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Regional Co-operation in the Food Sector Among Developing Countries to Improve Food Security

INTRODUCTION

It is a widely held belief that developing countries should try to make themselves less dependent on trade with industrialised countries. This could be achieved with more import substitution or even autarky. This is rarely recommended, however, especially for the many small developing countries. An alternative could be to increase intra-LDC trade, perhaps through regional co-operation schemes. Actually, this strategy is not at all new. Many regional integration schemes among developing countries were founded in the 1960s and 1970s. But the experience has so far been mostly disappointing. Nevertheless, two new regional schemes have recently been set up in Africa. The Southern African Development Co-ordination Conference, which includes Angola, Botswana, Lesotho, Malawi, Mozambique, Swaziland, Tanzania, Zimbabwe and Zambia, and which came into existence in 1980; and the Preferential Trade Area (PTA), which started with tariff reductions in 1984 and had the following members at that time: Burundi, Comoros, Djibouti, Ethiopia, Kenya, Lesotho, Malawi, Mauritius, Rwanda, Somalia, Swaziland, Uganda, Zambia and Zimbabwe.

The objectives of these new schemes differ somewhat from those of the other schemes. They made food security a special goal. This indicates that regional co-operation might contribute to food security. The potential for improving food security through regional market integration and the institutional and political arrangements that are needed to exploit the potential will be investigated in this paper.

In the following, it is assumed that the objective of integrating the food economy is to improve food security. 'Food security may be defined as the ability of food deficit countries, or regions, or households within these countries, to meet target consumption levels on a year-to-year basis' (Valdes and Siamwalla 1981, p. 2). Consequently, food insecurity may have two facets: real income may be too low to provide target consumption for all groups of the society even in years of normal or above normal domestic production; and real income may fluctuate because of variations in domestic production of food and nonfood products and/or

import and export prices. Integrating the food economy of developing countries could affect both aspects of food security.

Regional co-operation to decrease instability in food consumption can be based on a regional insurance approach. Alternative strategies can include regional stockpiling, balancing fluctuations in supply among integrating countries through intra-regional trade, regional market intelligence units, co-ordination in timing exports and imports in cases where port facilities might be a bottleneck, joint ventures to improve marketing infrastructure, a regional food financing facility system and others. Whether countries should co-operate in all or some of these fields depends on the potential benefits for the region as a whole and for individual countries. The benefits to the whole region do not determine whether the scheme might be viable. Experience with existent schemes has proved that the distributional effects among the member countries is crucial for a scheme's viability (Vaitos 1978). Hence, the benefits for individual countries are very important. The distributional effects of the country's net gain from a specific type of co-operation depend largely on the institutional framework chosen. Hence, it can hardly be generalised what fields of integration are the most promising for specific groups of countries. Therefore, the benefits can only be determined on the basis of thorough theoretical and empirical investigation of specific fields of integration by specific regional groupings of countries.

It is not possible in a short paper to evaluate all integration efforts that might stabilise food consumption. Instead, I prefer to concentrate on one selected fields of cooperation which might be adopted by one group of countries, this is market integration of the Southern African Development Conference (SADCC) countries.

THE POTENTIAL TO IMPROVE FOOD SECURITY THROUGH REGIONAL MARKET INTEGRATION

According to the economic theory of integration, regional market integration can only contribute less to food security than world-wide integration. Hence, countries would be well advised to open their economies even if partner countries do not. But, there might be good reasons to prefer regional integration to world-wide integration.

Policy-makers often renounce policies that are best from a purely economic point of view because of political constraints. A country's pattern of protection can only be explained if the political market for protection is taken into consideration (Pelkmans 1980). The argument for world-wide integration is mainly based on economic reasoning, but the arguments for regional integration are founded on political considerations as well. The political will is likely to be stronger for regional integration than for world-wide integration. Moreover, world-wide integration lowers protection without visibly compensating producers. Regional integration, instead, changes the pattern of protection, helping

some producers and hurting others. It can be hoped that producers will, therefore, be less opposed to regional integration.

