



THIS IS THE STORY OF

AGRICULTURE and the GREEN ECONOMY

We need to make the global economy green. Agriculture provides significant opportunities for growth, investment and jobs to help make this happen.



Everyone needs agriculture. Agriculture feeds our entire population and produces fibre for clothing, feed for livestock and bioenergy. Particularly in the developing world, agriculture contributes significantly to GDP growth, leads the way in poverty reduction and accounts for the lion's share of employment opportunities, especially for women. Agriculture also has one of the highest potentials for reducing carbon emissions and helping vulnerable people adapt to climate change.

To see the interactive version of the infographic, visit:

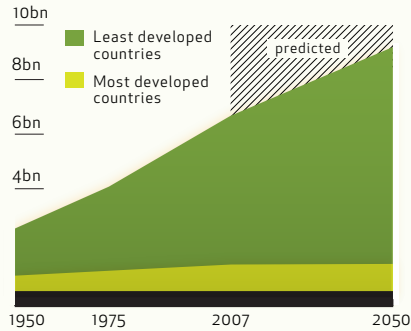
www.farmingfirst.org/green-economy

How can we feed future generations?

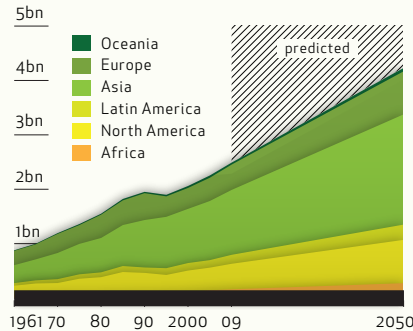
As world population grows, crop production needs to keep up.

To feed a global population of 9 billion by 2050 will require a 70 percent increase in global food production.

WORLD POPULATION Source: UN DESA



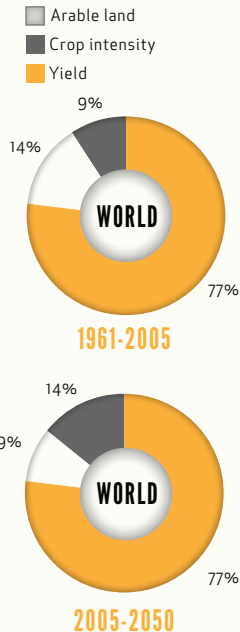
CEREAL CROP PRODUCTION (tonnes) Source: FAOSTAT



Increasing yields is an important way to help protect land.

The World Bank estimates that 1 hectare of land will need to feed 5 people in 2025, whereas in 1960 1 hectare was required to feed only 2 people.

SOURCES OF GROWTH IN CROP PRODUCTION Source: FAO

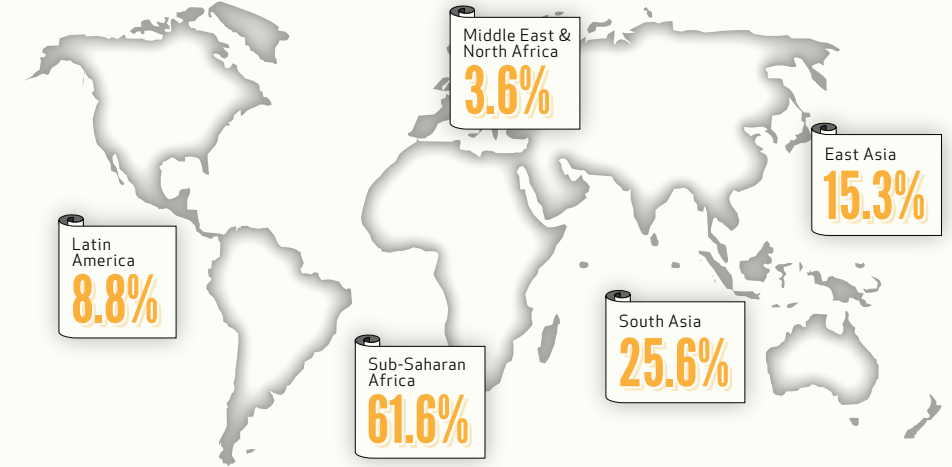


Region	Increase in arable land		Increase in crop intensity		Increase in yield	
	1961-2005	2005-50	1961-2005	2005-50	1961-2005	2005-50
Sub-Saharan Africa	High	Low	High	Low	High	High
Near east/ North africa	Low	Low	High	Low	High	High
Latin America Caribbean	High	Low	Low	Low	High	High
South Asia	Low	Low	High	Low	High	High
East Asia	Low	Low	High	Low	High	High

How can we reduce poverty around the world?

