

## CAUX DIALOGUE ON LAND & SECURITY 2016

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### Realising the Potential of Land Restoration to Mitigate Migration

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#### Opening Remarks by Dr. Martin Lees delivered on Wednesday 29 June.

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# Land Use: a Key to Human Development, Climate Change, Migration and Peace

Ladies and Gentlemen,

I am very pleased to have the opportunity to speak to you this afternoon at this opening session of the Caux Dialogue on Land and Security.

I know that most of you here today are practitioners committed to achieving tangible results in the real world. You confront down-to-earth challenges to the lives, livelihoods and human security of your fellow citizens in the specific conditions of each of your countries and regions. You will be discussing very practical problems and solutions in the next few days.

As a prelude to your discussions, I have been asked to speak on a much broader topic: “Land use: a key to human development, climate change, migration and peace.” I will have to present these interconnected issues very swiftly and my analysis will inevitably be incomplete. But I hope we will have the opportunity to explore them in more depth in the discussion to follow and during the next few days.

I will first outline the serious threats and risks we face at this critical time in world affairs and then focus on the five issues: land use, human development, climate change, migration and peace. I will then suggest some summary conclusions which may be relevant to our discussions.

Let me start with the big picture:

Global economic growth has undoubtedly produced enormous benefits in health, literacy, life expectancy and living standards for hundreds of millions of people in both developed and developing countries. In many respects, we can consider it a great success that the intelligence and creativity of our species, *homo sapiens*, has enabled us to proliferate to the point that there are now 7.3 billion of us living on this small and fragile planet. But our survival, like that of any other species, will depend on preserving a viable balance with our environment. And here, the conservation and use of land is key.

The escalating scale of human impacts is devastating the environmental and ecological systems on which humanity absolutely depends. Global material extraction has increased 80% in the past 30 years. According to the Red List of IUCN, nearly 20,000 species of animals and plants around the globe – of those we have identified – are at high risk of extinction.

Also, humanity is overusing the regenerative capacities of the biosphere by over 50% each year: we are using up our biological capital, not only our revenue, at the cost of future generations. Terrestrial and ocean ecosystems are being destroyed and are under extreme stress in many regions of the world. Coral reefs are dying while deforestation in the tropics is running at around 13 million hectares per year, roughly the area of England. This is clearly unsustainable.

In this Anthropocene Age, the scale of human activities is already now overwhelming the natural systems of the planet. It is an illusion therefore to assume that the size of the global economy can continue to increase exponentially on the present fossil-fuel, resource-intensive base - simply because the injuries to the environment and their related costs will render this path unsustainable. But our strategy today to face these severe threats to the future is to stimulate further increases in consumption so as to recover as fast as possible to the pre-crisis path of growth and thus to double world output by 2030.

In effect, the dominant model of economic growth as measured by GDP, based heavily on our addiction to fossil fuels, on the continuous stimulus of consumption and on rising levels of pollution and waste, is no longer viable in environmental, social, economic and political terms. This was pointed out by the Club of Rome over 40 years ago.

Thoughtful and informed people across the world are aware of this reality, as defined by science and a rising tide of evidence, that the present path of world development is unsustainable and heading to disaster.

However, in spite of many summits, negotiations and declarations, little real progress has been made in recent decades to address the fundamental threats to world development and peace which have for too long been set aside under the pressure of events:

In summary:

- we are leaving the stable Holocene period which has allowed the development of our civilisation: but COP 21 still leaves the world on a path to around 4°C average global warming which would have devastating consequences;
- we are driving the 6<sup>th</sup> mass extinction of species in history, destroying the wonderful biodiversity on which we depend;
- we are already overusing world resources today but the growth of world population to over 9 billion people by 2050, coupled with the rising consumption of a growing middle class, will put additional, unmanageable pressures of pollution and waste on the fragile environmental systems of the planet;
- the continuing degradation of soils, water and the oceans will intensify food insecurity, poverty and migration for a growing world population;
- the concentration of wealth, extreme inequality, injustice and exclusion coupled with environmental stress will provoke migration, conflict and state failure and aggravate the difficulties of international cooperation in the face of truly global issues..
- The militarization of world affairs, driven by over \$1.7 Trillion in expenditures, is creating conditions for wider polarisation and conflict.

This swift overview shows that we have been making progress in global economic terms but at devastating environmental and human cost, and with increasing levels of inequality within and between nations, while several billion people remain effectively excluded from the benefits and opportunities of progress. This is an indictment of the values, paradigms and policies on which the functioning of the world economy now rests. For all these reasons, we must urgently reinvent the economy in both developing and developed countries, to move from quantitative growth to qualitative progress, if that is, we are to preserve a decent and peaceful future for all in an interdependent world.

