What ICRISAT Thinks… about Niger's hunger crisis

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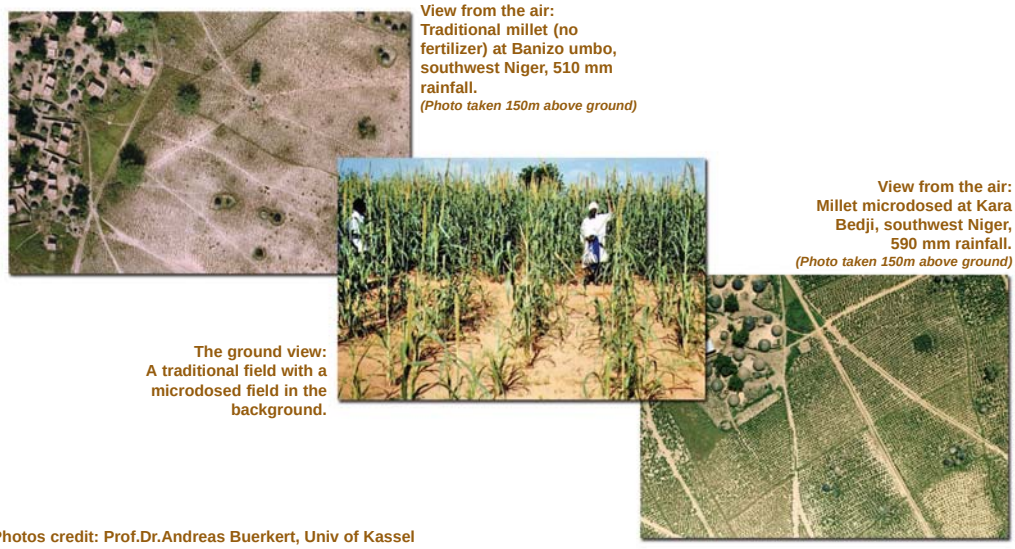
Niger was the focus of the world's attention this year due to the recent famine; who will be next?

The food shortage has been attributed to drought and locusts causing a millet shortfall the previous year. But we have a different take on this.

Our research shows that poor soil fertility, rather than drought, is the major food-production constraint across much of the West African Sahel. When plants are malnourished their poor root systems cannot collect the rainwater that falls. The present crisis in short, is a result of wasting water, rather than a shortage of water.

This situation can be remedied by rectifying the severe P and N deficiency of these soils through tiny doses of fertilizer— just one-sixth or less of the rates used in the developed world — which will allow the plants to capture more water, increasing millet yields by 70% on average.

We call this 'microdosing'— applying small amounts of fertilizer with the seed at planting time, rather than spreading the fertilizer all over the field. Microdosing is affordable to the poor and gives plants a quick start and earlier finish, avoiding end-of-season drought. Ten dollars' worth of fertilizer on one hectare delivers farmers about fifty extra dollars worth of millet.



View from the air: Traditional millet (no fertilizer) at Banizo umbo, southwest Niger, 510 mm rainfall. *(Photo taken 150m above ground)*

The ground view: A traditional field with a microdosed field in the background.

View from the air: Millet microdosed at Kara Bedji, southwest Niger, 590 mm rainfall. *(Photo taken 150m above ground)*

Photos credit: Prof.Dr.Andreas Buerkert, Univ of Kassel

A large majority of rural Nigeriens depend on millet farming for their food security. Increased productivity could have enabled them to feed themselves instead of becoming vulnerable to the soaring prices caused by the shortfall.

So what is holding back the adoption of the system? Four things: access to fertilizer; access to credit; insufficient flows of information and training to farmers; and inadequate policies. We are

working closely with FAO to help farmers form cooperatives, or in French ‘warrantage associations’ to overcome these hurdles.

Warrantage and microdosing have been tested by 5,000 farmers by FAO with good results. Instead of selling grain for low prices, farmers pool their grain after harvest, and are issued cash loans against the collateral of the stored grain. With this they participate in collective fertilizer purchases for the next season. Free or subsidized fertilizer is not given to farmers. As grain prices rise in the months following harvest, the value of farmer’s collateral also rises, enabling them to pay back the loan including interest by selling the grain.The associations also create vital information channels to reach farmers, for example showing them ways to increase the organic matter content of their soils, which is vital for long-term sustainability.

Farmers using warrantage store their grain in village warehouses until prices rise, so they can afford to buy fertilizer.

The food shortfall that caused the Niger famine in 2005 was 11%. If only one-quarter of the country’s farmers had microdosed in 2004, the food deficit would have been erased. It would have cost about US$20 million to get the system established widely across the country — but would have saved donors up to US$80 million in emergency food aid and Nigerien consumers about US$70 million in lower food costs.

In better years, microdosing would create a surplus that could be used to expand strategic reserves (if policy accommodated it), protecting Sahelian countries against severe droughts in future years.

In recent years, USAID assisted ICRISAT to complement FAO’s effort for demonstrating the technique in Burkina Faso, Niger and Mali, raising the total to more than 12,000 farmers reached. And we recently won a competitive grant from CORAF (with funds from the African Development Bank) to continue to disseminate microdosing/warrantage.

The CORAF endorsement is important because it signals support from the region itself, and confirms the strategy’s alignment with NEPAD and FARA priorities. We encourage developed-world investors to build on such regionally-supported priorities to enable us to disseminate microdosing/ warrantage more widely.

Microdosing is a prime example of the huge payoffs that are possible from long-term research investments. Unrestricted core support complemented by supplementary funding from BMZ/GTZ and USAID since the early 1990s enabled us to conduct this research in partnership with Niger, Mali, Burkina Faso, TSBF-CIAT, FAO and the University of Hohenheim (now through the University of Kassel). These investments now place us on the brink of major impact to reduce human suffering.

We believe we now have enough evidence to confidently scale-up microdosing and warrantage across the Sahel. Combined with more supportive policies, this would set Niger and its neighbors on a positive self-development pathway that would finally bring an end to dependency on food aid when drought strikes.

We think it is high time that the world community set aside its despair and resignation about the Sahel, and start implementing a solution that is at hand today.

ICRISAT
Science with a Human Face

About ICRISAT

The International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) is a non-profit, non-political organization that does innovative agricultural research and capacity building for sustainable development with a wide array of partners across the globe. ICRISAT's mission is to help empower 600 million poor people to overcome hunger, poverty and a degraded environment in the dry tropics through better agriculture. ICRISAT belongs to the Alliance of Future Harvest Centers of the Consultative Group on International Agricultural Research (CGIAR).

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