Food production must increase up to 60 percent to meet the demands of a global population expected to reach 9.7 billion in 2050. As some 80 percent of this increase must come from land that is already under cultivation, we need to intensify production, producing more on the same area of land. Sustainable crop production intensification is an eco-friendly approach to farming that will help achieve the higher yields needed while enhancing and protecting natural resources. It combines traditional knowledge with modern technologies that can be adapted to the specific needs of farmers.

What we do

FAO encourages sustainable crop production intensification farming practices and technologies that support the development of resilient crop production systems. The approach is founded on a set of science-based environmental, institutional and social principles:

ENVIRONMENTAL PRINCIPLES
FAO promotes agricultural management practices, such as Conservation Agriculture, which includes minimum soil disturbance, permanent soil cover and increased on-farm species diversity. It supports the sustainable use of plant genetic resources through the use of quality seeds of adapted varieties. FAO also provides assistance to farmers for the extension of integrated pest management that builds on natural pest control and more efficient use of inputs, such as fertilizer and water for maintaining healthy soils.

INSTITUTIONAL PRINCIPLES
FAO fosters cooperation among government ministries and other key stakeholders in the development of integrated policy frameworks and strategies for sustainable crop production intensification. It builds partnerships and enhances information exchange with a range of global and regional organizations (e.g. research and development, finance, trade, environmental governance) engaged in agricultural development. It also provides policy and technical guidance and institutional support to member countries in the transition towards more sustainable crop production systems.

SOCIAL PRINCIPLES
FAO’s farmer-centered approach to community-based learning – known as Farmer Field Schools – builds on local practices and traditional knowledge. FAO also promotes technological innovation through information dissemination and capacity development on ecosystem-based approaches to crop production adapted to the specific agro-ecological and socio-economic conditions of farmers.
Understanding the context

Crop production is the foundation of world food security, and it is at risk. Climate change, environmental degradation and stagnating yields are threatening world food security now and will continue to do so in the future. It is recognized that the enormous gains in crop production and productivity achieved through the Green Revolution were often accompanied by negative effects on agriculture’s natural resource base. In many countries, decades of intensive cropping have degraded fertile land and depleted groundwater, caused pest upsurges, eroded biodiversity, and polluted air, soil and water.

Most of the world’s hungry and extremely poor live in rural areas, and include millions of smallholder farmers who are bearing the brunt of today’s major global changes: widening economic inequality, degradation of ecosystems on which food production depends, and the quickening pace of climate change, which threatens crop yields worldwide.

THE CHALLENGE

Food production and consumption need to be placed on a truly sustainable footing. In order to meet projected demand over the next 40 years, farmers in the developing world must double food production, a challenge made even more daunting by the combined effects of climate change and growing competition for land, water and energy.

The present paradigm of intensive crop production cannot meet the challenges of the 21st century. In order to grow, agriculture must learn to save.

Sustainable crop production intensification, also known as ‘save and grow’, represents a major shift from the homogeneous model of crop production to knowledge-intensive, often location-specific, farming systems. This new paradigm uses an eco-system approach that draws on nature’s contribution to crop growth and applies appropriate external inputs at the right time, in the right amount. Hence, there is a need to move from input-based to knowledge-based cropping systems.

For optimal impact on productivity and sustainability, Sustainable crop production intensification will need to be applicable to a wide variety of farming systems, and adaptable to specific agro-ecological and socio-economic contexts.

The challenge facing policymakers is to find effective ways of scaling up sustainable crop production intensification so that eventually hundreds of millions of people can benefit. With policy support and adequate funding, sustainable crop production intensification could be implemented over large production areas, in a relatively short period of time.