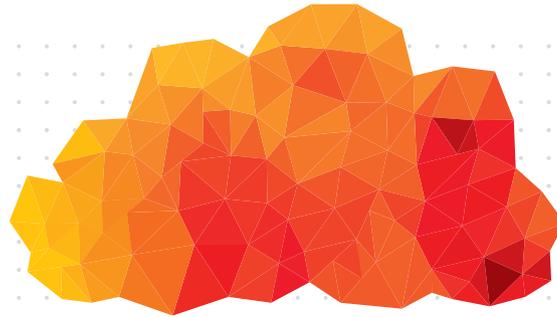


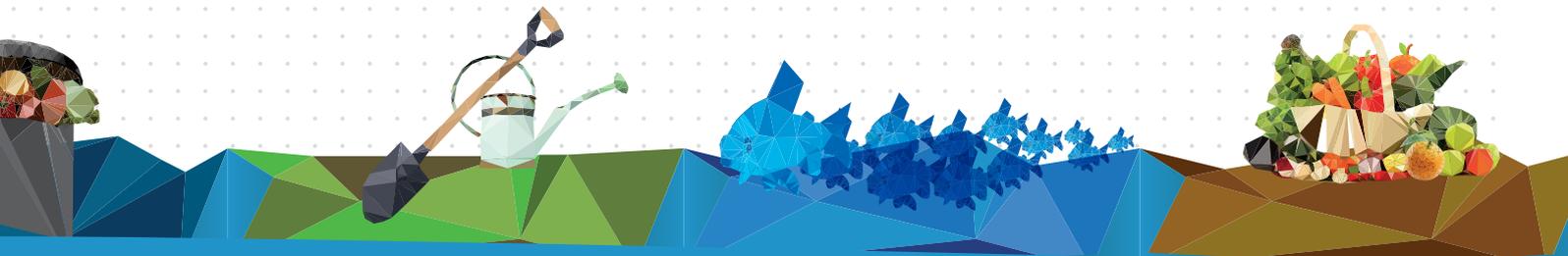


Food and Agriculture
Organization of the
United Nations

16 October 2016
World Food Day



Climate is changing.
Food and agriculture must too.



Let's adapt agriculture to climate change to build the Zero Hunger Generation



World Food Day

Each year, the Food and Agriculture Organization of the United Nations (FAO) celebrates World Food Day on 16 October to commemorate the founding of the Organization in 1945. Events are organized in over 150 countries across the world, making it one of the most celebrated days of the UN calendar. These events promote worldwide awareness and action for those who suffer from hunger and for the need to ensure food security and nutritious diets for all. World Food Day is also an important opportunity to send a strong message to the public: we can end hunger in this lifetime and become the Zero Hunger Generation, but everyone needs to work together to achieve this goal.

16 October 2016
World Food Day





2016, a year for climate action

At the UN Sustainable Development Summit in New York in September 2015, 193 countries pledged to end poverty and hunger, protect the planet and ensure prosperity for all. A little over six months later, 177 parties to the United Nations Framework Convention on Climate Change (UNFCCC) convened in New York to sign the Paris Agreement on Climate Change, which recognizes the importance of food security. The global goal for achieving Zero Hunger is 2030 – an ambitious goal, and one that cannot be reached without addressing climate change.

Climate is changing. Food and agriculture must too.

Climate change is having a major impact on food security. Many of the 800 million people suffering from chronic undernourishment are small-scale farmers, fishers and pastoralists who are hardest hit by higher temperatures and in weather-related disasters. These disasters are exacerbated by climate change and are increasing in frequency and intensity. Without concerted action to build resilience, many of the world's poorest and most vulnerable inhabitants will struggle to generate enough food and income to feed themselves and their families. Without food security, social and economic development is not possible.

Climate change also threatens the stability of food prices. Variable rainfall and temperatures, as well as extreme weather

events, could result in a significant decline in yields for major crops (maize, wheat, rice and soybeans) by the beginning of the next century. The effects of this decline on food prices and security could be widespread.

Agricultural sectors – crops, livestock, forestry, fisheries and aquaculture – can play a crucial role in addressing this complex challenge. By adopting sustainable agricultural practices tailored to local contexts, smallholders can make considerable productivity and income gains, while increasing the resilience of their agricultural activities and income to extreme and variable weather. Adaptation strategies such as these are vital to combating poverty and hunger in a changing climate.