INCIDENCE OF EXTREME RURAL POVERTY (% of rural people living on less than US\$1.25/day) Source: IFAD

Of the 1.4 billion people living in poverty, 1 billion live in rural areas.



1.4bn ⇒ **1.0bn**

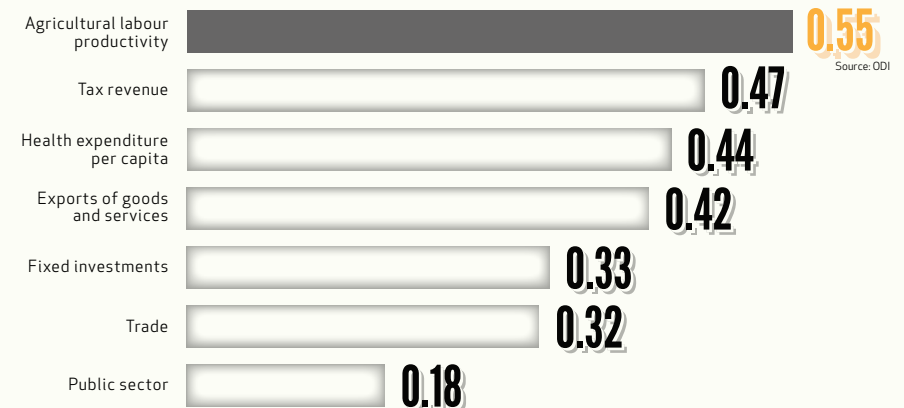
living in poverty

of which live in rural areas

Growth in agriculture is the most powerful force for reducing poverty.

GDP growth from agriculture generates at least twice as much poverty reduction than any other sector.

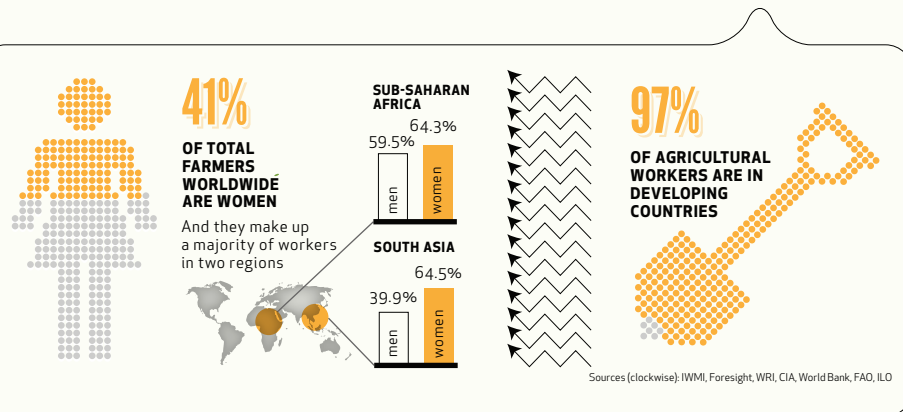
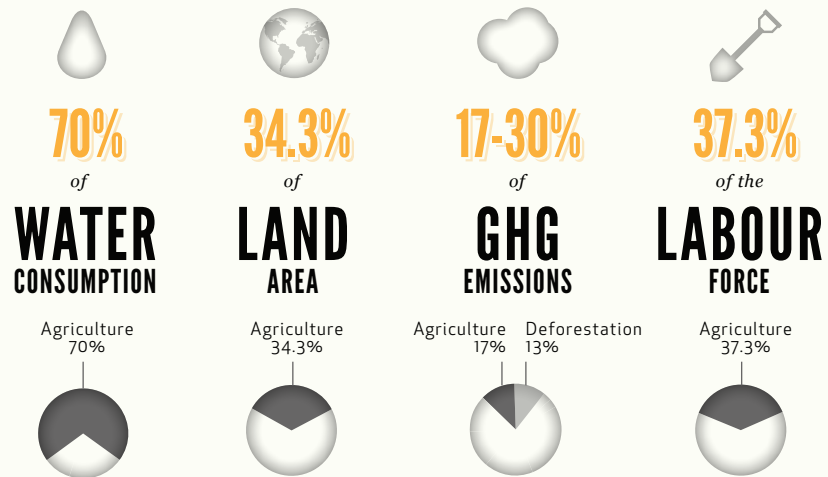
POVERTY REDUCTION POTENTIAL (sectoral growth and correlation with \$1 a day poverty index)



