

Post-2015 and SDGs



Nourishing people, Nurturing the planet

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THEMES**

Highlights

- Energy is central to sustainable development. It accelerates social and economic progress and enhances productivity.
- Energy is closely linked to food security and poverty eradication. Lack of energy is a fundamental barrier to eradicating hunger and malnutrition and combating poverty.
- Food systems will gradually have to decouple from fossil fuel dependence so that they can deliver more and better food with less and better energy.
- Achieving the transformation to energy-smart food systems will require a systemic perspective, better policymaking coordination, appropriate legal frameworks and a comprehensive multi-stakeholder dialogue and global partnership to support action.
- The FAO multi-partner programme "Energy-Smart Food for People and Climate" seeks to support stakeholders in improving energy efficiency, increasing the use of renewable energy, and improving access to modern energy services in food systems.

Energy

Overview

The UN General Assembly declared 2012 as the "International Year of Sustainable Energy for All" and 2014-2024 the "Decade of Sustainable Energy for All". This is highly relevant to food security. Energy has a key enabling role in achieving food security and better nutrition. It is essential for efficient and more inclusive food chains, allowing higher outputs. Energy prices affect agricultural inputs and the cost of production, and hence influence food prices.

Current energy use in food systems is unsustainable:

- Food systems currently consume 30 percent of the world's available energy, with more than 70 percent occurring beyond the farmgate, and produce over 20 percent of the world's greenhouse gas emissions (around 31 percent if land-use change is included);
- At the same time, about one-third of the food we produce is lost or wasted, and with it about 38 percent of energy consumed in food systems;
- Modern food systems are heavily dependent on fossil fuels. Currently, 85 percent of total primary energy is fossil fuel based;
- Nearly one in five people around the world do not currently have access to modern energy services, and approximately three billion rely on traditional biomass for cooking and heating. This use of biomass for energy is often unsustainable with serious adverse consequences for health, the environment and economic development;
- Finally, in the next decades there will be significant and simultaneous increases in water, energy and food needs to be met by a degraded and depleted natural resource base.

Renewable energy holds potential for addressing the sustainable energy challenges. Bioenergy, in particular, has been promoted as a means to improving energy security and energy access, and, possibly, mitigating climate change. Bioenergy is all energy derived from biofuels, which are fuels derived from biomass. They come in liquid, gaseous and solid form and can be used for heating and cooking, electricity production and as transport fuels. Biofuels are linked to all four dimensions of food security – availability, access, stability and utilization of food. Compared to other energy sources, bioenergy has the potential to offer poor countries many advantages including renewed investment in the agriculture sector, economic growth, increased energy security and access, rural development opportunities and reduced GHG emissions. However, to develop the full potential of the bioenergy sector, growth in bioenergy has to be managed in an economically, socially and environmentally sustainable way.

Key challenges

The main challenge areas in the interface between [energy](#) and [agriculture](#) include:

- *Sustainable bioenergy*: This complex subject can be approached using the FAO sustainable bioenergy [decision-support package](#), which includes various tools for situation analysis, implementation, and monitoring and evaluation;
- *Energy for sustainable intensification of agricultural production*: Knowledge has been gained over decades on the adoption of agro-ecological practices that produce more and better food with less and better energy;
- *Renewable energy technologies for reducing post-harvest food losses and adding value*: Numerous technologies such as solar crop driers and refrigerators can increase smallholder income (and its diversity) and resource efficiency;
- *Access to clean cooking fuel and technologies*: There is scope to build on guidelines for increasing the sustainability of charcoal production, and for reducing fuelwood and charcoal consumption by enhancing access to clean cookstoves.

The challenges facing the energy sector are interlinked and therefore require an integrated or “nexus” approach.

What needs to be done?

Modernizing food and agriculture systems by increasing the use of fossil fuels, as in the past, may not be an affordable

or sustainable option because of climate change and the influence of high and volatile fossil fuel prices on the cost of production and food prices. As a result, due consideration to energy and its links with water and food production and future use in agriculture development is crucial. In particular, the agri-food value chain will have to become gradually decoupled from fossil fuel dependence so that it can deliver more food with less and cleaner energy.

Priorities for the way ahead should include:

- Addressing the challenges of meeting the need for significant and simultaneous increases in water, energy and food in a context of climate change and stressed natural resources;
- Supporting countries in the design and implementation of sustainable bioenergy policies and strategies that foster both food and energy security, and agricultural and rural development in a climate-smart way;
- Supporting farmers learn the agro-ecological approach, adapt it to their local conditions and disseminate suitable practices through farmer field schools and other networks and movements;
- Scaling up small-scale decentralized renewable energy systems on farms and in rural areas;
- Reducing food losses (particularly in developing countries), partly through improved access to post-harvest technologies; and reducing waste (particularly in developed countries) through consumer education;
- Improving access to energy through sustainable biomass production, higher transformation efficiency of biomass to bioenergy and introduction of culturally acceptable and clean cookstoves.

Achieving the above will need inclusive multi-stakeholder, cross-sectoral partnerships, better governance and increased financing and technology-sharing to bridge the transition to sustainable food and energy systems. The FAO multi-partner programme “[Energy-Smart Food for People and Climate](#)” addresses the above challenges. This programme can make a major contribution to sustainable development, an inclusive green economy and the [Sustainable Energy For All \(SE4All\)](#) initiative by achieving the following objectives at all stages of the food chain:

- Improving energy efficiency;
- Increasing the use of renewable energy;
- Improving access to modern energy services through integrated food and energy production.