IN brief

Gates pours cash into agriculture

Anantha Vardhan/stock.photo

Gates pledges help for small farmers.

The Bill and Melinda Gates Foundation has announced $120 million in grants to promote sustainable agriculture, a move intended to spur another Green Revolution, this time tailored to the needs of the poorest farmers. The Foundation will support crop research and agricultural projects that increase productivity and food security in low-income countries. The nine new grants announced in October, which will focus on homegrown crops from sub-Saharan Africa and South Asia, include $18 million for developing high-yielding varieties of sorghum and millet, $21 million for developing stress-tolerant sweet potatoes and $19 million to improve nitrogen fixation in legumes, such as soybean and cowpea. "The foundation believes that helping the poorest smallholder farmers grow more and get it to market is the world's single most important lever for reducing hunger and poverty. We're taking a comprehensive approach—from investing in improved seeds to supporting effective farm management practices," says Lawrence Kent, senior program officer for the Gates Foundation's agricultural development initiative. Kent adds that biotech will be used where it has the potential to help farmers confront drought, flooding, disease or pests faster or more effectively than conventional breeding alone does—roughly 5% of the total funds. Seeds developed through foundation-supported research will be licensed royalty-free to seed distributors so that they can be sold to African farmers without extra charge. Although better known for its investments in health, the Gates Foundation has donated over $1.2 billion to agricultural development efforts since 2006 as part of its ongoing global development program, with a third of those funds designated for "science and technology." One of the current grantees is the African Agricultural Technology Foundation (AATF), based in Nairobi, Kenya, which last year launched its $48 million public-private partnership project, water-efficient maize for Africa, to develop new varieties of drought-tolerant maize. Field trials are expected to start next year. St. Louis-based Monsanto, one of the project partners, is providing germplasm produced by conventional breeding, as well as a molecular breeding platform and drought-resistant transgenes. "If we were to start from zero, without any materials that had been bred and focused towards drought, normal plant breeding would take about ten years. Here we are getting materials which are already almost proven," says AATF's executive director, Daniel Mataruka. *Hayley Birch*

African malaria. Fiocruz would like to be a partner in a version that could target the more prevalent plasmodium species causing the disease in Brazil: *Plasmodium vivax*. "Ideally, a vaccine should target both [species]," says Freire

Technology transfer and the use of local expertise in vaccine production is also a focus of the Indian not-for-profit joint venture announced by Wellcome and Merck. As Altaf Lal, MWTHL's CEO, points out, the goal of the new venture is to leverage local skills, not to compete.

Indeed, most local firms are supportive of the venture. Rajesh Jain, joint managing director of Panacea Biotec in New Delhi says, "We do not expect competition as the Hilleman Lab intends to deliver products for diseases where the big pharma companies do not focus." Varaprasad Reddy, managing director of Hyderabad-based vaccine manufacturer Shantha Biotech, recently acquired by Paris-based Sanofi-Aventis (*Nat. Biotechnol.* **27,** 879, 2009), is also upbeat: "We have to applaud their initiative."

Virologist Jacob John of the Christian Medical College in Vellore hopes MWTHL will actually galvanize local vaccine research. "If my reading is correct, they would go for vaccines requiring new technologies. In that case, they will fill gaps rather than duplicate." He says India needs affordable pneumococcal conjugate vaccine and vaccines for dengue, malaria and tuberculosis.

Although India currently produces and exports many vaccines, none was developed within the country, except a version of the recombinant hepatitis B vaccine developed by Shantha, admits Govindarajan Padmanabhan, a biochemistry professor at the Indian Institute of Science in Bangalore. "Indian biotech companies do not usually invest to develop a new vaccine unless success is ensured," says K.N. Vinayak, president of biopharmaceuticals research at Panacea. Once MWTHL develops a vaccine to proof-of-concept stage, the business model is that a local Indian biotech firm will take it forward on the understanding that the vaccine will be sold at an affordable price, he says.

Some, including Sanjay Singh, who left the US National Institutes of Health to head Gennova Biopharmaceuticals in Pune, are skeptical. "India is already producing world-class vaccines at affordable cost and Sanofi's acquisition of Shantha Biotech proves this," he says. It is also unclear to Singh whether the MWTHL will help introduce new technologies into local vaccine firms. Sujay Shetty, associate director of the pharmaceutical and life sciences practice at PriceWaterhouseCoopers in Bangalore, says that Wellcome's presence means that discoveries made in MWTHL will be open source and available to other firms. The MWTHL facilities are slated to open by March 2010 and are expected to attract further corporate partners. Krishna Ella, CEO of Hyderabad-based Bharat Biotech, is also skeptical about inexpensive vaccines but says the joint venture will definitely boost research on vaccines for neglected diseases.

More not-for-profit deals like that of Merck and the Wellcome Trust are likely to be emulated. In fact, Gennova and PATH-Malaria Vaccine Initiative in Bethesda, Maryland, have already created a dedicated facility in Pune to manufacture promising recombinant protein–based malaria vaccines for testing in clinical trials. According to Bhan, the Indian government's Department of Biotechnology in New Delhi is engaged in partnership with the Seattle-based Bill and Melinda Gates Foundation, PATH and others to develop a rotavirus and malaria vaccine. Discussions are also taking place with the New York-based, International AIDS Vaccine Initiative for a joint venture in India.

In the meantime, Indian Department of Biotechnology secretary Maharaj Kishan Bhan remains guardedly optimistic about MWTHL. "We welcome it because its intention is to develop and promote affordable health technology. Only time will tell how successful this venture is, but in our view, the Merck-Wellcome joint venture is a positive step."

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New product approvals

Votrient (pazopanib)	GlaxoSmithKline (London)	The US Food and Drug Administration (FDA) approved Votrient for advanced renal cell carcinoma (RCC). The small-molecule drug is a multi-target tyrosine kinase inhibitor that inhibits VEGFR-1, 2 and 3, PDGGR-alpha and beta, and c-kit.
Arzerra (ofatumumab)	GlaxoSmithKline and Genmab (Copenhagen)	The FDA approved Arzerra for chronic lymphocytic leukemia (CLL) in patients refractory to fludarabine and alemtuzumab. Arzerra is a fully human, high-affinity monoclonal antibody that attaches to the small and large loop epitopes on CD20, found on the surface of B-cells.