

**The
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A special report on feeding the world Not just calories

People also need the right nutrients

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“PROVIDING the quantity of calories is manageable,” says Joachim von Braun of the University of Bonn. “The big issue is nutrition.” In the past 30 or 40 years diets have improved. There are now proportionately fewer malnourished people in the world than there used to be (though the absolute number is high and rising). Fewer people fail to grow to their proper height and weight because of poor childhood diets. India is a peculiar exception to this rule: for reasons no one understands, Indians of all income levels now eat less food, and of a lower quality, than they used to, and than you would expect.

But although most people get enough calories, they still suffer huge deficiencies, especially in four nutrients: iron, zinc, iodine and vitamin A. Iron deficiency makes over 1.5 billion people anaemic, including half of all women of child-bearing age in poor countries. Lack of vitamin A causes up to half a million children to go blind each year, of whom half die within a year. Zinc deficiency is thought to be responsible for about 400,000 deaths a year.

Such deficiencies have long-term consequences for the whole society. In Tanzania, children whose mothers were given iodine capsules when pregnant stayed at school for four months longer than their siblings born when the mother did not get those capsules. Children suffering from nutrient deficiencies cannot concentrate and have lower scores in tests for cognitive ability. And there seems to be a link between nutrition in childhood and earnings in later life. In Kenya children who were given nutrition-improving deworming pills for two years earned about \$3,000 more over their lifetime than those who got them for only one year. Malnourished boys also do worse in the marriage market.

Drowning in a sea of food

On the face of it, the obesity epidemic in rich countries presents exactly the opposite problem. For the first time in history, more calories do not mean better health. The epidemic is spreading to less well-off places: Mexico has the second-largest share of obese people after America; Guatemala’s obesity rate has quadrupled in 30 years. The overweight are obviously not troubled by a shortage of food. But a large group of people in rich countries does suffer from nutritional deficiencies: the elderly. They need more calcium and vitamins with advancing age, and many do



The fat of the land

not get them. Half of those over 75 in hospital are reckoned to be nutrient-deficient, as are many obese people.

Nutrient deficiency is not easy to cure. In poor countries, vitamin supplements—a common expedient—reach less than half of those who most need them, the rural poor. And programmes to hand out vitamin A supplements in massive doses to reduce child mortality have brought little discernible improvement. Michael Latham of Cornell University, reviewing the history of such handouts, speaks of “the great vitamin-A fiasco”.

Cultural norms are a constant obstacle. Abhijit Banerjee of the Massachusetts Institute of Technology quotes George Orwell’s “Road to Wigan Pier” on the British working class:

The basis of their diet is white bread and margarine, corned beef, sugared tea, and potatoes—an appalling diet. Would it not be better if they spent more money on wholesome things like oranges and wholemeal bread, or if they ... ate their carrots raw? Yes it would, but the point is, no ordinary human being is ever going to do such a thing. The ordinary human being would sooner starve than live on brown bread and raw carrots. And the peculiar evil is this, that the less money you have, the less inclined you feel to spend it on wholesome food. A millionaire may enjoy breakfasting off orange juice and Ryvita biscuits; an unemployed man doesn't.

Better nutrition, in short, is not a matter of handing out diet sheets and expecting everyone to eat happily ever after. Rather, you have to try a range of things: education; supplements; fortifying processed foods with extra vitamins; breeding crops with extra nutrients in them. But the nutrients have to be in things people want to eat. Kraft, an American food manufacturer, made Biskuat, an “energy biscuit” with lots of extra vitamins and minerals, into a bestseller in Indonesia by charging the equivalent of just 5 cents a packet. It also did well in Latin America with Tang, a sweet powdered drink with added nutrients, marketing it to children for the taste and mothers for its nutritional value.

It is also possible to breed plants that contain more nutrients. An organisation called HarvestPlus recently introduced an orange sweet potato, containing more vitamin A than the native sort, in Uganda and Mozambique. It caught on and now commands a 10% price premium over the ordinary white variety. The local population’s vitamin intake has soared.

HarvestPlus has a pipeline of “biofortified” crops: cassava with vitamin A due to be released in Nigeria this year; pearl millet with extra iron and zinc, to be launched in India in 2012; beans with extra iron, also in 2012; rice with zinc, due for release in 2013. But again there are limits: it is hard to breed the full recommended daily dose of nutrients into plants this way.

John Hoddinott of IFPRI says the lesson of previous failures is that you have to select your targets: focus on the main deficiencies and on those for whom you can do most good, especially infants. Feeding the world is not just about calories but nutrients, too; and it is not about scattering them far and wide but pinpointing the groups who can and will eat them.

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