If market integration is supposed to improve food security, regional schemes might be preferred to world-wide integration because they might do more to decrease instability in food consumption. It can be presumed that it is easier to co-ordinate the actions to stabilise food consumption taken by a few selected groups of countries than by all countries. International stabilisation schemes have shown that adherence by member countries to agreed rules of member countries is impossible to enforce if the membership is large and that the possibility of gaining as a free-rider weakens the viability and the functioning of an international scheme.

The traditional approach of the economic theory of integration is likely to lead to false conclusions in valuing the integration efforts of some land-locked countries because transport costs have been disregarded. This assumption is crucial for the conclusion that regional integration can only be less advantageous in economic terms than worldwide integration (Wonnacott and Wonnacott 1981).

Summing up, integration of regional markets may be more beneficial than world-wide integration under some conditions. These conditions will be investigated for the integration scheme of the SADCC countries.

Transport costs as a determinant of regional integration benefits

To highlight the significance of transport costs, import and export parity prices are presented for selected locations in the SADCC region in Table 1. It was assumed that countries trade only with overseas markets without having set up a regional integration scheme. The large difference in prices indicates, first, that a policy of autarky in staple foods is likely to be a reasonable policy if no trade with neighbouring countries is allowed; second, that price ratios of staple prices may differ considerably from country to country; and third, that fluctuations in domestic production are more likely to lead to changes in national carry-over stocks than to changes in trade flows.

The region's and national countries' food balance sheet as a determinant of regional integration benefits

We can presume that the potential for intra-regional trade is greater if the region as a whole is self-sufficient in staple foods, but individual countries are not. Market integration would help to substitute intra-regional trade for inter-regional trade providing higher export prices for exporting countries and/or lower import prices for importing countries.

Table 2 presents the food balance sheet of the region. The region would have been almost self-sufficient in grain equivalents in 1980 if production had equalled the average of 1979–81. Of course, this outcome is not just a mirror of the region's production potential and consumer needs. It is certainly also a consequence of the prices and price ratios set by the governments of individual countries. A different set of producer

Table 1 Import and Export Parity Prices for Maize, Sorghum, and Wheat for Selected Locations in the SADCC Region ($/ton)

	Maize		Sorghum		Wheat	
	Import Parity Price	Export Parity Price	Import Parity Price	Export Parity Price	Import Parity Price	Export Parity Price
			(1977/78)			
Maun, Botswana	203	6	196	−1	220	23
Maseru, Lesotho	160	49	153	42	177	66
Rumphi, Malawi	222	−12	215	−19	239	4
Lichinga, Mozambique	189	20	182	13	206	37
Manzini, Swaziland	132	77	125	70	149	94
Tabora, Tanzania	153	56	146	49	170	73
Lusaka, Zambia	187	22	180	15	204	39
Ndola, Zambia	198	11	191	4	215	28
Harare, Zimbabwe	147	62	140	55	164	79
Bulawayo, Zimbabwe	159	50	152	43	176	67
			(1983/84)			
Maun, Botswana	270	39	255	24	277	46
Maseru, Lesotho	227	82	212	67	234	89
Rumphi, Malawi	289	20	274	5	296	27
Lichinga, Mozambique	256	53	241	38	263	60
Manzini, Swaziland	199	110	184	95	206	117
Tabora, Tanzania	220	89	205	74	227	96
Lusaka, Zambia	254	55	239	40	261	62
Ndola, Zambia	265	44	250	29	272	51
Harare, Zimbabwe	214	95	199	80	221	102
Bulawayo, Zimbabwe	226	83	211	68	233	90

Source: Author's calculations based on data for transport costs from Southern African Development Conference, 'Regional Food Security', *op. cit.* It has been assumed that shipments will be made by train whenever there is a railway connection.

and consumer prices could change the amounts as well as the pattern of production and consumption. However, the figures indicate that the region might be able to produce enough staple food to feed its population. This is quite important for the trade potential created by integrating the markets of these countries, which would promote trade within the region.