Agricultural sectors are responsible for about 70% of global water use and have a considerable impact on the health of soils, forests and ecosystem services. Sustainable agricultural practices that improve ecosystem health and natural resource management can halt and even reverse the over-exploitation of natural resources and the degradation of ecosystems.

Agricultural sectors also account for 20-25% of global greenhouse gas (GHG) emissions. Sustainable agricultural practices can increase productivity and resilience, reduce GHG emission intensities, ease pressures that drive deforestation, and improve the health of soils, landscapes and forests – all of which sequester carbon. These mitigation

benefits can often be achieved at little or no additional cost, without inhibiting overall agricultural development.



How can we adapt agriculture to the effects of climate change and reduce GHG emissions?

- implement sustainable natural resource management (e.g. reduce food losses and waste and avoid deforestation and overfishing);
- improve soil management and fertility;
- increase practices that enhance CO₂ sequestration in forests and reduce fossil fuel use;
- better integrate water management;
- convert animal waste into biogas as an alternative and renewable energy source;
- prevent and/or prepare for climate-related shocks;
- create climate-resilient fisheries and aquaculture through storm-resistant fish cages and ponds and adaptive fisheries management.

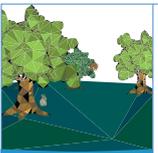






Forestry

The degradation of the world's forests is proceeding at an alarming rate. Each year about 13 million hectares of forest are lost or converted to other land uses. Deforestation and forest degradation has a considerable impact on the climate, accounting for 10-11% of global GHG emissions. Deforestation also has a significant effect on poor populations who earn income from forestry activity.



Manage forests sustainably. Trees absorb carbon from the atmosphere and support livelihoods.

Central Africa

is home to the second largest tropical rainforest area in the world with over 240 million hectares. FAO has reported an annual loss in this region of about 3.1 million hectares of natural forest in the last five years.

FAO together with the United Nations Development Programme (UNDP), the World Bank and international donors, is assisting six Central African countries with policy reforms to promote the conservation and sustainable use of forest resources. This Central African Forest Initiative (CAFI), launched at the UN Sustainable Development Summit in 2015, will play a vital role in climate change mitigation and poverty alleviation in the region.



Agriculture

FAO estimates that agricultural production (crops, livestock, fisheries and aquaculture) will have to increase by about 60% by 2050 to feed a growing global population. In parallel, climate change is expected to reduce the yields of key staples. Without urgent and concerted action to tackle climate change, estimates suggest that by 2100 maize yields could decline by 20-45%, wheat yields by 5-50%, rice yields by 20-30%; and soybean yields by 30-60%.

To feed a growing global population in a changing climate, the world must transition to more productive, resilient and sustainable forms of agricultural

development. The Climate-Smart Agriculture (CSA) approach offers one promising avenue for doing so. CSA aims to achieve three main objectives: sustainably increase agricultural productivity and incomes, adapt and build resilience to climate change, and reduce and/or remove greenhouse gas emissions, where possible.

FAO

is among the world's leading sources of expertise on CSA and has distilled this expertise into its comprehensive Climate-Smart Agriculture Sourcebook. FAO has also launched a CSA project to support farmers in Guatemala and Honduras to implement climate-resilient agroforestry systems. The Quesungual system, named after the village where it was first developed, is based on traditional farming practices in both countries as an alternative to slash and burn agriculture. By conserving the soil cover and making efficient use of fertilizers, the project supports the sustainable management of vegetation, soil and water resources in drought-prone hillsides. In addition to promoting enhanced soil and water conservation, the system minimizes emissions and produces more resilient and productive agriculture systems.

The Quesungual system meets the needs of farmers for fruit, timber, firewood and grains, and also generates income when sold on the market. Once farmers achieve food security, crop diversification increases product variety. When basic grain security is ensured, families can invest their time in improving their living conditions and their education.



Change the future of agriculture. Change the future of hunger.

FACT 01 Climate change hits the world's poor hardest. Over 70% of the world's poor rely on agriculture and natural resources for their livelihood.

FACT 02 The world aims to achieve **ZERO HUNGER BY 2030.**

Addressing climate change is crucial to continuing the fight against hunger and achieving this goal.

