Organic Agriculture Contributes to Sustainable Food Security

Catherine Ward and Laura Reynolds | January 08, 2013

In 2010, the most recent year for which data are available, organic farming accounted for approximately 0.9 percent of total agricultural land around the world. While this is still a minuscule share, since 1999 the land area farmed organically has expanded more than threefold: 37 million hectares of land are now organically farmed, including land that is in the process of being converted from conventional agricultural practices.

The amount of organically farmed land dropped a tiny bit, by 0.1 percent, between 2009 and 2010. A decline in this land in India and China was almost matched by an increase in Europe. Regions with the largest organic agricultural land in 2010 were Oceania, including Australia, New Zealand, and Pacific Island nations (12.1 million hectares); Europe (10 million hectares); and Latin America (8.4 million hectares).

Organic farming is now established in international standards, and 84 countries had implemented organic regulations by 2010, up from 74 countries in 2009. Definitions vary, but according to the

Figure 1. Organic Agricultural Land by Region, 1999-2010

International Federation of Organic Agriculture Movements, organic agriculture is a production system that relies on ecological processes rather than the use of synthetic inputs, such as chemical fertilizers and pesticides.\(^6\)

The modern organic farming movement emerged in the 1950s and 1960s largely as a reaction to consumer concerns over the use of agrochemicals.\(^7\) The period after World War II and through the 1950s is commonly known as the “golden age of pesticides” because the use of agricultural chemicals was widespread and their effects were largely unknown.\(^8\) As the health and ecological consequences of agrochemicals began to be understood, governments started to regulate their use and consumers started to demand organically certified foods.\(^9\)

While organic agriculture often produces lower yields on land that has recently been farmed conventionally, it can outperform conventional practices—especially in times of drought—when the land has been farmed organically for a longer time.\(^10\) But increased yields alone are not meeting the needs of people around the world.\(^11\) Globally, at least 1 billion people do not have adequate access to sufficient food—due to issues of distribution, individual purchasing power, storage and refrigeration, and market access, among others—with sub-Saharan Africa being the region most affected.\(^12\) Conventional agricultural practices often degrade the environment over both the long and the short term through soil erosion, excessive water extraction, and biodiversity loss.\(^13\)

Organic farming has the potential to contribute to sustainable food production.\(^1\)

\(^{1}\) Source: Willer and Kilcher, *The World of Organic Agriculture 2012*
security by improving nutrition intake and sustaining livelihoods in rural areas, while simultaneously reducing vulnerability to climate change and enhancing biodiversity.\textsuperscript{14} Sustainable agricultural practices associated with organic farming are relatively labor-intensive and have the potential to contribute to long-term employment in rural areas.\textsuperscript{15} Organic agriculture uses up to 50 percent less fossil fuel energy than conventional farming, and common organic practices—including rotating crops, applying mulch to empty fields, and maintaining perennial shrubs and trees on farms—also stabilize soils and improve water retention, thus reducing vulnerability to harsh weather patterns.\textsuperscript{16}

On average, organic farms have 30 percent higher biodiversity, including birds, insects, and plants, than conventional farms do.\textsuperscript{17}

Certifications for organic agriculture are increasingly concentrated in wealthier countries.\textsuperscript{18} From 2009 to 2010, Europe increased its organic agricultural land share by 9 percent to 10 million hectares, the largest regional growth of land in this category.\textsuperscript{19} Despite rapid expansion of certified organic agriculture over the last decade, the United States has lagged behind other countries in adopting these farming methods.\textsuperscript{20} When national sales rather than production are considered, however, the U.S. organic industry is one of the fastest-growing industries in the nation, expanding by 9.5 percent in 2011 to reach $31.5 billion in sales.\textsuperscript{21}