In investigating the potential benefits of market integration, it is reasonable to consider the region as nearly a closed economy. Thus, integration would result mostly in trade creation and less in trade diversion, as Viner defines these terms. More trade would be created: (a) the more the food balance of individual countries is unbalanced, either for total staple foods or for individual staples; (b) the more a country's consumption pattern might change due to the creation of intra-regional trade; and (c) the more the region's products differ in quality from the inter-regional traded goods.

Table 2 Food Production/Consumption Balance for the Aggregate of the SADCC Countries[a]

	Wheat	Rice	Maize	Millet and Sorghum	Cassava	Total
	(1000 metric tons of grain equivalent)					
Apparent Consumption	605.1	302.0	4,471.3	908.6	2,314.0	8,601.0
Consumption Pattern (%)	7.0	3.5	52.0	10.6	26.9	100.0
Production	200.6	269.4	4,845.1	870.3	2,400.8	8,586.2
Balance	−404.5	− 32.6	373.8	− 38.3	86.8	− 14.8
Degree of Self-Sufficiency (%)	33.0	89.0	108.0	96.0	104.0	99.8

Note: [a] Production average 1979–81; Consumption 1980.
Source: Author's calculations based on data from Southern Africa Development Coordination Conference. Regional Food Security. Regional Food Reserve. Annex 1 Country Profiles. Prepared by technosynthesis. Harare, May 1983.

Table 3 reveals that there are actually only two of the nine SADCC countries which do not produce a surplus of at least one staple food. The imbalance of an individual country producing a single product would increase if free trade were allowed among the member countries. This presumption is supported by evidence that people in countries that do not produce specific staples, such as rice and cassava, do not include them in the diet.

The potential for growth in intra-regional trade is higher when countries that produce surpluses of some staples are bordered by countries with deficits in the same staples. Table 4 shows that there were five such countries. Thus there is a potential for trade among the SADCC countries with the present production and consumption patterns. If free trade within the region can lead to a change in the prices and availability of specific products, such as cassava, production and consumption in individual countries can adjust and, thus, increase the potential for intra-regional trade in staple foods.

Liberalisation of trade of maize within the region would be of special importance. Consumers in the SADCC countries prefer white maize to yellow maize. Therefore, more of the former is produced. But because international trade is mostly in yellow maize, the markets for white maize in Africa are thin. Thus, prices will fluctuate significantly as production fluctuates or markets will be in disequilibrium if governments set prices. Such situations would be more likely if individual countries chose not to trade in staples or if they only traded outside the region and not with each other. Intra-regional trade would not only help stabilise national maize markets, but it would also allow savings in transport costs. Moreover, exporting countries could capture some of the premium for white maize, which is only paid on African markets and not on international markets. This premium accounts for about 10 per cent of the price for yellow maize (World Bank 1981).

Table 3 Self-Sufficiency Ratio for Staple Food and Consumption Pattern for SADCC Countries

	Wheat		Rice		Maize		Millet and Sorghum		Cassava		Total	
	1	2	1	2	1	2	1	2	1	2	1	2
Angola	6.2	11.0	34.9	3.6	66.6	31.5	56.9	5.9	102.7	48.0	75.6	100
Botswana	3.2	13.0	—	—	7.6	47.5	56.4	39.5	—	—	26.3	100
Lesotho	23.0	34.7	—	—	78.3	47.5	116.7	17.8	—	—	65.6	100
Malawi	2.4	1.7	128.4	1.9	104.3	90.8	220.0	4.0	518.8	1.6	114.3	100
Mozambique	1.6	6.8	49.8	4.8	50.5	25.9	58.7	13.2	83.1	49.3	64.3	100
Swaziland	180.0	0.8	260.0	1.4	46.1	95.9	107.7	1.9	—	—	51.3	100
Tanzania	48.2	4.6	126.1	6.5	156.6	40.1	137.8	8.7	110.2	40.1	129.4	100
Zambia	6.7	11.3	25.0	1.0	84.7	73.3	96.4	8.1	208.3	6.3	84.0	100
Zimbabwe	167.2	5.0	2.5	0.6	132.5	76.0	80.9	18.4	—	—	124.0	100

