases must be achieved in a sustainable way, and boosting the efficiency of resources is the key. Higher production, in a sustainable way, also means reducing land pressure, while providing multiple benefits to people in rural areas.

Climate smart agriculture has become a guiding theme in recent discussions, and there is now broad agreement among many stakeholders that it is possible to achieve triple win solutions in agriculture: increasing global food security and livelihoods, while contributing to fighting climate change and adapting to its impacts. This was a key conclusion of last Saturday’s Agriculture and Rural Development Day (ARDD), where hundreds of policy makers, researchers, farmers, NGOs and other stakeholders gathered in Durban to discuss climate smart agriculture.

Many measures in agriculture have multiple benefits, contributing both to climate change adaptation and mitigation, while providing economic benefits. The better maintenance of soil carbon is an excellent example, where carbon sequestration also improves nutrient and water retention and often helps to increase yields. There are also trade-offs between the different objectives of climate smart agriculture, and it is therefore essential to identify and enable...
Without law enforcement, forests lose out:

**Why corruption and impunity threaten REDD+ goals**

Andrea Johnson
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**Enforcement and anti-corruption efforts: critical pieces to reducing deforestation**

Law enforcement and anti-corruption activities are essential to successful and equitable efforts to reduce deforestation and forest degradation. REDD+ depends on the idea that governments, whether national or subnational, can create legal frameworks and plans to reduce deforestation and degradation, and put those laws and plans into practice. In countries where basic law enforcement remains an institutional void, putting those laws and plans into practice, and putting those laws and plans into practice, becomes a distant dream.

**Much focus has been placed on agriculture in this African COP and this shows that there is an emerging willingness to address the needs of African countries alongside that of other developing and developed countries, for which agriculture is crucial. It is a stated objective of the European Union and its Member States to work towards the establishment of a SBSTA Work Programme on Agriculture. Let us hope that it will be among the deliverables of Durban.**

**Corruption in the forest sector has until now been overwhelmingly linked to logging, which in many countries has led to significant depletion of valuable tropical forests. But new incentive mechanisms developed under REDD+, and the finance it will generate, is beginning to change the face of corruption in the forest sector. The potential for future REDD+ earnings is bringing about new corrupt practices, starting with cases of land grabs. REDD+ is also likely to lead to new forms of corruption not previously seen, such as questionable carbon accounting and manipulation of forest carbon measurements.**

**Governance is key to the effective implementation and delivery of the intended outcomes of REDD+ – from international to grass roots level. A well-designed governance system is also needed to address the substantial risks of corruption and criminal involvement that are posed by REDD+. REDD+ Readiness should incorporate indicators around the enforcement and anti-corruption aspects of REDD+. Fundamentally, these indicators should get at questions such as these: “Do enforcement, oversight and anti-corruption institutions exist? Are they independent, effective and fair? Are they involved in REDD processes?”**

International entities should be part of REDD+ negotiations and planning too. REDD+ countries must also implement mechanisms to ensure transparent financial flows, improvements to governance throughout national REDD+ processes, with support from donors who can provide financial and technical support to improve governance. Immediate and sustained investment is needed in building governance capacity while law enforcement agencies, both national and international, should be encouraged to contribute their expertise to the design and implementation of REDD+ programmes. Implementation of REDD+ will require significant sums of money to flow and ensure that the economic incentives to deforest are superseded by greater economic gains for keeping forests standing.

But funds cannot, on their own, stop deforestation or prevent forest degradation. Experience has shown that deforestation and forest degradation are often a result of poor forest governance and weak law enforcement. The main drivers of deforestation, such as agricultural expansion, logging, roads and other infrastructure developments, are often symptoms of a larger failure of governance. Many forest-rich countries do not have strong institutions or the processes necessary to value and protect forests or protect the people who live in or around the forests and depend on them.

Corruption and illegality in REDD+ may lead to the over exploitation of forests. If law enforcement issues are not addressed adequately, thereby allowing criminals to gain control of REDD+, there is a serious risk that the ultimate losers will be the communities that rely upon the forests for their livelihoods. Of equal concern is that this may lead to conflict and social unrest that would undermine the effectiveness of REDD+. REDD+ cannot be removed from this broader governance context. Without effective governance, money distributed through REDD+ is unlikely to help combat climate change and could lead to perverse outcomes. Whether in traditional commodity markets or on the REDD frontier, we ignore the need to build and encourage law enforcement and anti-corruption efforts at our peril.