Sustainable food production will become increasingly important in developing countries, as the majority of population growth is concentrated in the world’s poorest countries.\textsuperscript{22} Agriculture in developing countries is often far more labor-intensive than in industrial countries, and therefore it is not surprising that approximately 80 percent of the 1.6 million global organic farmers live in developing countries.\textsuperscript{23} The countries with the most certified organic producers in 2010 were India (400,551 farmers), Uganda (188,625 farmers), and Mexico (128,826 farmers).\textsuperscript{24}

Africa accounts for 3 percent of organic agricultural land in the world, with just over 1 million hectares of certified organic land.\textsuperscript{25} (See Table 1.) Organic farming in Africa is now being recognized as a way to address problems of food insecurity and climate change.\textsuperscript{26} Small plot farming in Zambia, Malawi, Niger, and Burkina Faso has drawn on organic methods to restore soils; this has resulted in higher food crop yields, greater household food security, and increased incomes.\textsuperscript{27} A combination of traditional and organic farming techniques—including water harvesting, composting, and applying mulch to the land—have allowed farmers in Burkina Faso to adapt to climate change and build resilience to weather shocks.\textsuperscript{28} In Ethiopia, organic farming methods have helped farmers use water more efficiently and restore soil health to better withstand harsh weather conditions like drought, while increasing crop yields and improving food security.\textsuperscript{29}
### Table 1. Global Organic Land Distribution by Region, 2010

<table>
<thead>
<tr>
<th>Region</th>
<th>Organic Area (million ha)</th>
<th>Share of Global Organic Land (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>1.07</td>
<td>3</td>
</tr>
<tr>
<td>North America</td>
<td>2.65</td>
<td>7</td>
</tr>
<tr>
<td>Asia</td>
<td>2.78</td>
<td>7</td>
</tr>
<tr>
<td>Latin America</td>
<td>8.39</td>
<td>23</td>
</tr>
<tr>
<td>Europe</td>
<td>10.00</td>
<td>27</td>
</tr>
<tr>
<td>Oceania</td>
<td>12.14</td>
<td>33</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>37.04</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>


Asia has 7 percent of the world’s organic agricultural land, with a total of 2.8 million hectares. Despite a decline in organically farmed land in China and India between 2009 and 2010, India’s export volume of organic produce increased by 20 percent. Small-scale farmers in India, who account for at least 70 percent of the nation’s farming community, are reluctant to engage in organic farming due to problems getting enough organic supplements, lack of access to certification, and limited local market access for organic produce. In Cambodia, on the other hand, negative impacts of conventional farming systems on the environment and on farmers have resulted in widespread conversion to organic agriculture. Health indicators, such as a large reduction in pesticide poisoning–related symptoms, improved among Cambodian farmers who adopted organic techniques.

The global food system will experience greater pressure in the decades ahead to produce more food to meet the demands of a growing population. Increasing food production alone is not sufficient to combat hunger, particularly among small-scale farmers in developing countries. Over 70 percent of the world’s poor live in rural areas and depend directly on agriculture for their income. Small-scale farmers face a number of constraints in adopting organic farming practices—practices that should be integrated with local farmers’ needs and knowledge systems into national frameworks that are supported by government and non-governmental agencies.

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Notes

1 Helga Willer and Lukas Kilcher, eds., The World of Organic Agriculture—Statistics and Emerging Trends 2012 (Bonn, Germany, and Frick, Switzerland: International Federation of Organic Agriculture Movements (IFOAM) and Research Institute of Organic Agriculture, 2012).

2 Ibid.

3 Ibid, p. 25.

4 Ibid.


7 Monk, op. cit. note 5, p. 34.


9 Ibid.


18 Willer and Kilcher, op. cit. note 1, p. 28.

19 Ibid.


24 Ibid., Executive Summary.
25 Ibid., p. 27.
30 Willer and Kilcher, op. cit. note 1, p. 28.
31 Ibid.
34 Ibid., p. 7.
36 IAASTD, op. cit. note 26, p. 2.
37 Pandey and Singh, op. cit. note 32, p. 52.