Notes: $1 = \frac{\text{Average production in grain equivalent from 1979 to 1981}}{\text{Apparent consumption 1980}} \times 100$

2 = Consumption pattern in percentages of the year 1980

Source: Author's calculations based on data from Southern African Development Coordination Conference, *op. cit.*

Table 4 Surplus and Deficit in Staple Foods of Bordering Countries in the SADCC Region, 1980[a]

Country	Surplus Staple Foods	Border Countries	Deficit Staple Foods
Angola	Cassava	Zambia	Wheat, Rice, Maize, Millet, Sorghum
Malawi	Rice, Maize, Sorghum, Millet, Cassava	Mozambique	Wheat, Rice, Maize, Millet, Sorghum, Cassava
		Tanzania	Wheat
		Zambia	Wheat, Rice, Maize, Sorghum, Millet
Swaziland	Wheat, Rice, Millet, Sorghum	Mozambique	Wheat, Rice, Maize, Millet, Sorghum, Cassava
Tanzania	Rice, Maize, Millet, Sorghum, Cassava	Malawi	Wheat
		Zambia	Wheat, Rice, Maize, Sorghum, Millet
		Mozambique	Wheat, Rice, Maize, Millet, Sorghum, Cassava
Zambia	Cassava	Angola	Wheat, Rice, Maize, Millet, Sorghum
		Botswana	Wheat, Rice[b], Maize, Millet, Sorghum, Cassava[b]
		Malawi	Wheat
		Mozambique	Wheat, Rice, Maize, Millet, Sorghum, Cassava
		Tanzania	Wheat
		Zimbabwe	Rice, Millet, Sorghum, Cassava[b]
Zimbabwe	Wheat, Maize	Botswana	Wheat, Rice,[b] Maize, Millet, Sorghum, Cassava[b]
		Mozambique	Wheat, Rice, Maize, Millet, Sorghum, Cassava
		Zambia	Wheat, Rice, Maize, Millet, Sorghum

Notes: [a] Production: Average 1979–81. Consumption: 1980
[b] Negligible consumption so far.
Source: See Table 3.

The following calculation gives an idea of how large the savings in transport costs could be if SADCC countries traded among themselves rather than with overseas countries.

Assume that Zambia's production in staple foods in 1980 was equal to the 1979–81 average. If consumption was normal in 1980, Zambia would have needed to import 96,000 metric tons of maize. Hence, Zambia could have bought all her maize imports and 46,400 metric tons of wheat from Zimbabwe. Assuming that import and export parity prices were the prices in Lusaka and Bulawayo in 1977–8, Zambia would have had to pay US $187 for maize and US $204 for wheat imported from overseas or US $88.56 for maize and US $95.56 for wheat imported from Zimbabwe. Hence, buying from Zimbabwe instead of buying from overseas markets would have saved US $108.44 per ton of Zambia's imports. Total savings which could have been divided between Zambia and Zimbabwe would have amounted to US $15,441,856 (US $5,031,616 for wheat-trading and US $10,410,240 for maize trading without taking into account the premium for white maize). Certainly this is not a neglible amount. Zambia's Agricultural Domestic Product in 1965 prices was equal to US $179.5 million at the 1981 exchange rate.[2] Hence, trading maize and wheat between Zambia and Zimbabwe would have led to savings in transport costs equal to 8.6 per cent of Zambia's Agricultural Domestic Product. Of course, these calculations do not show the potential gain exactly. Some of the gain may have already been captured through trade within the region. Nevertheless, they highlight the comparative advantage that trade within the region has.

