Would These Programs Be More Cost Effective than Food Aid?

An attempt to answer this question is made primarily from a donor point of view.[13] It is fairly difficult to provide precise estimates for each alternative, so what is provided here are only rough estimates. The historical time period covered in this analysis is 1970-95, for which the data are comparable. The costs of the stocking program option are explored under the assumption that all regional grain stocks would be stored in South Africa, which has excess storage capacity. Data on storage costs were collected from representatives of the South Africa Grain Silo Industry, Ltd., while transportation costs were calculated by estimating the rail or shipping distances and multiplying them by per unit transportation costs published in earlier studies. Based upon this approach and available data, the transportation costs would be nearly twice as much as the storage costs, and the total cost for all SADC countries would be about $1.4 billion for the 1970-95 period. Storage costs can be high when considering new construction costs or the cost of waste and spoilage in inadequate facilities. However, both of these factors are unlikely to be relevant in this case, where there is already excess capacity of modern storage facilities.

For the grain import insurance program, the calculation shows that the insurance program (base case) would have cost about $2.59 billion for all SADC countries during 1970-95 (real 1990 dollars). Depending on the criterion used, a one-time startup fund ranging from $200-$800 million would be needed to keep the pool solvent. Using one criterion (the region's average annual per capita compensation multiplied by initial population), a one-time charge of $580 million would have been needed. This means that the total cost of the insurance program would have been about $3.17 billion. The import insurance program costs could be reduced by using a similar approach with futures prices, such as those now offered in the South African Futures Exchange (SAFEX). Such an approach might be able to take advantage of low international prices with appropriate training on hedging strategies.

To compare the costs of food aid relative to the costs of different options, an assumption is made that food aid volumes would have been replaced by commercial import purchases.[14] Since the majority of cereal food aid is in wheat, we used a weighted world price of wheat (80 percent) and maize (20 percent) to approximate the real price of food aid. The historical volumes of food aid donated to the region in cereals (which is by far the largest component of food aid) are multiplied by this weighted world price. Given these assumptions, food aid expenditures would have totaled about $2.7 billion during 1970-95.

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[14] It is important to note that historical food aid volumes have been donated by several countries and have not been based upon explicit supply stabilization targets such as those of the stocking and import insurance programs considered in this report.

Table 7—Comparison of total costs for different policy options, 1970-95 (base cases)

Country	Food aid	Stocking model	Import insurance model
	Million dollars		
Angola	277	196	0
Botswana	0	7	39
Lesotho	148	16	56
Malawi	291	223	155
Mauritius	0	2	24
Mozambique	1,041	2	42
Namibia	0	2	14
South Africa	0	68	1,366
Swaziland	20	14	31
Tanzania	438	182	184
Zambia	295	119	213
Zimbabwe	192	250	467
Sub-totals	2,702	1,081	2,592
Stock startup	n.a.	330	n.a.
Insurance startup[1]	n.a.	n.a.	580
Total	2,702	1,411	3,172

Note: Data for the import insurance model may be different from those shown in table 5 because of the shorter time period used here.

n.a. = Not applicable.