On a more positive note, there are vast potentials of creativity, knowledge, scientific and technological capacities, accumulated experience, expertise and resources of all kinds which could be intelligently deployed to create a more just, stable and sustainable world.

The future is by no means pre-ordained but will be determined by our choices and actions – if, that is, we act in time. But time is running out.

Within this broad perspective, let me now focus briefly on the main themes of my talk, first the central issue of Land Use.

## Land use: where are we now?

The recent report of the Commission on Sustainable Agriculture in the Face of Climate Change points to the “multiple emergent challenges of food insecurity and undernutrition, climate change, increasing competition for food and water, degradation of land and biodiversity.” It underlines that, as global demand for food, fodder and bio-energy crops grows, soil fertility, biodiversity and water resources are being depleted. It estimates that, every year, 12 million hectares of agricultural land are lost to land degradation.

Two further points will clarify the present situation: one third of the world’s cropland is losing topsoil faster than new topsoil is forming; and intense ploughing, coupled with over-reliance on chemical fertilisers, is converting organic matter to CO<sub>2</sub>, with the result that cultivated soil can lose 50/70% of its carbon to the atmosphere.

The UN estimates that approximately 60% more food will be needed to feed a growing world population of around 9 billion people by 2050 and beyond. This should not be seen only as an economic and technological challenge but as a profound issue of ethics, justice and human rights. Access to food and decent nutrition are fundamental to the lives and health of the poor, who spend around 75% of their incomes on food. And it is the ability to purchase available food with income earned from productive employment which is generally key to averting hunger and malnutrition.

The World Agroforestry Centre in Nairobi, focusing on the need to move towards “climate-smart agriculture”, underlines that “both intensification and extensification are currently having a significant negative effect on the environment, depleting the natural resource base on which we rely....

The need to reduce environmental impacts while increasing productivity requires a significant change in the way agriculture currently operates....The demand for food is growing faster than cereal yields, while the limits to extension of the land area devoted to agriculture are tightening, due to water scarcity, soil depletion and competition with other uses, such as urbanisation and energy crops.”

The limits of further extensification of land use for agriculture on a finite planet are now evident: between 1950 and 2000, the world’s irrigated areas increased by around 300%, from 250 million acres to 700 million acres - but only by 10% between 2000 and 2010.

We are clearly entering a period of growing stress on world agriculture as the demand of a growing population and changes in consumption patterns confront tightening limits on production. And it is clear that the escalating impacts of climate change are already amplifying the environmental, social and economic drivers of food insecurity, affecting the intensity, frequency and seasonality of precipitation, sea level rise, glacier melt and aquifers.

According to IPCC, (AR5), there is clearly “a need for large scale, systemic and transformative changes in agriculture and food systems, recognising the opportunity costs of focusing on incremental adaptation.” In this respect, the movement towards sustainable agro-ecological

methods of farming and land use can yield major economic, social and food-security benefits while advancing climate justice and restoring soils and the environment.

This brief summary of land use in relation to food and agriculture is reinforced by consideration of the critical issue of fresh water. The fresh water, vital to human life and to the ecosystems on which humanity depends is under increasing stress across the world, through overuse, contamination, mismanagement and climate change. Water use is doubling about every twenty years. 500 million people are chronically short of water today: this figure could rise to around 4 billion by 2050 if present trends continue.

According to the recent World Water Development Report, as early as 2030, the planet could have available only 60% of the water required in the absence of significant changes in policy and management. This is crucial for food production as agriculture uses around 70% of water globally and around 90% in poorer countries.

According to Lester Brown, water supply is now the principal constraint on the expansion of world food supply, and aquifer depletion is now threatening food production in the three biggest producers, China, India and the USA

In this perspective of tightening constraints, let me turn now to human development.

## Human Development

According to the World Bank, some 1.3 billion people are trapped in poverty today while around 2 billion people are living on less than \$2 per day, with their basic needs for security, employment, health, food and nutrition unmet. In a \$78 Trillion world economy, this represents not only a failure of policy and organisation and a vast loss of human potential, but essentially a profound moral failure. And the gross inequalities between rich and poor are widening within and between countries: 1% of the richest people own around 50% of the world's wealth while the poorer 50% own only 4%. This is a recipe for alienation, polarization and ultimately, for conflict.

As you will all know, current population trends imply that global population will increase to between 9 and 10 billion people by 2050. If this increase actually comes about, it would have massive implications for the global environment already under stress, for competition for increasingly scarce resources, for international migration and for stability and peace.

