

SCIENCE MAG SPECIAL ISSUE DEALS UNSCIENTIFICALLY WITH FOOD SECURITY

By Wayne Roberts

The best publisher's freebie on the 'Net these days is the February special issue of Science devoted to Food Security. But, as with all things gratis, it rolls out a welcome mat to something else that should raise more questions than gratitude for the free pass.

It's an indicator of the potential of the emerging food movement food to transform the way the Big Questions of life, power and purpose are debated in society-at-large that a mag of the stature of Science would jump into the fray with a freebie for maximum impact. But beware of geeks bearing gifts. What's on offer here is Big Science as world savior, not just scientific methods applied by wide partnerships of alternatively-able people.

Big Science is a relatively late entrant into the food debate that's been raging for at least a decade. Several writers in the special issue as much as admit that food was neglected by mainstream science for half a century. Then came the 2008 crisis brought on by rising food prices, and the subsequent scientific consensus that a rapidly rising world population was heading toward a cliff of rapidly declining land, water and fertility for abundant and low-cost food. Thus the theme for the issue: it's high time for Science to come to the rescue, and show the world how to squeeze more crop from less drop – of water, or whatever other critical resource is in short supply.

Looming scarcity that can only be headed off with the methods of Big Science and the methods that Big Science promotes – precision irrigation, fertilization, seeds (aka Genetic Engineering) and machines, for example – is the subtext of almost every article in the issue. Surprisingly, the issue provides no evidence of scientific debate, normally the companion of any scientific discussion of note. Nor is room provided for science practitioners in the area of medicine, nutrition or public health, a violation of the traditions of open dialogue and multi-disciplinary cooperation that usually lead to scientific innovation.

“We have little time to waste,” says the lead editorial on Feeding the Future. There are “perhaps 40 years to radically transform agriculture, work out how to grow more food without exacerbating environmental problems, and simultaneously cope with climate change.” The time scale is urgent and the scale of Big Changes goes beyond slow and steady adaptations, because “the number of undernourished people already exceeds 1 billion; feeding this many people requires more than incremental changes.” Though the issue mainly “focuses on how to increase the supply of basic staples,” there are articles promoting less meat-intensive diets, and a variety of meat alternatives, such as insects. “As this special issue shows,” the editorial concludes, “science can help to make the choices less unpalatable.”

Hold onto your hats. This is the hardsell language, style and mood-setting of the Axis of Scarcity.

Several articles amount to full-on promo's of next-generation genetic engineering. The Green Revolution of the 1950s featured rice and wheat plants that required more water and fertilizer, neither

of which is still plentiful, says the lead article in the special issue. Present-day GE focuses on a small number of traits, such as ability to withstand heavy doses of a particular pesticide or ability to fend off a particular pest. In the future, we will need multiple combinations of desirable traits, not only in plants but in cloned animals as well. Recognizing that opposition to GE is widespread, especially in Europe and across the Global South, the authors “accept the need for this technology to gain greater public acceptance and trust” and recommend that minds be kept open – not that either that or any article in the special issue identifies seed development strategies that don’t require corporate-control or aggressive technologies that break boundaries of species when mixing and matching genes from multiple plants, animals and microbes.

This and other articles also favor aquaculture, the raising of fish in captivity akin to other domesticated livestock such as sheep and dairy cows.

Like genetic engineering, aquaculture requires Big Bucks for both pure and applied research as well as technology development. That, of course, is the common coin and vested interest of Big Science, which has a hard time identifying low-cost, humble, modest and intelligent improvements that rely on the low-cost and humble efforts of modest people.

I hate to be the one to tell the editors of Science: fixing the food system is not rocket science; indeed, rocket science is the problem, not the solution.

Though the entire special issue assumes that the problem the world faces is inadequate production constrained by limited resources of water, fertilizer and the like, the unexamined reality is that the world is rich in opportunities that can’t be identified or “exploited” from a rocket science perspective.

The lead article notes that 30 to 40 per cent of the food produced in the world is wasted and goes to rot. It also notes that meat-centred diets hoard a third of high-quality grains and oilseeds for livestock, though curiously no mention is made of medical science findings on the health dangers of meat-centred diets, and there is no hint that livestock could well be better raised on a science-free ration for livestock that primitive herders and their modern imitators refer to as grass. Wild grasses, developed in Nature’s laboratories over the millennia, have both nutritional and environmental advantages over domesticated grains, since they’re pre-adapted to survive both drought and pests and to grow on less fertile lands than have to be reserved for grain farms.

Any way you slice it, food distribution is as big a problem as production. Even production issues can be seen from a different vantage point. What if, for example, we applied food waste, which becomes compost and soil conditioner with the application of human skill to natural processes, to North American backyards that are now used to grow grass that requires as much water, fertilizer and fossil fuel as many food crops?

The scarcity problem, centerpiece of the Science special issue, is a problem fabricated by our limited scientific imagination, and not of Nature’s making. The special issue of Science alerts us to the need for a fresh look at a broader horizon, but my feeling is that the kind of science in Science is pretty stale.

