

“The Journey towards Net Zero: What lessons can Africa learn from Europe?”



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Background

The term Net Zero is used to describe a state in which greenhouse gas emissions into the atmosphere are balanced by greenhouse gases removed from the atmosphere. The increase in global temperature the world is experiencing is strongly linked to cumulative Carbon dioxide (CO₂) emissions, but other greenhouse gases, notably methane, also contribute. The 2015 Paris Agreement, signed by 194 Parties (193 States and the European Union [EU]), is a legally binding treaty that calls for a substantial reduction in emissions and for global warming to be limited to 1.5 percent above pre-industrial levels. There is almost unanimous scientific consensus that, if this target is to be met and the most damaging effects of climate heating are to be avoided, the net global emissions of Carbon dioxide (CO₂) must be reduced by about 45 percent from 2010 levels by the year 2030; and that net zero should be reached by around 2050.

More than 70 countries, including the largest CO₂ emitters (China, USA and the EU), covering about 76 percent of global emissions, have set net zero targets. However, the United Nations (UN) has indicated that the commitments made by governments to date fall far short of what is needed to reach net zero. The UN estimates that current national climate plans would lead to an 11 percent increase in global greenhouse gas emissions by 2030, compared to 2010 levels¹. Moreover, this assumes that countries would fully implement their plans and this seems highly optimistic at present.

Historically, Europe has been a major contributor to greenhouse gas emissions accounting for approximately 17 percent of global emissions since the 1880s. Between 1990 and 2020 greenhouse gas emissions in the EU have decreased by 32 percent but Europe, and other regions in the world, needs to reduce these further. The 2021 European Climate Law sets a legally binding target for the EU to reduce net greenhouse gas emissions by at least 55 percent by 2030, compared to 1990 levels and to achieve net zero status by 2050². EU institutions and the 27 Member States are obliged to take the necessary measures at EU and national level to meet these targets, at the same time recognising the need for equity and solidarity among Member States. This latter point is important as it is more challenging for some countries than others to move away from a dependence on fossil fuels. Although a transition to renewable sources of energy is key, the Climate law is designed to ensure that all EU policies contribute to the emissions targets and that each sector of the economy and society play their part. Individual

¹ <https://www.un.org/en/climatechange/net-zero-coalition>

² https://climate.ec.europa.eu/eu-action/european-climate-law_en

European countries are also introducing their own legislation. Of the six countries in the world that have adopted legally binding net zero targets, five are in Europe (Denmark, France, Hungary, Sweden and the United Kingdom); New Zealand being the other country.

The European Climate law formalises the European Green Deal, which is the EU's strategy for Europe's economy and society to become climate-neutral by 2050³. The Green Deal is an economic growth strategy and sets out pathways to achieve a transition to more sustainable methods of production and consumption. The aim is to cut emissions whilst at the same time securing new green jobs for citizens and helping to improve their wellbeing. The energy sector is by some way the largest contributor to greenhouse gas emissions, accounting for some 75% of emissions. There is a strong focus in the Green Deal on decarbonising the energy sector but attention is also given to other sectors, including transport and agriculture.

The Farm to Fork strategy is the EU's approach to greening its Common Agriculture Policy⁴. The strategy is the precursor to a legislative framework that is intended to strengthen the sustainability of food systems. It acknowledges that food systems are one of the key drivers of climate change and environmental degradation and that there is an urgent need to reduce dependency on pesticides and antimicrobials, reduce excess fertilisation, increase organic farming, improve animal welfare, and reverse biodiversity loss.⁵ It signals that there will be new measures to promote organic farming, helping Member States stimulate increases in the supply and demand for organic products. The strategy also proposes a new knowledge network with the ultimate aim of enhancing the sustainability of farming and increasing farm incomes.

Implications of the European Green Deal for Africa

What are the implications of the European Green Deal and the Farm to Fork Strategy for Africa? Some commentators have highlighted potential risks for the continent. One risk relates to the EU's plan to introduce sustainable global food standards, which it would apply to all producers. If producers in countries in Africa find it difficult to comply with these standards this could constitute additional nontariff trade barriers for exports to the EU⁵. African countries are already placed at a disadvantage due to subsidies to European farmers under the Common Agricultural Policy. They also face the challenges of meeting rules of origin as well as sanitary and phytosanitary standards in European markets. Another risk area is in the energy sector. A decline in demand for fossil fuels could affect countries whose economies are dependent on the export of oil and gas.

On the other hand, new opportunities may open up. The drive for renewable technologies will require increased imports of minerals such as cobalt and nickel and a substantial proportion of this demand could be met by mineral-rich African countries. In the arena of food systems, a more balanced partnership between Europe and Africa could help Africa adapt to the twin threats of climate change and land degradation. This could be done through increased levels of climate finance and stronger collaboration on research and innovation in areas such as organic agriculture and agroecology. Horizon Europe is the instrument through which the EU will support research and innovation to accelerate the transition to more sustainable, healthy and inclusive food systems. Research to restore soil health and develop new knowledge to scale up agroecological approaches in primary production is highlighted in the programme.