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**ABOUT THE AUTHOR**

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‘Sustainable intensification’ is the new buzzword

Marco Contiero
EU Policy Director, Genetic Engineering and Sustainable Agriculture
Greenpeace European Unit

A new buzzword has been recently coined and is dominating international fora debating agriculture, climate change and food security: ‘sustainable intensification’. Industry and (some) government representatives claim that if we want to feed the world by 2050, food production must increase by 70% and at the same time halve its environmental footprint, hence the need for ‘sustainable intensification’. The basic problem of such an argument, which is not fundamentally flawed per se, is its raison d’être - the hidden agenda this new terminology masks.

Most commentators use the sustainable intensification concept to call for a greater intensification of agricultural practices and, in particular, to justify the existence of some highly profitable product-based technologies such as genetically modified (GM) crops and synthetic fertilizers. In other words, the term is used to support the same industrial agriculture system that is responsible for a great deal of the social, environmental and health problems we are currently facing, including climate change.

The industrial model of agriculture promoted by the supporters of sustainable intensification, is based on costly, polluting and non-renewable external inputs and is a major contributor to greenhouse gas (GHG) emissions. Large quantities of carbon dioxide (CO2) are released through the use of machinery and the production of pesticides and synthetic fertilizers, while emissions of nitrous oxide (N2O) and methane (CH4) derive mainly from the use of synthetic fertilizers and cattle enteric fermentation. This adds to the severe impacts that industrial farming practices have on biodiversity loss, water pollution and land degradation.

Agribusiness spokespersons use the sustainable intensification mantra to present the industrialisation of agriculture as the best strategy to both adapt to and mitigate climate change. Adopting GM crops, marketing new synthetic fertilisers and further intensifying livestock factories are presented as solutions. However, apart from greatly increasing the profits of a handful of agro-chemical industries, these solutions fail to solve the root causes of the problems created and faced by agriculture. In fact, these techno-fixes maintain the current level of GHG emissions and overall consumption of natural resources, both highly unsustainable, while at the same time distracting the attention away from the truly sustainable solutions, which are already available but need considerable political and economic support to unfold their far-reaching potentials.

The biotech industry has been using the climate and food security crises to broaden the market of their patented products. For more than a decade, companies have been talking about miracle crops that are resistant to droughts, tolerant to salt, capable of better fixing nitrogen or using water more efficiently. Yet, despite decades of research and advertisements, no such GM plants have been invented nor commercialised. In fact, there is no such a thing as a ‘climate change gene’ that can confer drought resistance to a crop. On the contrary, genetic engineering both contributes to climate change and fails to provide adaptation opportunities. On the one hand, this technology has been developed for, and is economically profitable only within, the GHG intensive industrial agricultural system, which it intrinsically promotes. On the other hand, resource-intensive plantations of genetically identical plants are the most vulnerable farming system to erratic weather conditions. Overwhelming scientific literature proves that the most effective way to ensure that agriculture adapts to climate change is to create farming systems resilient to climate shocks, by increasing agricultural and biological diversity in the field. Sowing different crops and different varieties in the same field is a proven method to substantially increase the resilience of the system to erratic weather changes as well as to reduce pests and diseases due to the decreased availability of hosts.

Global research and development programmes must aim at enhancing the resilience of farming systems as a whole instead of increasing the resilience of a single crop. The winning strategy is to maximise yields over the years, both good and bad ones, by decreasing the chances of farming systems to fail during bad years. Instead, the dominant agenda aims at maximising yields of single crops, just during optimal years, even if they underperform during years with difficult weather conditions (which are likely to become the norm in the future). Ecological farming is much more resistant to erratic weather than conventional agriculture. Agro-ecological practices such as cover crops, agroforestry and terrace bunds in Central America were found to be more resilient to the impacts of Hurricane Mitch than conventional farms.

Intensive farming systems require the addition of increasingly more chemicals to maintain productivity, since the necessary nutrients cannot be found any longer in the soil. Their degraded soils have reduced capacity to hold water and are affected by erosion from droughts and floods. On the other hand, organic agriculture and other ecological practices favouring crop rotations, nitrogen fixing legumes, cover crops, integrated pest management and agroforestry not only fertilize the soil without using synthetic nitrogen fertilisers, but also increase the soil’s organic matter and therefore its capacity to sequester higher quantities of carbon, hold moisture and resist erosion.