Why does agriculture matter to a green economy?

Worldwide, agriculture accounts for...

We need to create livelihoods in places where these resources are managed, and it is in these areas that people are most vulnerable.

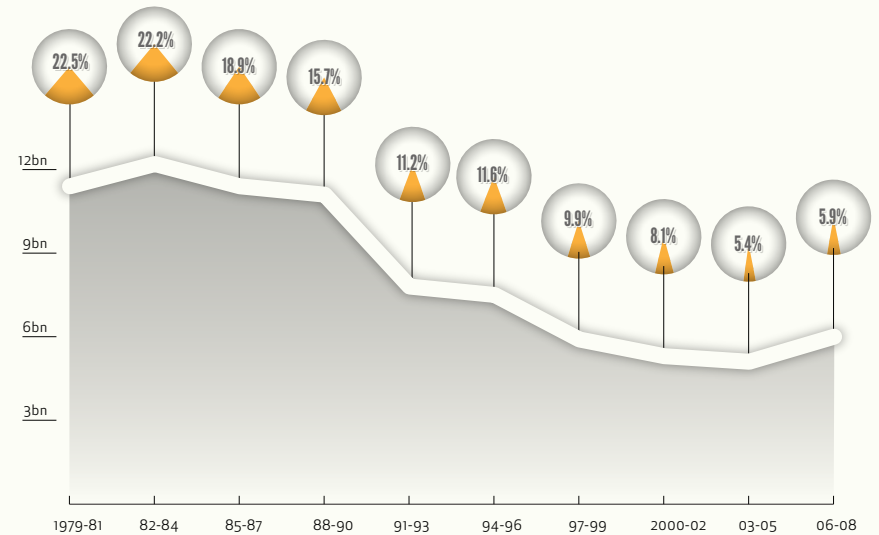


Where do we invest to build a green economy?

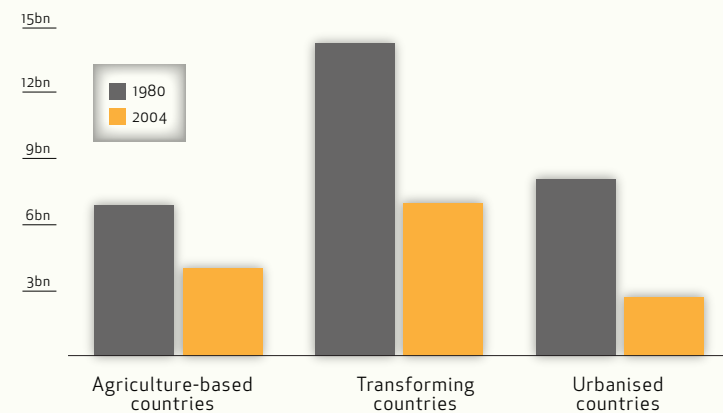
Since 1980, foreign aid and domestic investment in agriculture have fallen.

Public spending allocated to agriculture declined to under 7% in 2000, and the share of ODA to agriculture fell to 5% in 2004.

