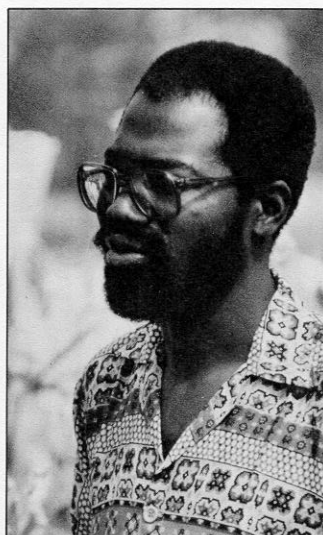


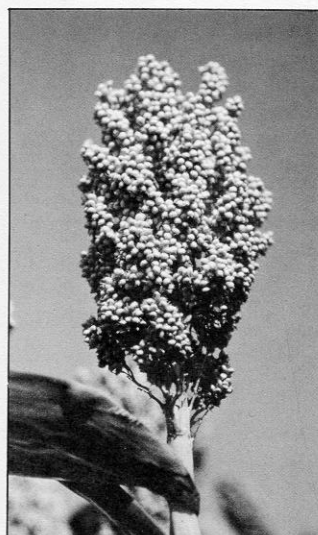
LIVING ON RESULTS

JACQUES DUPONT

The small town of Bambey, 110 kilometres east of Dakar, Senegal, is the site of one of the largest agricultural research institutions in Francophone Africa: the Centre national de recherches agronomiques (CNRA). There, *Reports* met with the director of the sorghum research program, Marcel Galliba, a few months prior to his departure for the United States to pursue doctoral studies at Texas A & M University. With financial support from IDRC, Mr Galliba has been working for approximately 10 years on improvements to sorghum, one of West Africa's staple foods. The aim is to develop new, faster growing varieties characterized by greater resistance to disease and drought.



Marcel Galliba (left), and the object of 10 years of research — sorghum.



a tremendous gap between the objectives and the means available. The ideal would be 100 kilos per hectare, but we cannot hope for that — there is no inexpensive fertilizer to be had. However, even at the unsubsidized price, the new varieties are still highly profitable. Still, not all farmers — few of them, in fact — are able to come up with the large sums required. Credit structures will have to be reformed as well.

The biggest problem faced by African researchers is that they cannot do anything with their discoveries. Despite the great enthusiasm with which these discoveries are greeted, they cannot be taken any further for lack of adequate feedback from the farmers. If a farmer came to me and said "Look, sorghum SBV-4

Reports: What are some of the problems you have tackled in sorghum research?

Galliba: The government plan asked us essentially to increase yields, reduce stem size and, in particular, improve the quality of the grain. The traditional varieties contained an excessive level of polyphenol, commonly known as tannin, which inhibits protein synthesis in humans. We have succeeded in producing new varieties low in polyphenol. We have also developed dry hulling techniques. Previously, manual hulling was done using a pounder and a little water, but the moist flour produced this way does not keep. With dry hulling and grinding, flour can be stored for months.

Reports: How many useful varieties have been developed?

Galliba: Ten. After approximately 10 years, we have developed 10 high-yielding, stable varieties resistant to the occasional droughts we experience. We tested this material here in Bambey, in the Sine-Saloum, and especially in Casamance. These tests enabled us to identify its limitations, as well as the conditions necessary for obtaining optimum yields. For example, we know now when to sow, when to weed, when to thin from six stems down to two or three, and so on — simple, understandable facts that merely

have to be determined and included in the technical notes. All these techniques can be grasped by the average Senegalese farmer, and everyone who has followed the instructions has obtained colossal yields of some 2.7 to 3 tonnes a hectare.

Reports: Do these new varieties require the use of large quantities of fertilizer?

Galliba: They require 100 kilos of fertilizer to the hectare; this costs about 2500 CFA francs (about CA\$11) in the case of subsidized fertilizer. The same amount of nonsubsidized fertilizer costs approximately 10 000 CFA francs (about CA\$45), but even at that price production will still increase by at least 500 kilos per hectare, if not a tonne, and at a market price of 50 CFA francs a kilo for sorghum that means a profit of 25 000 CFA francs (a little over CA\$110) for each hectare in cultivation.

Reports: And is there currently enough subsidized fertilizer for farmers wishing to use it?

Galliba: No. Senegal has 2 000 000 hectares of grain crops, for which 50 000 tonnes of fertilizer have been allotted. This means that only 25 kilos of fertilizer are available per hectare. Although the policy is that agricultural production must be increased, there is

has such and such a problem," I would be able to rack my brains to come up with a solution. As it is, I am forced to rest on my laurels. We already know *how* to improve agricultural life, but we cannot manage actually to *do* it.

I do think, however, that we should take research activities out of the centres and the institutions. Governments should give priority to agricultural development. Give us five years... but give us the tools to do a proper job. We are currently experiencing all kinds of limitations caused by budget cuts. What is needed is for governments to invest in the agricultural sector and in helping the small farmer.

Researchers should also be expected to produce and to produce rapidly. Give me a piece of arable land and I will live on my harvests, for I would then be forced to produce profitable harvests and would be faced in a very real way with the results of my research. Then we would no longer be research teams living and producing answers in isolation, but researchers and scientists forced to produce results and to stake our lives on them. When that happens, perhaps, we shall succeed in bridging this deplorable gap between the research institutions and the farmers. □

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