The fertilisers, animal feed and livestock industries are also happy to use the sustainable intensification mantra. Developing machinery to apply synthetic fertilisers more efficiently, creating feed enzymes reducing the enteric fermentation of ruminants or deploying highly intensive factory farms are promoted as solutions. However, the amount of nitrogen and phosphorous discharged onto agricultural fields as well as the extent of their runoff must be immediately and drastically reduced, not just made slightly less inefficient. The massive GHG emissions coming from the livestock sector require a substantial reduction in the number of animals raised, not a more intensive system increasing the number of animals. All these ‘solutions’ foster an utterly unsustainable use of natural resources.

As a recent UNEP report states, it is essential to ‘transform the uniform and high-external/input-dependent model of quick-fix industrial agriculture (whose health and environmental externalities are largely not internalised) into a flexible approach of “regenerative” agricultural systems that continuously recreate the resources they use and achieve higher productivity and profitability of the system (not necessarily of individual products) with minimal inputs’.
Do farmers and food systems need to go it alone?

Bruce Campbell
CGIAR Research Programme, Climate Change, Agriculture and Food Security (CCAFS)

Despite the uncertainty of climate change models, it is clear that agriculture is a sector that will be particularly hit by climate change, especially in developing countries.

Growing seasons will be dramatically reduced throughout vast areas of Africa. Extreme weather events will hit agriculture hard. For a continent already facing severe challenges, climate change is a major new threat. Parts of Asia will be equally hard hit. In some developed countries (e.g. Australia), transformational adaptation is already being considered – where, e.g., some crops have to relocate to different ecological zones. The finance to make such transformations happen in developing countries is generally not available.

One billion people go to bed hungry each night. Food security is one crucial key to a more just world. The goal of attaining food security will become even more difficult in a warmer world.

Agriculture contributes significantly to greenhouse gas emissions – 20-25% of global emissions from direct emissions (e.g. methane from rice production) and indirect emissions (e.g. clearance of forests for crops).

As the recent Meridian Institute report states "Agriculture offers a wealth of technical and institutional opportunities to deliver simultaneously on food production, adaptation, and mitigation, while benefiting wider environmental services and farming incomes, and hence food security." For example, practices such as conservation tillage can sequester soil carbon, increase yields and enhance resilience. But such practices don’t necessarily come easy – in my decade of working with smallholder systems in Southern Africa I could only but admire the resourcefulness of farmers working in harsh environments with limited markets and inputs. But farmers were stretched for labour and cash for inputs, making some of the obvious innovations impossible. Many believe that climate finance is crucial for the investments that will be required to adapt and achieve food security. With mitigation being a co-benefit – mitigation could never be the goal in these systems where adaptation is the priority.

In the negotiations agriculture should not be considered separately under “adaptation” and under “mitigation” – agriculture has to be considered as a unified whole, so as to plan for and manage the trade-offs and synergies of adopting certain agricultural practices and certain agricultural development pathways. In addition agricultural production has to be considered as part of the whole food system – major greenhouse gas emissions occur in pre-production phases (e.g. fertiliser production), in food storage (e.g. cold storage) and as a result of eating habits and food waste. All entry points along the food chain need to be considered.

Given that agriculture is at the nexus of food security adaptation mitigation, and given that agriculture can be part of the solution for adaptation and mitigation, why is it that the draft text on agriculture – merely calling for a work programme under SBSTA – cannot advance in the negotiations? Agriculture needs a forum where the details of how to adapt and mitigate across the food system are hammered out. Stressing again that agriculture cannot be relegated to the mitigation negotiating stream.

In recent weeks we have seen the call for a work programme to come from diverse sources – the Southern African Confederation of Agricultural Unions; researchers from BRICS countries; African Ministries of Agriculture; the Commission on Sustainable Agriculture and Climate Change; and so on. We have to recognise that countries and stakeholders have very different perspectives on agriculture and food systems – trade, food security, rural livelihoods, as a major contributor to negative global change and so on. This is even more of a reason to have a forum where discussions can be discussed and global agreements can be fostered.

The Commission on Sustainable Agriculture and Climate Change concluded “Business as usual in our globally interconnected food system will not bring us food security and environmental sustainability. Several converging threats are steadily intensifying pressure on humanity and world governments to transform the way food is produced, distributed and consumed.” Can the UNFCCC show leadership in helping set the global policy framework for such a transformation? Or will food system participants – from farmers to consumers - have to go it alone?