FOREIGN AID TO AGRICULTURE (constant 2007 \$bn, % of total aid) Source: IFPRI



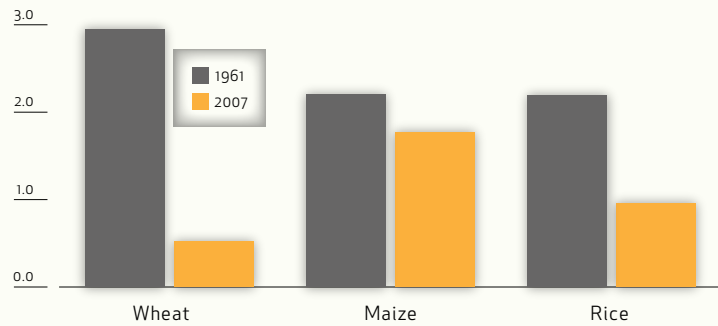
GOVERNMENT SPENDING ON AGRICULTURE 1980-2004 (constant 2007 \$bn by country type) Source: World Bank



Meanwhile the rate of crop yield growth is slowing down.

Grain yield growth in developing countries has fallen from 3% per year between 1961 - 2007 to 1% increase per year today.

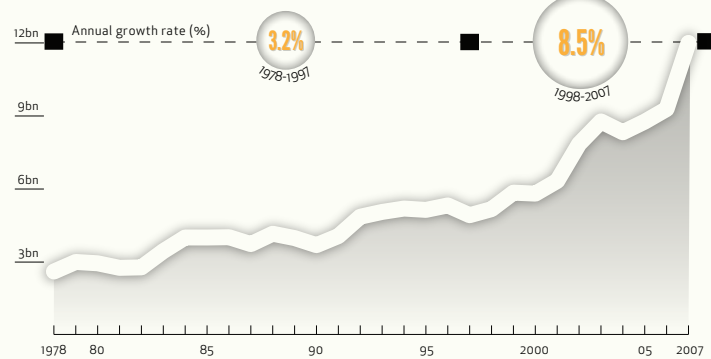
CROP YIELD GROWTH 1961-2007 (%) Source: FAO



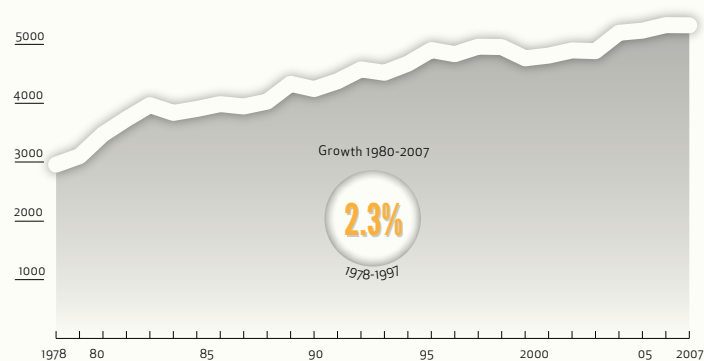
The example of China shows how investments in research can improve crop yields.

For China, aggregate growth originating in agriculture is estimated to have been 3.5 times more effective in reducing poverty than growth outside agriculture.

CHINESE INVESTMENT IN AGRICULTURE R&D (million Yuan) Source: IFPRI



CHINESE CEREAL YIELD (kg per hectare) Source: World Bank

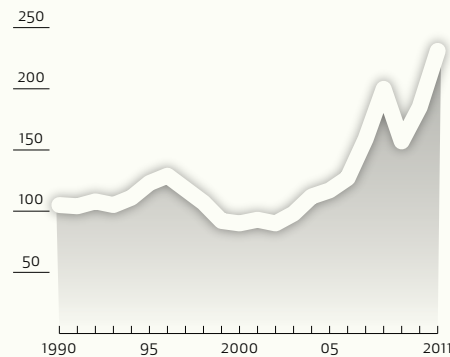


How can we build a more sustainable supply chain?

