Yoram Kapulnik

The coming food crisis is here

No one can say with certainty what will happen in the future, but one thing is clear: Food prices will rise globally. Already today there is great fluctuation in the prices of agricultural produce, and local crises, such as the draught last summer in the United States, are destabilizing seasonal prices even further. Researchers believe that the frequency and intensity of these fluctuations will spur an increase in the prices of agricultural and processed foods, and that there is a danger that in the future, they will be beyond the reach of certain populations across the world.

The shortage of water for irrigation, rise in energy prices, climate change and declining soil fertility will all necessitate changes in the worldwide agricultural cycle and production map. The share held by today's producer regions in global agriculture will plummet because of low productivity and a lack of economic feasibility. By contrast, in other regions on the planet it may still be possible to produce food, but the costs of transporting the fresh produce (between regions or continents) will spark higher prices.

From the economic standpoint, it may be "only a question of price." But such a perspective is destructive, and already today we can find regions whose inhabitants cannot afford fresh fruit and vegetables around the year because of their high price. This is a crisis that is growing worse in Israel, as well as around the world.

Israelis should prepare for the crisis now: We live in a small country with limited means of production, and therefore our impact on global food production is negligible. However, the need to provide the country's citizens with food requires continued technological and biological development, and planning now for the next 20 to 30 years. That is not a long time in terms of agricultural research and development.

Long-term planning of this sort must take into account export and import data, proper usage of precious natural resources, and consideration of alternative crops – based not only on our capacity to produce them, but also on their nutritional value and contribution to human health. It is vital to get started as early as possible on this, and the planning should be backed by the state and implemented on a national level.

To prepare for the coming food crisis, agricultural research should be placed at the center of the processes of finding solutions. We must contemplate how to maximize crops' production in a sustainable way, that is, to have minimal damage to natural resources in worsening climate conditions. To these ends we need to invest in and accelerate groundbreaking thinking about automated processes that will lead to greater precision in farming and savings on input, as well as to improved biological processes that will in turn impact crop yield and quality.

The time has come to reconsider the use of genetic engineering, as well. The traditional tools for improving crop varieties against many agronomic threats have been exhausted and are in any case time-consuming. We believe genetic engineering will allow us to make a great leap forward in a short span of time, and that will enable us to feed nine billion people in 2050.

But research alone cannot save the country from the anticipated food crisis. We must enlist the governmental apparatus and the business sector in this process, and bring about changes in local food-consumption patterns. The proportion of food that goes to waste in developed countries comes to more than 30 percent – that is, nearly a third of the food produced ends up in the trash. Increasing awareness about prudent and correct consumption is no less a national mission than finding solutions to increasing agricultural production.

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The children born in 2000, who will be celebrating their bar mitzvahs shortly, do not yet know of the heavy burden they must shoulder. "Nutritional security" is still a vague term. They cannot imagine life in a world that is suffering from a lack of high-quality water sources, that is three to four degrees Celsius hotter than the average temperature today, in which agricultural areas – and the manpower needed to cultivate them – are shrinking. We, as adults and parents, have the responsibility to bring the bad news to their attention.

Thus, beyond the solutions that future generations will have to come up with, there remains the question of dealing with it right now. Governmental help - and perhaps also the assistance of non-governmental organizations – will be needed for allocation of the resources necessary to help solve the local and global food crisis

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