ABOUT THE AUTHOR
Bruce Campbell is the Programme Director of the CGIAR Research Programme, Climate Change, Agriculture and Food Security (CCAFS), which is a strategic partnership of the Consortium of International Agricultural Research Centers (CGIAR) and the Earth System Science Partnership (ESSP).

Assessment of linkages between Biodiversity, Forest Management & REDD+

Georgie MacDonald
Stakeholder Forum

With the debate around REDD+ being a key focus of the discussions in Durban, yesterday scientists came together to present a new comprehensive scientific assessment in the framework of the Global Expert Panels (GFEP) investigating the linkages between biodiversity, forest management, and REDD+.

The purpose of GFEP is to support forest-related intergovernmental processes by assessing available scientific information in a comprehensive, interdisciplinary, objective, open and transparent way, and producing reports on issues of high concern, including emerging issues. The rationale behind the new GFEP assessment is that REDD+ related measures have the potential to enhance both carbon sequestration and biodiversity conservation, but trade-offs between these objectives need to be clearly understood.

Christoph Wildburger, Coordinator for Global Forest Expert Panels, IUFRO and John Parrotta, International Science Policy Analyst, of the US Forest Service, both gave comprehensive overviews of the assessment. The process will start with the establishment of a thematic Expert Panel involving leading scientists in the field, ensuring both a regional and gender balance, and inclusion of young scientists. No new research will be carried out, instead there will be an assessment of existing scientific literature and information. A peer review process will be carried out during the assessment and emerging results will be published at COP 17, with the final results to be presented at the UNFCCC COP18. In short the assessment will:
- clarify the interactions among forest management, biodiversity and carbon for different types of forests;
- analyse, in relation to these interactions, the social, economic, and environmental synergies and trade-offs under REDD+ implementation; and
- identify governance and policy options for REDD+ activities that capture synergies between biodiversity and carbon, and avoid perverse outcomes.

In this context, it will provide a detailed analysis of win/win, win/lose, lose/lose outcomes for carbon and biodiversity across spatial and time scales. It was made clear that this is not an advocacy piece, but instead to be used as the basis for policy options and this was reiterated with a quote from Lord May, “the role of the scientist is not to decide between possibilities, but to determine what the possibilities are”.

The second part of the presentation focused on the practical issues surrounding the accessibility and use of biodiversity data. Nicholas King, Executive Secretary, Global Biodiversity Information Facility (GBIF), gave interesting insights into the components and challenges in data sharing, from the infrastructure or ‘pipes and plumbing’ to allow data flow, to the people or users of the data. GBIF came into existence following recommendations from the OECD and aims to strengthen national level capacity for collecting and compiling environmental observations. This is focused where data gaps exist and aims to publish and provide access to data using various media and develop services to efficiently and rapidly provide information to decision-makers in understandable formats.

As of November 2011, there are 320 million occurrence records from 10,000 datasets from 300 institutions. Examples of findings from the data were given with a report looking at change in species boundaries in Britain over 25 years, with 70% moving south and 20% moving north. A second example related to REDD looks at climate change impact modeling of tropical forest tree species. Results showed wide displacement and loss, with a grim picture of all families and genera suffering 50%, niche loss with 50% species loss. It is vital that this data is fed into REDD+ and this shows that there is now the potential to make a global map of biodiversity changes, which today does not exist. ■
Chief Adam Tampuri is here as part of a delegation of Fairtrade farmers and representatives. It is the first time he has been to a COP, and for Fairtrade this is also the first serious engagement in climate change advocacy at the global level.

What prompted your interest in the environment?
As farmers, we realised that our crops are not fruiting as usual and that the staple crops that we rely on for food are also being affected by prolonged droughts, interspersed with floods. We don’t know when to plant crops, rainfall is unreliable, streams for irrigation dry up at points in the year and the cashew plants shed leaves when they should be flowering and producing fruit. Pests are increasing and even our houses are damaged each year by storms that we didn’t use to see on a regular basis. All of this has made our farmers think that there is something very wrong with the environment.

First attempt to save the planet:
Having observed the drying up of streams, we initially started planting trees along stream banks and around houses for protection from storms. The cooperative leadership also started to encourage farmers to reduce the felling of trees on and around their farms, which they were cutting to sell as timber and charcoal in order to create income when crops were not doing well.