FACT 03 FAO estimates that agricultural production must rise by about 60% by 2050 to feed a larger and generally richer population. Climate change constitutes a major obstacle to achieving this objective.

FACT 04 **About 25%** of the negative economic impacts

from climate-related disasters in developing countries are borne by the crop, livestock, fisheries and forestry sectors.

FACT 05 The livestock sector contributes nearly two-thirds of agricultural GHG emissions and 78% of agricultural methane emissions.

FACT 06 Global food loss and waste generate 8% of total GHG emissions annually.

FACT 07 Over one-third of food produced worldwide is lost or wasted. The global costs of food wastage are approximately USD 2.6 trillion per year.

FACT 08 Global food wastage emissions are almost equal to global road transport emissions.

If food waste were a country, it would be the 3rd largest emitting one in the world.

FACT 09 Declining crop yields may already be occurring and decreases of 10% to 25% and above may be widespread by 2050.

FACT 10 **By 2050,** catches of main fish species

are expected to decline by up to 40% in the tropics, where livelihoods, food and nutrition security depend strongly on the fisheries sector.

FACT 11 Deforestation and forest degradation account for an estimated 10-11% of global GHG emissions.

FACT 12 Climate change can transfer risks of food-borne diseases from one region to another, threatening public health.

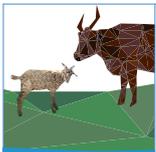


Livestock

The livestock sector produces about 14.5% of human-induced GHG emissions, which are responsible for climate change. Beef and cattle milk production account for the majority of these emissions (41% and 20% respectively). The demand for livestock products will rise in the coming years as incomes and populations continue to grow, underlining the clear need to reduce the level of livestock production emissions.

There is significant scope to reduce GHG emissions from livestock. The use of better quality feed can lower emissions from enteric fermentation and manure. Better animal health and husbandry practices

improve productivity and reduce emissions from 'unproductive' herds, thereby contributing to food security and poverty alleviation, while reducing environmental footprints. Manure management practices that recover and recycle nutrients can also make an important contribution. In most cases, such practices will also result in improved productivity and income.



Reduce greenhouse gas emissions with better livestock management.

FAO

is working with governments and livestock sector stakeholders to make this happen through its involvement in the Global Agenda of Action in support of Sustainable Livestock Sector Development. In China, Thailand and Viet Nam, for example, the FAO-led Livestock Waste Management in East Asia Project is supporting a strategic framework to reduce the negative environmental and health impacts of concentrated livestock production on water bodies and populations.

The project promotes the exchange and transfer of technology and approaches and environmental awareness-raising among farmers and government staff on waste management and policy. It emphasizes collaboration between government, the private sector, financial institutions, academia, research institutes and farmers, and supports the introduction of new technologies and designs for large and medium farms, with a view to reducing GHG emissions and improving long-term social, economic and environmental sustainability.

FAO also provides comprehensive and reliable assessments of the environmental impact of climate change on the sector and the associated effects on food security and poverty reduction, as well as the potential for mitigation. This information is crucial for policy dialogue, strategic guidance and advocacy.



Tackling climate change and fostering sustainable development

- Climate change is already affecting public health, food and water security. Climate change, left unchecked, will reverse development gains made over the last decades and make further gains impossible.
- Investments in sustainable development will help to address climate change by reducing greenhouse gas emissions and building climate resilience.
- Action on climate change will simultaneously drive sustainable development.
- Tackling climate change and fostering sustainable development are two sides of the same coin. Sustainable development cannot be achieved without climate action and many sustainable agricultural practices address the core drivers of climate change.



Food loss and waste

Over one-third of all food produced globally is lost or wasted. This amounts to about 1.3 billion tonnes of food per year, enough to feed the 800 million hungry people in the world. This is a lost opportunity to enhance food security and nutrition. The production, processing and distribution of food that is lost or wasted also accounts for a significant share of global GHG emissions. Additional GHG emissions are linked to rotting food in landfills, which releases methane – a GHG about 25 times more potent than carbon dioxide.

In developing countries, a significant proportion of food spoils before it reaches markets. Investments in processing and

storage facilities, especially cold storage and improved transport networks, can significantly reduce food loss and waste. In developed countries, food waste is often associated with the practice of discarding food that may be aesthetically unappealing or has passed its expiration date while still fit for consumption. Changing consumer behaviour and fostering technological innovation in this area can have a considerable impact.