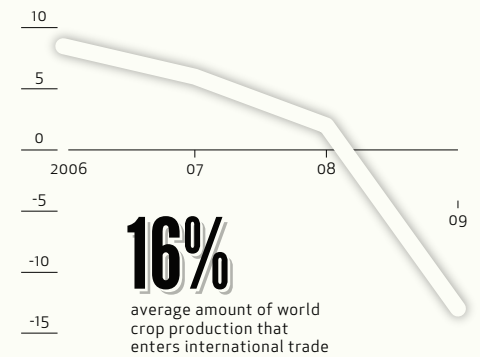
Over the past four years, prices have been volatile. Countries have reacted by reducing exports...

Between 2006 and 2008, international food prices doubled. In 2008, some 40 countries imposed bans or restrictions on exports of food.

FAO FOOD PRICE INDEX Source: FAO



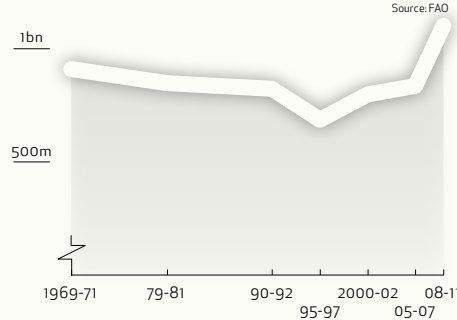
ANNUAL CHANGE IN AG EXPORTS (%) Source: WTO



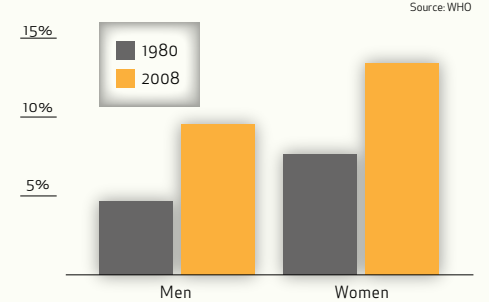
This causes food shortages around the world, while worldwide obesity levels are also increasing.

The 2008 food price spikes pushed about 100 million poor people into the ranks of the world's hungry while the level of obesity worldwide has doubled since the 1980s.