Savings in transport cost will not only materialise if one country produces a surplus of a specific commodity and the neighbouring country generates a deficit. They will also materialise if the production and consumption of parts of countries are not in balance and trade is allowed across the border. Thus, it might well be that a country with a deficit in maize in one year becomes an exporter because parts of country produce surpluses of maize that could be exported to parts of a neighbouring country with deficits. This indicates that trade which flows between the countries taking part in an integration scheme would be different without a scheme.

Liberalized intra-regional trade leads to a greater reduction in transport costs in one country if production in regions of the country fluctuates with non-positive covariances of the fluctuations on neighbouring regions of another country. Subregions near the border are normally remote from the central domestic market. Hence, a fluctuation in production will either lead to significant price fluctuations in these regions or will require that additional resources be allocated to transportation. If, however, these border regions are allowed to trade with regions on the other side of the border, the transportation costs incurred would be smaller. They will be smaller the more there are negative or zero covariances between the fluctuations in production of regions on both sides of the border. Correlation coefficients were

calculated for projected fluctuations of cereal production between 27 neighbouring zones separated from each other by national borders.[3] Some of these coefficients were negative, indicating that the covariances were negative, and in only one case were not statistically significant, indicating that the fluctuations were statistically independent. Hence, free border trade could help compensate for fluctuations in production between these regions.

Regional market integration and savings in resource costs

The economic theory of market integration deals mainly with the question of whether integration can improve factor allocation and so increase production with a given endowment of resources. It has been concluded that resource costs may be saved through regional market integration if the integrating countries have different comparative advantages, and if integration creates more trade than it diverts. Trade diversion, however, can probably be ruled out for the SADCC countries because import and export parity prices differ greatly, and because the region is nearly self-sufficient in staple foods. That leaves only differences in the comparative advantages of the countries of the region in the production of individual staples to be investigated.

Two indicators of such differences are the differences in the countries' production patterns and in the degree to which they are self-sufficient in individual staples (see Table 3). These are 'revealed comparative advantages'.

Another indicator is the size of the domestic resource costs (DRCs) for individual crops. Unfortunately, DRCs are not available for production of individual staples in all SADCC countries. However, an illustrative calculation will be presented using the DRCs to quantify possible gains from an adjustment of the country's production pattern in accordance with comparative advantage.[4] Assume that incentives to Zambia's farmers were given to expand wheat production, and that if wheat production were increased, the increase in maize production would be reduced. Assume further that the change in the production pattern would be compensated by corresponding changes in imports from Zimbabwe. Yields for maize were 2.14 metric tons per hectare, and for wheat 3.99 metric tons per hectare in 1978–80. Hence, increasing the area sown with wheat by 1 hectare and decreasing the area under maize by 1 hectare would lead to savings in DRC equal to $2.94 \times 2.14 \times Pm + 0.6 \times 3.99 \times Pw$, where Pm and Pw stand for the import parity prices of maize and wheat for imports from Zimbabwe. Taking into account the parity prices for Zimbabwe's exports to overseas markets and adding the transport costs from Zimbabwe (Bulawayo) to Zambia (Lusaka), Zambia's import parity prices for intra-regional trade in 1983–4 were US $111.56 per metric ton for maize, and US $118.56 per metric ton for wheat. Total savings in DRC would be US $985.72 per hectare. This clearly indicates that an adjustment in the domestic production pattern in

accordance with comparative advantage can give a high return. Of course, the size of the gain depends on how large the differences between the comparative advantages of the SADCC countries are. One may wonder whether there can be much of a division of labour in agricultural production among these countries. One might argue that these countries are located in the same geographical region and, hence, conditions for agricultural production are the same all over the region. But differences in comparative advantage will arise from variances in climate, variances in soil conditions, and variances in opportunity costs, and these do vary among the SADCC countries.