[1] Many different types of criteria could be used to establish a startup insurance fund. The insurance fund could have survived historically with a bare minimum $200 million. See text for further discussion.
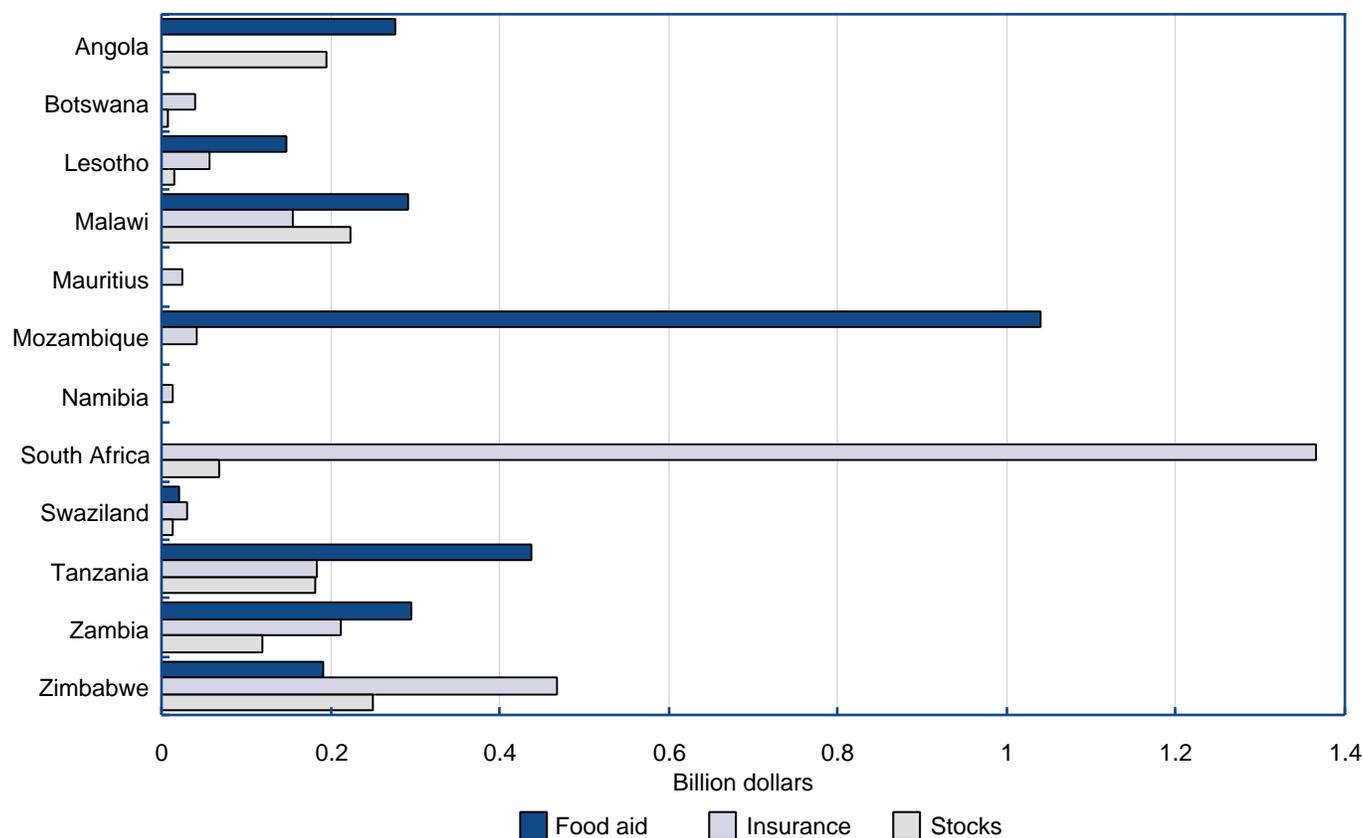
Source: Authors' calculations based on the insurance and stocking models.

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[13] That is, it is assumed that donors would fully pay for the management and operations of all policy options considered. So for instance, with the stocking option, this would include administrative donor overhead costs, silo storage and loading rental costs, and railroad rental costs. Presumably, companies in South Africa charge rates that cover such items as management and depreciation rates.

These results are summarized in table 7 and figure 8. In short, it appears that the stocking program could be less expensive for donors than the costs of food aid as a means of helping the SADC countries achieve stable aggregate food supplies, even if a strong assumption is made that the donors would pay for all of the costs of stocking and insurance. The total cost of the insurance program would vary based on startup costs.

The flip side of the donor cost analysis is examining the benefits for the recipient countries. Currently,

under the status quo situation of food aid, Mozambique has been the largest beneficiary by far ($1.04 billion during 1970-95). Under a different program, such as the insurance option, other countries would benefit, notably South Africa ($1.37 billion compared with no benefits with food aid). However, the overall accumulated benefits to South Africa might be misleading because the results are much different on a per capita basis (Zimbabwe and Swaziland gain more over the same period).

Figure 8
Final cost comparison of three regional policy options, 1970-95

Source: Authors' calculations based on stocking and insurance models.