



Knowledge grows

# Our Position On

## Land Use Efficiency

### Introduction and background information

One of the biggest global challenges is to produce enough food at lower greenhouse gas (GHG) emission levels. The world population is expected to grow to over 9 billion people by 2050, and food production has to increase by 60 percent<sup>i</sup>.

The single biggest source of GHG emissions from the agricultural sector is land use change, i.e. new land being transformed from natural land into cultivated farmland.

Forests and natural land are considerable carbon sinks where carbon is accumulated and stored in biomass and organic matter. Forests store between two and five times as much carbon as arable land, wetlands even eight times as much – or more<sup>ii</sup>. When trees are cut, uncultivated grassland is turned into farmland, or wetland is drained, CO<sub>2</sub> is released and emitted.

Changes in land use due to agriculture causes as much GHG emissions as the total emissions from the 27 EU countries, or approximately 12% of global GHG emissions. With further expansion of farmland into natural land areas, this percentage would rise considerably.

### Yara International's position

Since cultivating new land has serious negative implications for the environment and biodiversity, efficient use and management of existing arable land is essential to solve the challenges of both food security and climate change.

Yara International believes that the needed increase in food production should be achieved by increasing yield on existing farmland to the extent possible - not by cultivating new land - thereby greatly reducing GHG emissions caused by land use change, and protecting biodiversity.

Sustainable intensification of agriculture will lead to increased yields on existing farmland while minimizing environmental impact per unit of crop produced. This is possible through best farming practices. Examples of such best practices are balanced fertilization, improved nutrient management systems, the use of precision farming technologies, use of improved varieties of seeds and modern irrigation systems.

The potential for increased yield is not only relevant for developing countries. There is significant potential for

yield increase also in the developed countries in Europe and North America, especially through precision farming. Available technology can help to assess the status of crops and to provide precise advice, thereby contributing to minimizing losses while optimizing yields. There is still a gap between yield achieved on farmer's fields and yield achieved in scientific trials using best farming practice.

The greatest potential improvement for crop production per unit of land exists in areas with low productivity such as Sub-Saharan Africa or South Asia. Closing the gap between today's yields and the achievable yields in these areas requires:

- Knowledge transfer: Increase knowledge about best agricultural practices
- Infrastructure: Improve farmers' access to crucial input and access to markets for their output
- Funding: Provide adequate access to financing for smallholder farmers

Yara is a proponent of public-private partnerships to promote infrastructure investments in developing countries, to facilitate knowledge transfer and to improve funding.

# Our Position On - Land Use Efficiency

The issue of climate change and agriculture is also discussed in our position paper “Agriculture and climate”, available on [www.yara.com](http://www.yara.com).

*Bellarby et al. "Cool Farming", Greenpeace Report 2008.*  
[http://aura.abdn.ac.uk/bitstream/2164/2205/1/cool\\_farming\\_full\\_report\\_copy.pdf](http://aura.abdn.ac.uk/bitstream/2164/2205/1/cool_farming_full_report_copy.pdf)  
*"Bellarby et al./ IPCC 4AR*

## About Yara

*Yara's knowledge, products and solutions grow farmers and industrial customers' businesses profitably and responsibly, while nurturing and protecting the earth's resources, food and environment.*

*Our fertilizers, crop nutrition programs and technologies increase yields, improve produce quality, and reduce environmental impact from agricultural practices. Our industrial and environmental solutions reduce emissions and improve air quality from industry and transportation, and serve as key ingredients in the production of a wide range of goods.*

*Founded in 1905 to solve emerging famine in Europe, Yara today has a global presence with more than 12,000 employees and sales to more than 150 countries.*  
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