Specialisation on the basis of comparative advantage will generate even more benefits if the consumption pattern changes significantly over time. An increase in the demand for livestock products and poultry is a case in point. As pork and poultry production is only marginally tied to land endowment, prices for inputs and the final products are most important for choosing where to produce. Experience in developed countries has shown that transportation costs are more important in determining the regional price pattern of feedstuffs than of pork and poultry. Hence, industries tend to be located where feed prices are the lowest. Therefore, integration of the markets of the SADCC countries could reduce the costs of the expanding livestock sector in the region.

Other positive effects on allocation can be expected in food processing. In addition to savings on transportation costs like those for livestock, costs could be reduced through economies of scale. Food processing industries in developing countries rarely use their full production capacity because the domestic markets are so small. Market integration among the SADCC countries might increase the size of the market available to the industries, allowing them to use their resources more efficiently. Significant benefits might arise because the demand for processed food will probably grow. Similar economies of scale effects might be available in the production of agricultural inputs, such as fertilizer and farm machinery.

Savings in administrative costs have been completely neglected by the economic theory of integration. If small landlocked countries have agricultural markets and price policies, and if their domestic prices differ from those of neighbouring countries, incentives for smuggling are built in. This illegal border trade can only be avoided if all border transactions are efficiently controlled. This would absorb a high amount of man-power, which could be used more efficiently to produce goods and services. Moreover, border trade, where legal or illegal, increases welfare in the exporting region because the increase in market prices that results increases the producer surplus more than it decreases the consumer surplus. It also increases welfare in the importing regions, whether changes in consumer surplus surpass changes in producer surplus. Thus, liberalising intra-regional trade can have a twofold, positive effect on welfare.

INSTITUTIONAL ARRANGEMENTS TO CAPTURE MARKET INTEGRATION BENEFITS

Removal of the barriers to intra-regional trade is certainly necessary if all the potential benefits of market integration are to be captured. However, reducing or abolishing these barriers is not enough to guarantee that potential gains will be exploited. An adjustment in the internal and external agricultural trade regime and in exchange rate policies are also necessary. It will be argued that a mere removal of trade barriers might reduce the welfare of some countries if the necessary complementary adjustments in policies are not made. Hence, if countries are not willing or are not able because of political constraints to adjust in the domestic trade regimes and exchange rate policies, they might be well advised to postpone complete market integration. Instead, they might prefer less complete regional trade arrangements to exploit at least some of the benefits of complete market integration.

It should be obvious that integrated markets can only function adequately if trade in agricultural products within the countries is ruled by market forces. Pan-territorial prices and uniform seasonal prices set by the governments of the SADCC countries are obstacles to optimal resource allocation and to international trade.

Pan-territorial prices are political prices enforced by individual governments. They do not reflect a country's comparative advantage. It is hard to find empirical evidence to support the allegation that these prices are set in relation to costs of production (FAO 1984). If free-trading countries were to set different pan-territorial prices, the domestic trade regimes would collapse. Trade would flow from the country with lower prices to the country with higher prices, and this flow might have no basis in the comparative advantages of the two countries. The consequences would be that the country with low prices could not enforce these prices and the country with higher pan-territorial prices would have to build-up government stocks. Neither consequence is acceptable from either a political or an economic point of view.

Harmonising pan-territorial prices among the integrating countries is no solution. Common pan-territorial prices would partly avoid policy-induced trade flows. They would not, however, allow the countries to specialise in accordance with comparative advantage. Resources can be allocated optimally only if prices between countries that trade with each other differ by transportation costs. Transportation costs are important in determining supply prices within the SADCC countries. Hence, prices among the SADCC countries should vary significantly if resources are to be allocated optimally.