NUMBER OF HUNGRY PEOPLE, WORLDWIDE Source: FAO

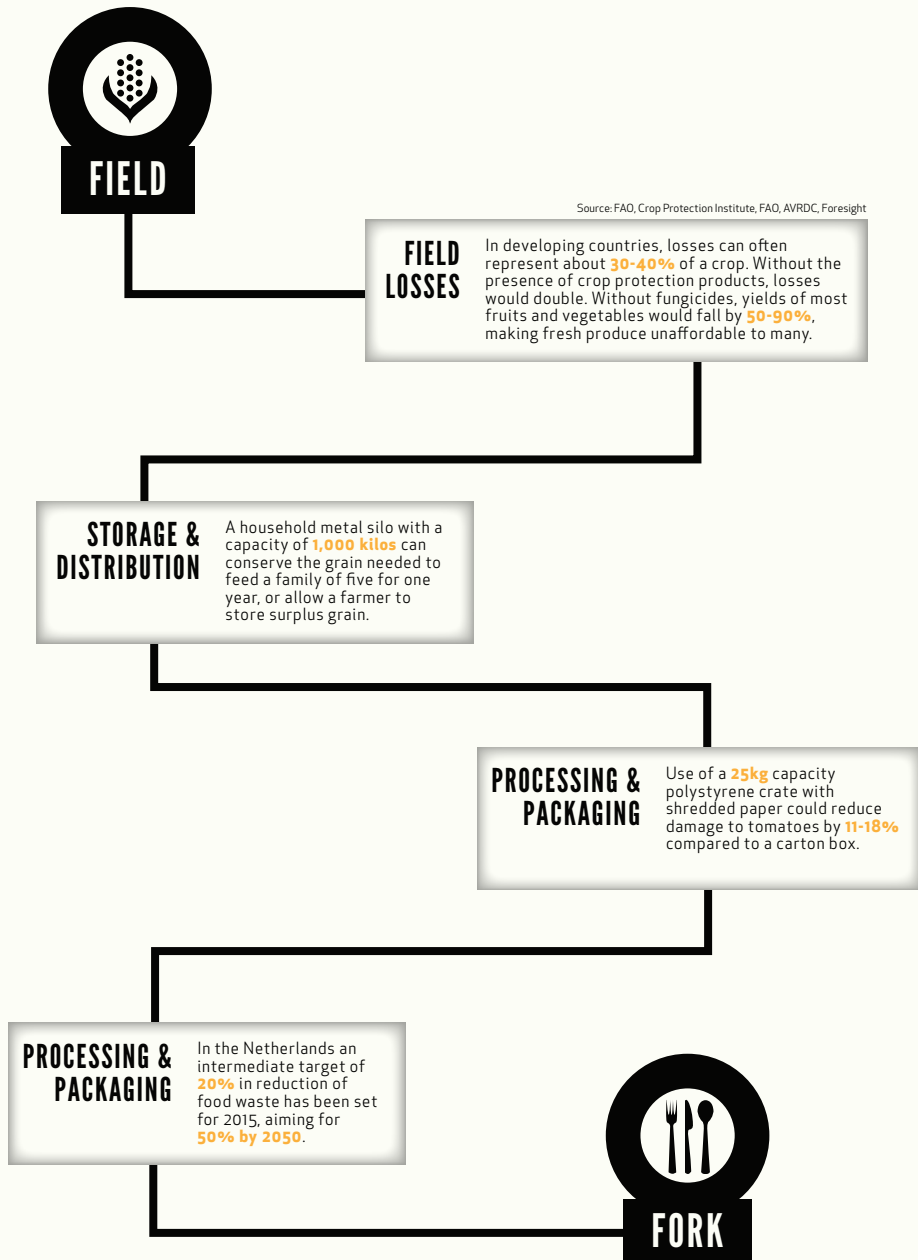


NUMBER OF OBESE PEOPLE, WORLDWIDE Source: WHO



Losses throughout the supply chain result in far too much food never reaching the plate.

It has been estimated that as much as 30% of all food grown worldwide may be lost or wasted before and after it reaches the consumer. Some estimates have placed it as high as 50%.

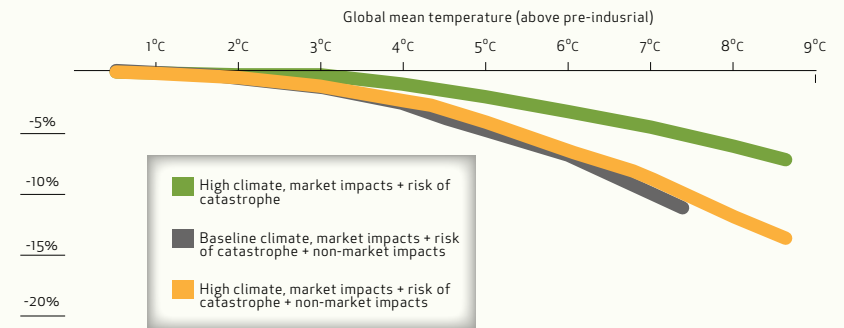


How can we manage environmental sustainability with economic viability?

Climate change threatens our global economy.

Unabated climate change could cost the world at least 5% of GDP each year. Farmers in the least developed countries are amongst the most vulnerable.

MEAN LOSSES IN PER CAPITA GDP (%) FROM CLIMATE CHANGE Source: Stern Report

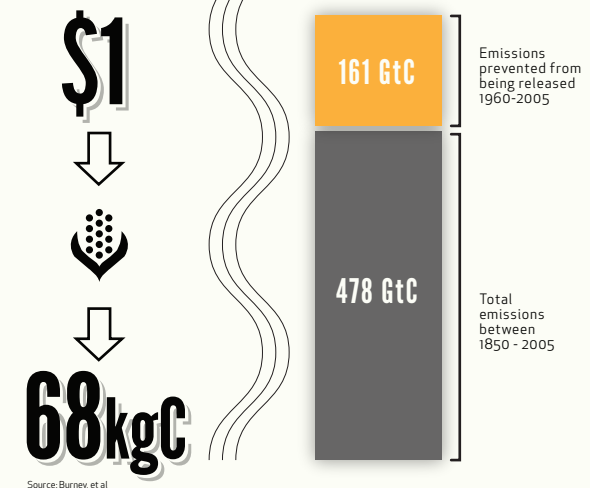


But agriculture has a huge mitigation potential.

