

# Agroecology

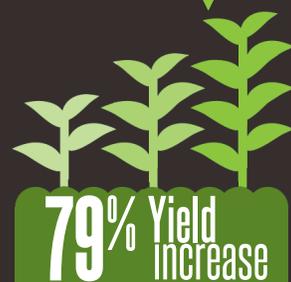
Will Feed the World  
"BUSINESS AS USUAL" WILL NOT.

**EVIDENCE IS MOUNTING:** a widespread global shift in farming away from industrial production models toward agroecology is key to increasing food production and mitigating the effects of climate change.

## IMPROVING YIELDS & FOOD SECURITY

In his 2011 report, the UN Special Rapporteur on the Right to Food showed that a shift toward ecological agriculture could quickly improve yields and reduce hunger. To date, agroecological projects have shown an average **crop yield increase of 79%** in 57 developing countries, and recent projects in 20 African countries showed a doubling of crop yields over a period of 3-10 years.<sup>1</sup>

In developed countries, organic and conventional farming offer similar yields, but in cases of biophysical stress, yields on organic farms are significantly higher. A Pennsylvania study showed **28-34% higher yields on organic farms in drought years.**<sup>2</sup>



When family farms start using sustainable methods, they see crop yields up to 79% higher than those produced by conventional agriculture.<sup>3</sup>

## INCREASING ECONOMIC VIABILITY



A Rodale Institute study showed **average net return for organic systems was \$558/acre/yr** versus \$190/acre/yr for conventional systems, mostly due to lower input costs.<sup>4</sup>

FAO estimates that **spending on purchased inputs would decrease by 40%** if farmers shifted to organic agriculture, as organic farms rely less on external chemical inputs. According to the 2011 Census in Canada alone, \$6.6 billion (CAD) was spent purchasing fertilizers and pesticides in 2011, which represents 15% of all farm expenses.<sup>5</sup>

Lowering input costs is key for farmers as prices for agrochemicals and fuel continue to rise; fertilizer and lime prices jumped 31% from 2010 to 2011.<sup>6</sup>

## BUILDING SOIL HEALTH & REDUCING WATER USE

Organic farming contributes to better soil stability with an average of **30% higher soil organic matter and 14% higher soil organic carbon**, making organic farming more resilient to drought, more resistant to soil erosion, and more efficient at water infiltration.<sup>7</sup>

Organic farming increases water-use efficiency and biodynamic soils can **decrease the need for irrigation between 35% and 50%**, as shown in India.<sup>8</sup>



Surveys done after the landfall of hurricane Mitch in Central America showed that agroecological farms had 20% to 40% more topsoil, less soil erosion, and greater levels of moisture compared to conventional farms.<sup>9</sup>

## MITIGATING THE EFFECTS OF CLIMATE CHANGE



Comparative Analysis of organic and non-organic systems shows carbon sequestration of organic farms is substantially higher than on conventional farms, with the former **sequestering 402 kg Carbon/ha** and the latter actually emitting 202 kg Carbon/ha.<sup>10</sup>

According to the International Fund for Agricultural Development, diversified and indigenous crops are typically **more resilient to extreme weather conditions**, including drought, flooding, and high temperatures resulting from climate change.<sup>11</sup>

Cultivating a wide variety of species of plants is a valuable tool for natural disaster recovery and helps reduce the risk of plant disease.<sup>12</sup>

## SOURCES

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## RECOMMENDATIONS

**Government support for a widespread shift to agroecology and food sovereignty, including:**

Support for agroecological research, ecological extension services as well as farmer to farmer exchanges.

Development of local as well as institutional procurement markets.

Support for policies that facilitate the entry of ecological farmers in agriculture (access to land/ local ecological seeds, etc.)