Market integration among the SADCC countries not only necessitates liberalisation of domestic price and market policies, it also demands that external trade in agricultural products be harmonised. If integrating countries had different external trade restrictions, trade flows within the region might be distorted. Countries with lower tariffs might import from

countries outside the region and sell the imported quantities profitably to other countries in the integration scheme. This would make the higher tariff in the partner countries redundant. But even if the integrating countries agree on common external trade restrictions, the viability of the integration scheme might be weakened. Assume that the difference between import and export parity prices is negligible and that countries agree to set a uniform external tariff. Also assume that production in some countries surpasses domestic consumption, and other countries need to import. The importing country, which could buy its imports at world market prices if it did not join the integration scheme, would have to buy at higher prices from a country also in the integration scheme. Thus, real income would be transferred to the exporting countries from the importing countries. Such invisible transfer flows will always arise if the integrating countries put restrictions on international trade. This problem could be solved easily for the SADCC countries. The borders with neighbouring African countries not in the SADCC would have to be controlled anyway, and since the SADCC region is nearly self-sufficient in staple foods, border trade with African non-member countries might be excluded. Staple foods would only be traded with overseas countries in exceptional cases if the region experienced a bad harvest for which a release of stocks would not compensate. Liberalisation of overseas trade should therefore be considered.

Another obstacle to liberalising trade within the region, exchange rate policies, is much more difficult to overcome. The currency of most developing countries is overvalued, but the extent is hard to quantify. If one could assume that in 1970 the exchange market was in equilibrium for all SADCC countries, the overvaluation of purchasing power for the average 1978–80 period was 1.42 in Tanzania, 1.24 in Zambia, 1.15 in Malawi, and 1.11 in Zimbabwe (FAO 1984). If these countries were to liberalise trade and were to accept the currencies of other SADCC countries in exchange for products, significant amounts of real income would be transferred. For example, Tanzania had to pay 23.5 per cent less for its imports from neighbouring Malawi and received 23.5 per cent more for its exports to Malawi because of the overvaluation from 1970 to 1978–80. Clearly, Malawi would lose and Tanzania would benefit from border trade if each country accepted the other's currency in exchange for products. This problem of weak currencies cannot be solved only by asking for a clearing of the imbalance in trade in hard currencies.[5] Transfer effects are generated, even if trade in national currencies is balanced. In general, countries with stronger currencies are penalised to the benefit of countries with weak currencies. This problem can only be overcome if monetary and exchange rate policies are harmonised. It does not seem likely, however, that countries would be willing to give up an important element of their autonomous national policies. A solution could be to use international prices denominated in US dollars. But, this would not allow for the capture of all the potential benefits from integration as it demands a strict control of all border transactions.

Moreover, partner countries would have to be willing to agree on international prices to be used in intra-regional trade.

To conclude, at least a transitory period is needed, during which the conditions necessary for a complete liberalisation of trade among the SADCC countries would be provided. It might be advisable for the countries to start with a more modest goal. This is actually the strategy which the SADCC countries follow. Even if it is assumed that countries are not willing to liberalise trade within their borders, intra-regional trade can nevertheless be promoted. Countries could at least inform each other about the situation in their domestic markets and they could arrange for trade within the region to be conducted on the basis of international prices.

CONCLUSIONS

Regional market integration would be preferable to world-wide integration as a means of improving food security if specific conditions hold true. However, an exploitation of market integration benefits demands an adequate political and institutional framework. If countries are not willing or able to provide the necessary framework, official trading arrangements should be set up in order to capture some of the market integration benefits. In addition, they could co-operate without significantly impairing their autonomy through the creation of regional insurance schemes such as regional stockpiling, regional food facility systems and others.

NOTES

[1]Actually, the classified stages do not differ only in the degree of discrimination, as has been assumed. They differ as well in their degree of positive policy integration. See Pelkmans, Jacques, op. cit.

[2]This is a five-year moving average. Source: World Bank, Zambia, *Policy Options and Strategies for Agricultural Growth*, Report no. 4764–2A, June 1984, p. 82.

[3]Technosynthesis projected production of cereals in individual zones for the period 1985–94 on the basis of time series for past production.

[4]The size of DRCs depends, of course, on the assumed world market prices. As the World Bank team assumed export and import parity prices for trade with overseas markets, the DRCs are probably underestimated for Zambia's import products, as are maize and wheat.

[5]The Preferential Trade Agreement among the Eastern and Southern African countries asks for a clearing of the imbalances in hard currencies.

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