Improvements in crop yield since the 1960s have reduced emissions by up to 13 billion tonnes of carbon dioxide a year.

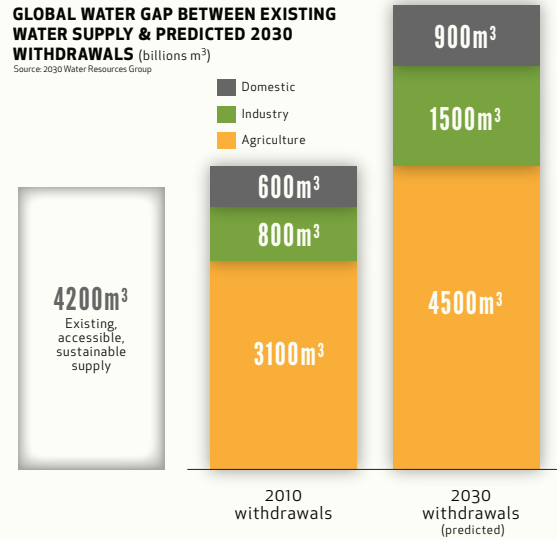
Every dollar invested in agriculture results in 68kgC fewer emissions.

Crop yield improvement has saved 34% of total human carbon emission.



Water is crucial and is probably agriculture's critical limiting factor.

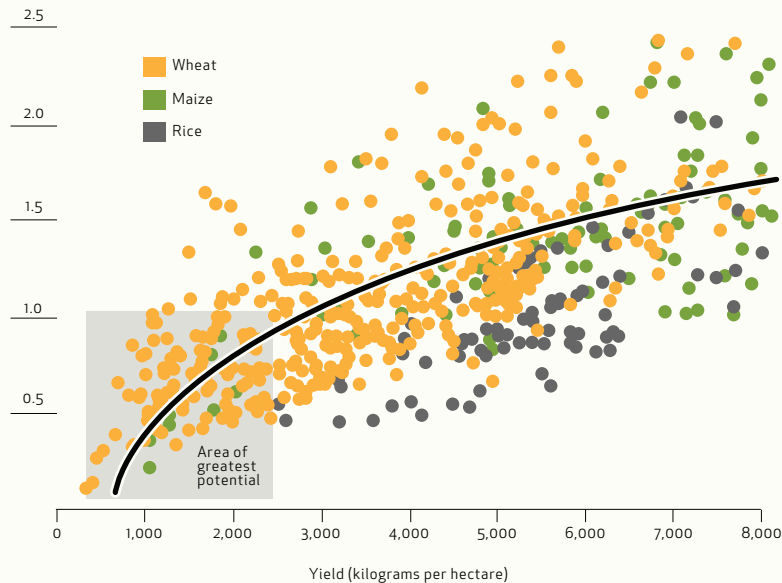
Around 1.2 billion people, or almost one-fifth of the world's population, live in areas of physical scarcity, and 500 million people are approaching this situation.



Improving water productivity in agriculture through increased yields and drip irrigation is key.

In theory, a 1% increase in water productivity in food production makes available an extra 24 litres a day per person.

WATER PRODUCTIVITY PER UNIT OF EVAPOTRANSPIRATION (kg/m³) Source: IWMI



RESULTS FROM INDIA IN SHIFTING FROM CONVENTIONAL TO DRIP IRRIGATION

Source: IWRA

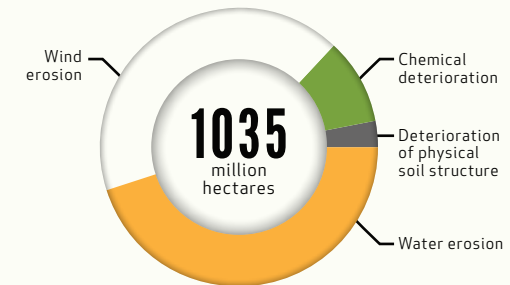
Crop	Change in yield (%)	Change in water use (%)	Water productivity (%)
Banana	+53	-45	+173
Cabbage	+2	-60	+150
Sugarcane	+39	-60	+205
Sweet Potato	+39	-60	+243
Tomato	+50	-39	+145

Large areas of the world's cropland are seriously degraded.