Within such global estimates lie major differences: the age structure of nations is changing, with older and sometimes declining populations in industrialized countries, including China after 2030, and younger more dynamic but often frustrated populations in many megacities of the developing world.

The implications of such increases in population can be understood better by considering a few national examples. If present trends continue: the population of Afghanistan, now around 28 million, will rise to 45 million by 2025 and 75 million by 2050; India will overtake China as the largest population, rising to around 1.6 billion by 2050; the population of Nigeria, 33 million in 1950 reached

136 million in 2006 and is headed for 300 million in 2050. The population of Sub-Saharan Africa could rise to over 1.3 billion, with immense consequences for human livelihoods and security and for conflict and migration.

It is evident that careful conservation and use of available land will be crucial in preserving the carrying capacity of the planet to meet the needs and aspirations of a substantially larger global population.

## Climate Change

It is now widely recognised that climate change will prove of primordial importance in determining the future of humanity.

The world is warming fast. The past decade was by far the hottest decade ever measured. 2014 was the hottest year in the instrumental record – until 2015. The Arctic is at the warmest temperature for 120,000 years and Arctic sea ice levels are at the lowest ever recorded and falling fast. It is the oceans which are absorbing most – over 90% - of the excess heat. Climate change cannot be put aside as an issue for the future: it is already destroying the livelihoods, the food, water and human security and the lives of millions of people today.

I am sure that you will discuss in the coming days the critical links between land use, agriculture, ecosystems, water, climate change and human development. Agriculture and land use are critically linked to climate change in many respects. Taken together, agriculture and the food system contribute between 19% and 29% to global greenhouse gas emissions. It must be a priority to build the resilience of agriculture to climate risks and to increase research, development, training and extension services to improve food security. A major opportunity will be to expand patterns of agricultural production which can sequester carbon, a major potential contribution to reducing direct emissions while enhancing productivity and employment.

IPCC has made the vulnerabilities and risks of climate change for agriculture and food security very clear. In AR 5, IPCC expects climate change to have “uneven and immediate impacts on food security and crop yields, with climatic extremes reducing yields in major production areas” - with median crop yields dropping 2% per decade to 2100. A serious risk is that increasingly frequent extreme weather events could lead to multiple failures in the same year with major impacts on prices particularly for food importing countries. Food production systems in Africa will be particularly vulnerable with the risk of a reduction by 2050 of 35% for cereal crops across the continent and of 40% for tropical fisheries on which millions rely for protein.

Let me summarise the climate challenge with four key figures:

First, the changing weather patterns and the extreme events and damage we see across the world today – droughts, floods, hurricanes and melting ice for example – are the consequence of a rise in global average temperature of “only” 1°C since pre-industrial times, my first figure. Most of this rise

has occurred since 1970, a rate of warming unprecedented over at least the last 20,000 years. While we have talked for 21 years, greenhouse gas emissions have increased by over 65%.

And this 1° C rise is a global average figure: the increase for example in the Arctic and West Antarctic or at high altitudes is two to three times greater. This has enormous consequences for sea level rise and thus for fresh water aquifers and productive land.

Turning now to my second figure, governments have long decided that the maximum rise in global mean temperature and the target for the international negotiations should be 2°C, on the grounds that, if the rise in global average temperature does not exceed 2°C this will “prevent dangerous anthropogenic interference with the climate system.” However, science and evidence increasingly indicate that this target of 2°C is too high: it represents the boundary between dangerous and extremely dangerous climate change. At COP21, it was therefore agreed that a target of 1.5°C should be aimed for if possible.

I come now to my third figure: if we continue on the present business-as-usual path, then the global average temperature will rise by around 5°C or more by 2100. This would have devastating consequences for human civilisation: it is hard to imagine the consequences for the lives and livelihoods of the poor, and for agriculture, sea level rise and migration and also for the other species with which we share this planet. Large areas of the world would become uninhabitable and many of the world’s great cities would be devastated.

Finally, my fourth figure: if all the commitments which governments have made at COP21 in Paris to reduce emissions were to be implemented, we would still be on a path to an average rise of around 3.5°C to 4.8°C by 2100 or before. Paris 2015 did succeed in reaching universal agreement among the 197 parties. But we should have no illusions: in fact the world remains on a path towards catastrophic climate change. For this reason, the Agreement envisages further cycles of negotiation to achieve deeper cuts in emissions in future years. We can only hope that governments will implement the cuts they have indicated in time.

When asked what the difference would be between a rise of 2°C and a rise of 4°C, a top climate scientist replied: “the difference is simply human civilisation!”