The Farm to Fork strategy refers to the development of Green Alliances on sustainable food systems and indicates that this will include cooperation with Africa, with calls for research proposals under

³https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_en

⁴https://food.ec.europa.eu/horizontal-topics/farm-fork-strategy_en

⁵ Zainab Usman et al (2021) What does the European Green Deal mean for Africa? Carnegie Endowment for International Peace. <https://carnegieendowment.org/2021/10/18/what-does-european-green-deal-mean-for-africa-pub-85570>

Horizon Europe. Individual research projects responding to priorities identified by all relevant stakeholders are clearly needed and substantial funds are being committed through Horizon Europe for its current Africa Initiative II call. However, experience from previous programmes has shown that stand-alone short-term research projects seldom reach their full potential to deliver impact. To achieve this it is also necessary to provide longer-term support through institutional structures that ensure effective coordination of research and innovation and facilitate knowledge exchange. In a response to the publication of the strategy, Agrinatura, a network of thirty-five European universities and research institutes and a sister organization of RUFORUM, welcomed the commitment to partnerships in the Farm to Fork strategy. At the same time Agrinatura stressed the importance of building on ‘structural partnerships for intensified collaboration in agriculture and food system research, education, capacity development, vocational training and food value-chain development.’ Agrinatura referred to the initiative on Food and Nutrition Security and Sustainable Agriculture (LEAP4FNSSA) that is implemented through the African Union (AU) – EU’s research and innovation partnership. The main output of LEAP4FNSSA is a multi-stakeholder research and innovation platform, which builds on previous initiatives and is designed to provide a long-term and sustainable coordination infrastructure, governance and funding mechanism. It is vital that this platform is adequately resourced and that stable long-term funding is committed.

New skills for green jobs

The transition to net zero in Europe is expected to deliver a significant number of ‘green jobs’ as renewable technologies are developed and applied. This implies that there will be a growing need for new skills in the workforce, including those working in food systems. There is an important social dimension to projected changes in the job market as workers in the fossil fuels industry are displaced. Job losses will not occur equally across regions and so this has to be taken into account in local planning processes⁶. Such disparities across regions may not be so evident for those working in food systems but labour-intensive jobs such as fruit picking will decline further in number as processes become increasingly mechanised. Mechanisation will also bring changes in the job market in African countries but some observers argue that this will not necessarily lead to large job losses⁷. However, in order to ensure a smooth transition for workers to new jobs it is important to be pro-active and analyse changing skill requirements in a timely manner and to do the analysis at regional and local levels. A lead-in time is required to develop new training programmes and curricula at Higher Education Institutions and vocational training centres as skill requirements may vary from place to place. At a more general level the EU has developed a Sustainability Competence framework (GreenComp) which is intended ‘to improve and develop the knowledge, skills and attitudes to live, work and act in a sustainable manner’ and is designed to support education and training programmes for lifelong learning.

The role of Higher Education Institutions

Higher Education Institutions have a vital role to play in facilitating the transition to net zero. They can do this in various ways. Firstly, HEIs can act as exemplars for society by making themselves carbon neutral⁸. This may involve substantial changes to the structure of buildings and other facilities and these may be costly. Another potential challenge is that carbon neutrality requires a switch to stable supplies of electricity from renewable sources, which may not always be available⁹. Experience from HEIs in Europe has shown that actions have not always matched stated commitments but progress is being made. Independent verification of compliance with sustainability commitments is important. In the United Kingdom, the London School of Economics was the first HEI to be accredited as carbon neutral

⁶ Rachel Bray et al (2022) Skills deployment for a ‘just’ net zero energy transition. *Environmental Innovation and Societal Transitions* **42**: 395-410. <https://doi.org/10.1016/j.eist.2022.02.002>

⁷ Malabo Montpellier Panel (2018) *Mechanized: Transforming Africa’s Agriculture Value Chains*. Dakar, June 2018

⁸ The terms ‘carbon neutral’ and ‘net zero’ are often used interchangeably but there is a difference, the main one being that net zero does not encompass compensation for emissions; for example, through carbon offsets

⁹ Erica Udas et al (2018) The “carbon-neutral university” – a study from Germany. *International Journal of Sustainability in Higher Education* 19(1): 130-145. <https://doi.org/10.1108/IJSHE-05-2016-0089>

by the global certification organization BSI, confirming that it met the international standard for carbon neutrality (PAS 2060). A cautionary note is that HEIs often seek to mitigate their unavoidable or 'residual' emissions through carbon reduction projects elsewhere. Recent analysis of carbon offset projects suggests that many projects under the Clean Development Mechanism are not delivering reductions in carbon emissions¹⁰.

Secondly, HEIs can support inter-disciplinary research, which addresses sustainability issues and takes account of linkages between agriculture and other sectors within a food systems or climate change framework. Interdisciplinary research has been carried out in some HEIs in Europe for some time but it has seldom been institutionalised across faculties and departments. This is starting to change, one example being Oxford University's Oxford Net Zero initiative¹¹, which engages in interdisciplinary research and serves as a platform for engagement with key stakeholders in climate science, policy and action. Research councils and other bodies, which fund research programmes are now issuing more calls for proposals for interdisciplinary research, including the establishment of interdisciplinary research centres.