Waste less. Global food wastage emissions are almost equal to global road transport emissions.

FAO

supports 47 countries in the area of food loss and waste. It provides technical support to countries to help identify loss levels and promotes cooperation between national and regional organizations and public and private partners to reduce food loss and waste.

This includes the Global Initiative on Food Loss and Waste Reduction (SAVE FOOD), a unique partnership with the private sector, which comprises over 600 companies and organizations active in food losses and waste reduction. SAVE FOOD aims to drive innovations, promote interdisciplinary dialogue and spark debates to generate solutions across the entire value chain “from field to fork”.



Natural resources

Current patterns of agricultural development are over-exploiting and degrading the world's natural resources. Agriculture is responsible for about 70% of global water use, but about 33% of land used for agriculture is moderately or severely affected by soil degradation. This undermines farmers' productivity and resilience as well as the long-term health of ecosystems on which rural populations depend.

More sustainable agricultural practices are essential to address these challenges. Sustainable soil management approaches are particularly important, as they improve agricultural productivity, incomes and resilience while simultaneously restoring the health of watersheds and land. Healthy soils form the basis for farming and long-term food security, and also provide an important contribution to sequestering carbon.

FAO

is helping to lead the way in this area through its involvement in the Global Soil Partnership (GSP). In the Near East North Africa region, FAO has worked with international and regional soil experts to analyse the state of soil degradation and soil management. Regional Soil Partnerships (RSP) have been set up to develop global and regional action plans for sustainable management and monitoring of limited soil resources, as a key element in sustaining food security and the environmental functions of the soils.

These partnerships are built on key principals emphasizing improved global governance for soil protection and sustainable productivity, greater investment, technical cooperation, education and awareness, targeted soil research and development, better quality and availability of soil data, and harmonization of methods, measurements and indicators for the sustainable management and protection of soil resources.



Nurture natural resources for future generations.



Fisheries

Oceans and wetlands are critical to global food security and are key to regulating the world's climate. Oceans store about 50 times more carbon dioxide than the atmosphere, and are home to about 80% of all life on the planet. Oceans, wetlands and inland water bodies also support the livelihoods of about 12% of the world's inhabitants, many of whom earn a meagre income and are extremely vulnerable to climate change.

Despite these vital contributions, the world's aquatic resources are under extreme stress from over-exploitation, pollution and climate change. FAO estimates that catches of key fish species in the tropics could decline by up to 40% by 2050.



Make fisheries and aquaculture more resilient and efficient to feed the future.

FAO

is helping to improve knowledge of the impact of climate change on fisheries and the livelihoods of fishers, and is working to support the development of key policies and action plans. It undertakes global and regional assessments of the vulnerability of fisheries and aquaculture sectors and has produced a Code of Conduct for Responsible Fisheries.

FAO also works to identify and reduce the vulnerability of fisheries and aquaculture systems by improving their resilience and adaptability to shocks, climate change, ocean acidification and natural disasters. To address climate change and variability, FAO has developed Voluntary Guidelines for Securing Sustainable Small-scale Fisheries in the Context of Food Security and Poverty Eradication.



Food systems

Climate change is undermining food production, while existing agricultural practices and patterns of agricultural development threaten the natural resources on which farming depends. Against this backdrop, we are trying to eradicate hunger among almost 800 million people who are chronically food insecure. The status quo will no longer suffice. Production, distribution and consumption patterns have to change to address these complex challenges. There is a need to shift to sustainable food systems.

Consumers have a particularly important role to play by purchasing food produced in a sustainable way. This means better

management of natural resources, improved environmental stewardship and respect for key International Labour Standards. The cumulative effect of such consumer decisions can shape entire food value chains. A variety of labelling schemes and instruments already exist that can inform such decisions. For example, many countries have created sustainable seafood guides that consumers can use to inform their purchases.

FAO

in collaboration with UNEP, set up the Sustainable Food Systems Programme (SFSP) in 2011 to catalyse partnerships among international agencies, governments, industry and civil society to promote the transition to sustainable food systems.

The SFSP promotes sustainable consumption and production (SCP) practices across food systems, focusing on the relationship between consumption and production. FAO also supports the Save Food Initiative to promote changes in consumer behaviour linked to food waste.



Make food systems sustainable for a Zero Hunger Generation.



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