It is important to understand one last point which may prove to be the most important: the need for urgent climate action is reinforced by the fact that the complex, interactive systems which drive the global climate will behave in non-linear ways, causing sudden shocks and changes.

We do not face simply a longer-term gradual process of global warming as many believe. There is growing concern in the scientific and expert communities that global warming, induced by anthropogenic emissions, will trigger a number of “positive feedback loops” which will provoke discontinuities and sudden shocks and then drive “runaway” climate change, beyond human influence. Once we pass such tipping points where these positive feedback loops take over, reductions in emissions will be ineffective.

As we fail to act and the planet warms, evidence now shows that these feedback processes are beginning to operate. But this reality is hardly reflected in the climate negotiations and thus, the very real risks of climate destabilisation are underestimated.

It is of course the poor in both developing and rich countries who already face the most severe impacts even though they are in no way responsible for the warming of the planet. In consequence, the numbers of environmental refugees within and between countries are rising fast. I now turn briefly to the related issues of migration and peace.

## Migration and Peace

As population increases in countries and regions, pressures on increasingly scarce productive land, water, living space and food are escalating. This intensifies competition for the resources essential for survival and triggers internal displacement and migration.

These tendencies, driven by population growth, poverty and violence, will be aggravated by the impacts of an increasingly hot, unstable and unpredictable climate. It is already clear that the impacts of climate change, through extreme weather events, droughts, desertification, floods and sea level rise will increasingly become “threat multipliers” of violence and a driver of the flows of refugees. As stated by President Jim Yong Kim of the World Bank, “Battles over food and water will erupt within the next five to ten years as the most significant direct impacts of climate change.”

As one tragic example, environmental stress has been a major factor in the tragic conflicts in Darfur and in Syria in particular, where five years of exceptional drought have driven 1.5 million people from rural areas into the overloaded cities, aggravating social and political instability.

As we see, the flow of refugees from Syria, and more widely from Africa has had enormous economic, social and political consequences for Western Europe, calling in question long-established patterns of international cooperation.

This underlines the critical links between world peace, migration and climate change, which is now widely considered, particularly in China and the US, to be a “non-traditional threat to security.” Climate change is unambiguously a global challenge demanding global action. If these are the consequences of a rise in temperature of “only” 1°C, we are right to be concerned about the future impacts of a warming climate in coming decades.

From this brief analysis, let me now suggest four points for your consideration:

First, the Paris Climate Conference has by no means assured a safe and stable global climate: years of committed efforts to promote development remain at risk. **Much stronger and much more urgent action to cut emissions is essential** if we are to preserve a stable climate, conducive to food and water security, poverty eradication and human development.

Second, **international cooperation between developed and developing countries must be revitalised** and the flows of finance, of green technologies and of know-how to developing countries

increased, for mitigation, adaptation and resource efficient development. This would not only promote sustainable low-carbon development across the developing world but would be in the vital interest of developed countries also, helping to avoid the “lock-in” of inefficient technologies and to preserve a stable global climate and world peace. Trillions of dollars were found rapidly to save the banking system yet \$100 billion per year cannot be found to preserve a stable global climate on which our civilisation depends.

Third, current models of growth - which are dominated by market fundamentalism and narrow neo-liberal economic analysis - are unsustainable and failing in human, environmental, political and also in economic terms. **New models and strategies for growth and changes in behaviour are urgently needed** to meet the needs and aspirations of a growing world population within the boundaries of a finite and fragile planet.

Fourth, we must **optimise the use of the scarce and vital land**, which is the focus of this conference. This will be key to meeting the intensifying needs and the diverse purposes of human progress.

Major programmes of restoration of degraded lands, coupled with the conservation of forests and with systematic efforts to conserve and protect threatened ecosystems offer enormous opportunities to improve the prospects for humanity. They can provide large-scale employment and reduce poverty while helping to protect the rights of indigenous peoples. They can lay the foundations for ecological agriculture in harmony with nature. And they can reduce the risks of catastrophic climate change by sequestering carbon in the soil, thus reducing the concentration of greenhouse gases in the atmosphere.

Ladies and gentlemen,

When I started work on these international issues at OECD in 1971, they were less acute, on a smaller scale and further ahead in the future. They were then more manageable and open to resolution. Due to our failure to act effectively and jointly for several decades, the issues we face today are far more substantial and dangerous. And they are no longer issues for the future: they are already damaging the lives, safety, health and livelihoods of millions of people today. The risks and impacts we face are escalating and immediate. It is therefore imperative to take strong international action if we are to achieve and preserve a progressive, prosperous and peaceful world.

I look forward very much to learning in the next few days of the many practical activities you are undertaking. And I thank you for your attention.

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