



Save and Grow in practice maize · rice · wheat

A guide to sustainable cereal production



In 2011, FAO's best-selling book, **Save and Grow**, proposed a new paradigm of agriculture, one that is both highly productive and environmentally sustainable.

In order to meet unprecedented demand for food over the next 40 years, FAO called for sustainable crop production intensification, which produces more from the same area of land while conserving natural resources, reducing negative impacts on the environment and enhancing the flow of ecosystem services.

This new book looks at the application of 'Save and Grow' practices and technologies to the production of the world's key food security crops – maize, rice and wheat. With examples drawn from developing countries around the world, it shows how eco-friendly farming systems are helping smallholder farmers to boost cereal yields, improve their livelihoods, protect the environment and build resilience to climate change.

What does sustainable crop production intensification 'look like'?

1 In East Africa, two of the most serious maize pests can be overcome by growing two local plants in maize fields. The 'push-pull' system of pest management has been adopted by 70 000 smallholder farmers.



2 From Madagascar, System of Rice Intensification practices have spread to Asia, where they are helping farmers to produce more rice and income using less water, less fertilizer and less seed.



3 In Central America, farmers have adopted a slash-and-mulch production system that preserves trees and shrubs, conserves soil and water, doubles yields of maize and beans, and even resists hurricanes.



4 Worldwide, wheat farmers grow legumes to improve the health of soil and provide a natural source of nitrogen, which boosts wheat yields. Legumes also break pest and disease cycles and suppress weeds.



5 In Latin America, *Brachiaria*, a grass native to tropical Africa, has dramatically increased livestock productivity. Brazilian farmers have integrated *Brachiaria* in a zero-tillage, direct-seeded maize system that is replacing soybean monocropping.



Save and Grow in practice: maize, rice, wheat describes sustainable cereal farming systems around the world



6 **On South Asia's Indo-Gangetic Plains,** resource-conserving technologies produce high wheat yields while reducing farmers' costs by 20 percent. A shift to conservation agriculture in rice would create positive synergies in the production of both crops.

9 **In Southern Africa,** leguminous trees and shrubs grown with maize provide high-quality, nitrogen-rich residues that increase soil fertility, boost yields and generate new sources of income.



7 **Across the developing world,** pigeon peas, cowpeas, groundnuts, soybeans and jack beans are familiar sights in smallholder farmers' maize fields. They provide food, increase stocks of soil nitrogen and produce



residues that serve as soil surface mulch.

10 **In Central Asia,** zero tillage, soil cover and crop rotation would help many countries to reverse soil erosion and produce more food. Kazakhstan's wheat growers are already well advanced in the transition to full conservation agriculture.



8 **In Asia,** many rice farmers raise fish around paddy fields to produce food, control pests, and fertilize their rice crop. Result: lower costs, higher yields and improved household nutrition.



11 **In South and Southeast Asia,** many rice farmers have switched to growing maize in the dry season, using high-yielding hybrids that reduce water consumption and raise incomes. Close-up: Bangladesh.



The guide outlines the policies, institutions, technologies and capacity-building needed to upscale lessons learned in national and regional programmes for sustainable intensification.

“Presents clearly defined guidelines for sustainable production in developing countries.”

Sanjay Rajaram
World Food Prizewinner, 2014

“Timely and important. Provides excellent examples and makes principles very clear.”

Jules Pretty
University of Essex (UK)



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