By 2050 an estimated half of current arable land will become unusable due to desertification and land degradation.

HUMAN INDUCED SOIL DEGRADATION

Source: IFAD

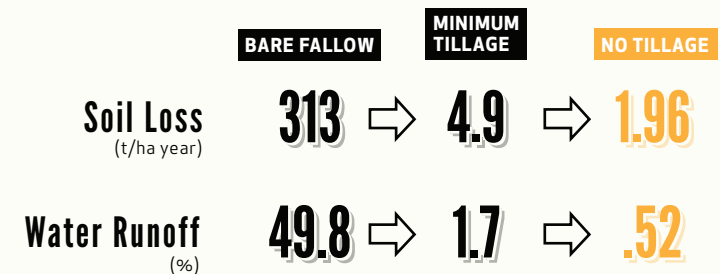


Good agricultural practices can help preserve and protect arable land.

Minimum or no tillage can help reduce soil erosion by 50-98% and also improves soil quality and moisture retention.

CONSERVATION TILLAGE IN GHANA HAS LIMITED SOIL LOSS AND WATER RUNOFF.

Source: FAO



The transition to a green economy is fundamental for addressing the social, environmental, and economic pillars of sustainable development.

As a sector, agriculture is essential to the green economy. With a predicted 9 billion people by 2050, agricultural production will have to increase to meet new demands, for food, feed, fuel and fibre. Agriculture must not only meet demand – it must also do so while minimising its environmental footprint and creating sustainable livelihoods for farmers and others along the supply chain.

In a time of food insecurity and with the largest share of its population in developing countries living in rural areas, the world cannot afford to ignore the potential of agriculture to achieve the triple goals of a secure food supply, poverty reduction through improved rural livelihoods, and environmental sustainability through reduced footprint of production and climate change adaptation.

Agriculture by nature represents a mosaic of solutions and practices, focused on farmer needs and knowledge sharing. Sustainability is a moving target towards which farmers in different geographies and farming systems are already moving and they will need support to continuously improve.

Agriculture in a green economy means a broad-based, knowledge-centred approach to agricultural development. Key to achieving this goal is a focus on:

- Addressing implementation gaps through support for knowledge sharing, and advisory and training services;
- Ensuring agricultural policies are based on science;
- Supporting productivity through innovation and best practices.

The Farming First coalition supports the implementation of the outcomes of CSD17 on agriculture as the basis for any outcome on agriculture for Rio+20.

Recommendations to Policymakers

As global leaders prepare to meet at the Rio+20 (UNCSD) summit in 2012, they should not neglect the central role of agriculture in delivering a green economy and to the role of farmers as drivers of these changes.

Comprehensive solutions are needed for sustainable agriculture, and the Farming First Principles offer a comprehensive view of how this may be achieved. In the context of discussions on the Green Economy, Farming First supporters offer the following recommendations for incorporating agriculture into their agenda focusing on the “green economy in the context of sustainable development and poverty eradication”.

1. Reducing poverty

Make agriculture a driver for poverty reduction by ensuring policies link producers to markets and enable value to be created throughout the supply chain to help create income opportunities and diversify rural activities.

2. Enhancing sustainable productivity

The world will need to produce more with less to meet demand and reduce its environmental footprint. Increasing production and productivity should be a priority to protect habitat.

3. Innovation, Research and Extension Services

Invest in training, knowledge sharing, extension services, as well research and development to close the uptake gap for existing tools and ensure new solutions are available for tomorrow.

Farming First

Farming First is a global coalition representing the world's farmers, scientists, engineers and industry as well as agricultural development organisations. Farming First calls for a broad-based, knowledge-centred approach to increase agricultural output in a sustainable and socially responsible manner.

To view Farming First's position on the green economy, visit: www.farmingfirst.org/green-economy

Web: www.farmingfirst.org

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