Thirdly, HEIs can address sustainability in their teaching and learning activities and these can be informed and enriched by interdisciplinary research. HEIs in Africa can take advantage of a growing number of open access teaching materials, such as those being developed in Open Education Resources Africa and the Agriculture, Health and Nutrition Academy, and adapt them to local requirements sometimes with additional pedagogical support¹².

Finally, HEIs can use their outreach programmes to increase awareness of the need to live sustainably, promote behaviour change and influence policy at central and local levels. Outreach has traditionally been seen as a separate and discrete activity at HEIs but engagement with 'outside' stakeholders is increasingly being integrated into core activities. In Europe, this process has been hastened through the concept of the civic university¹³ in which strong links are made with its social and geographical environment to benefit society. Such organizations and alliances of organizations are developing strategic partnerships with HEIs in Africa. This makes these bi-continental networks well placed to participate in actions under the New EU-Africa Innovation Agenda to enhance cooperation in science, technology and innovation, which has identified the Green Transition as one of its four priority areas.

Orienting HEIs to adopt and promote sustainability in their operations requires strong leadership and rigorous monitoring and reporting systems to track progress. But this should not be top-down and requires the active engagement and support of all staff within a clear institutional framework. It also opens up opportunities for students to contribute to the design and implementation of sustainability initiatives within HEIs and so develop skills which they will use both in the workplace and at home.

Some reflections

The road to net zero in Europe is likely to be a long and rocky one. Important steps have been taken in the policy and legislative arenas to facilitate the process but actions on the ground have been slower than promised. Unexpected global events can disrupt well-made plans, governments may push back timeframes and vested interests act as a barrier to change. But positive action on sustainability does not come from central government directives alone. Cities and municipalities in many countries around the world, including in Europe and Africa, are passing net zero resolutions and activist groups are exerting pressure for more sustainable practices. However, there is also resistance to change from individuals such as motorists unwilling or unable to switch from polluting vehicles to more expensive

¹⁰ Raphael Calel et al (2021) CESifo Working Paper No. 9368. <http://dx.doi.org/10.2139/ssrn.3950103>

¹¹ <https://netzeroclimate.org/about-us/>

¹² <https://www.oerafrica.org/> and <https://www.anh-academy.org/anh-academy>

¹³ See for example the CIVIS alliance of 11 European universities <https://civis.eu/en/about-civis/universities>

greener alternatives. Growing awareness of the importance of living more sustainably may not be sufficient to bring a change in behaviour and so financial incentives are needed to help bring this about in the key sectors of energy and transport.

Fossil fuel companies are not investing quickly enough in renewable energy and act as a barrier to change at the pace that is needed. This has led to increased litigation by individuals and environmental organizations against both private companies and governments. In Sweden, for example, an action has been brought by over 600 claimants against the government. They claim that the government is not taking adequate measures to mitigate climate risk and argue that this contravenes their rights to life, private and family life, non-discrimination and property under the European Convention on Human Rights

HEIs in Europe and Africa will continue to have a key role in carrying out the science that documents climate-heating processes and contributes to green technologies that provide solutions to emerging problems. They have a clear responsibility to orient their teaching programmes towards addressing sustainability issues and ensure that students, including lifelong learners, have the necessary skills to equip them for future employment and self-employment. Moreover, this needs to be done through a gender and inclusivity lens so that there are equal opportunities for all to participate in the changing work environment. In Africa, HEIs should engage with decision makers to design a framework for a just transition to net zero. This would include modalities for partnership with external partners such as the EU and reflect the development needs in African countries to deliver quality jobs and sustainable economic growth.

ABOUT THE AUTHOR

Dr. Tim Chancellor is a Visiting Fellow in Capacity Strengthening (individuals, organizations, and institutions) and Partnerships at the University of Greenwich in United Kingdom. His early work was in sustainable pest and disease management in rice, banana, groundnut, and tomato and he had long-term assignments in Southeast Asia and sub-Saharan Africa. He was also involved in several research and consultancy activities in Latin America. He led NRI's Plant, Animal & Human Health Group from 2001 to 2006 and from 2007 to 2021 coordinated the Institute's work on capacity strengthening and partnership development. He helped to develop and manage the £11m continent-wide Strengthening Capacity for Agricultural Research and Development in Africa project funded by DFID (now FCDO). He has maintained his research interests in sustainable agricultural systems and from 2014-2017 he acted as Liaison Scientist for the McKnight Foundation's Collaborative Crop Research Programme in southern Africa. He has a long-standing involvement in Agrinatura, the European Alliance on Knowledge for Agricultural Development, and has worked extensively with the Regional Universities Forum for Capacity Building in Africa (RUFORUM). He is currently a member of RUFORUM's International Advisory Panel. He received a prestigious award by RUFORUM for his excellent and global services to higher education and agricultural development in Africa.

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