What timeline is reasonable for an international agreement to be achieved?
I think negotiators should be taken to live in communities already impacted, and COPs should be held in places where people are suffering as a result of climate change, rather than big cities with comfortable hotels like Durban. From what I have seen here, the COPs are a way for many people to make a good living, so they should also be held accountable to make some good decisions.

What do you believe should be achieved at COP?
I am seeing that this COP is a very sensitive meeting that is making decisions that can have an enormous impact on the future, especially for the poorest countries such as Ghana. The same countries that are causing most of the problems are also those that are giving a lot of development aid. If decisions are left for too long, then these countries will see that the money they provide as Aid will be wasted as the climate change situation becomes more severe in countries that depend on agriculture.

It is the small farmers that support much of the economy that will be hurt the most. It makes no sense to try and provide emergency aid in the aftermath of shocks, when a decision taken here could have avoided those shocks to start with.

What is your aim in your role in 2012?
I wish to continue to send a message globally and find ways to make my voice louder. But at the same time I will be working in our community to find our own solutions and take new actions, while we are waiting for the COP to do something useful. I believe that 17 years is too long!

What is your reaction to the COP being held in Durban?
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What should the deal look like?
We have to see a proper fund to support those that need it as a result of climate change. A deal must ensure very rapid decreases in emissions by those countries polluting the most - no country should be allowed to hide from their responsibilities, whether small or large. We need to get past discussions about historical responsibility and move forward based on reality now.

What is your aim in your role in 2012?
I wish to continue to send a message globally and find ways to make my voice louder. But at the same time I will be working in our community to find our own solutions and take new actions, while we are waiting for the COP to do something useful. I believe that 17 years is too long!
Understanding development through the eyes of adaptation: What works and what does not

By Ramesh Prasad Bhushal, Environmental journalist for 'The Himalayan Times'

Developmental processes are diverse and dynamic. However, there has been an ongoing debate on how development should be linked with the changing climate. The big question is whether there is a need to revamp existing policies and reframe them through the eyes of adaptation. Experts are arguing that "sustainable adaptation doesn’t pertain to identifying a particular 'sustainable' practice or action, but instead to develop a set of actions that contribute to socially and environmentally sustainable development pathways."

An extensive research project conducted in Ethiopia on pastoralism and climate change adaptation, supported by The Development Fund, argues there is an urgent need to shift the development and urgently change political structures, if socially and environmentally sustainable pathways are to be found. Speaking at the side event organized by The Development Fund and Gaia Foundation at COP 17, a pastoral expert from Ethiopia Tezera Getahun commented, there is a need to think critically about what types of adaptation are desirable and which groups or interests are promoted at the expense of others through particular adaptation actions.

Having a serious look at the developmental processes is even more prudent to the poor countries which are categorised as more vulnerable to climate change due to a complex dynamic of factors, and where development planning and integration of climate change lacks co-ordination and is constrained by capacity issues. To combat this and integrate an effective climate change response a reordering to the approach is needed. "Climate change is not a subject that deals with rainfall and weather only, but is an issue that affects everyday life. With this in mind and while working with communities in Nepal, we found that developmental processes need to have adaptation measures put first in order to succeed," said Krishna Lamsal, from Local Initiatives for Biodiversity, Research and Development (LI-BIRD).

Experts emphasised that communities have been applying their efforts to adapt to the changing climate for generations and their response is based on the social systems and distribution of resources. "Local capacity to respond to change, including how pastoralists have adapted to environmental variability for and the conditions and arrangements that allow them to continue to do so, such as land tenure rights, are important aspects of adaptation to climate change," added Getahun.

Working with the vulnerable communities is the best way to learn about adaptation and help identify the real needs that help to reduce threats from climate change. Different stakeholders in various parts of the world have their own methods of learning and have been implementing various methods to help communities to adapt. Gathuru Mburu, the coordinator of African Biodiversity Alliance, shared experiences on this commenting, "we focus on information sharing between older and younger generations, looking at old ecology and agriculture systems and the ways their elders previously adapted to their surrounding environments," said Mburu. "Sharing alone is not enough but it’s a start as the realities of climate change worsen". Programmatic intervention needs to combine approaches such as providing information along with seeds as one example.

Communities and their ability to adapt is the key to building essential resilience and the ability to dynamically adapt to the global challenge of climate change. Mainstreaming grassroots knowledge and simultaneously building sustainable local capacity is key.

Outreach is made possible by the generous support of