CHALLENGES AND ROLES FOR AGRICULTURE IN THE SOUTHERN AFRICAN REGION

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The Southern African Region is facing formidable economic challenges on issues such as poverty reduction, food security, employment creation, increased farm productivity, the sustainable use of natural resources, land reform and human capital development. To meet these challenges it is argued in this article that the agricultural sector should perform a essential role in the generation of rural incomes, employment and food security and also to transfer resources efficiently to other sectors of the regional economy. However, this sector is not fully utilized yet in the different countries of the region. The nature of this role will also differ between countries.

UITDAGINGS EN ROLLE VIR DIE LANDBOU IN DIE SUIDER-AFRIKAANSE STREEK

Suider Afrika staar enorme ekonomiese uitdagings in die gesig. Dit sluit sake soos armoede verligting, voedselsekerheid, werkskepping, verhoogde produktiwiteit, volhoubare benutting van natuurlike hulpbronne, grondhervorming en menslike kapitaalontwikkeling in. Ten einde hierdie uitdagings te hanteer, word daar in die artikel voorgestel dat die landbousektor in die streek 'n belangrike rol te speel het in die verhoging van inkomste in landelike gebiede, die skep van werksgeleenthede, voedselsekerheid en ook om by te dra tot die ekonomiese ontwikkeling in ander ekonomiese sektore. Die aard van die bydrae van die sektor sal egter verskil tussen lande. Die sektor word ook steeds nie ten volle benut in die onderskeie lande van die streek nie.

1. INTRODUCTION

The challenges for the food, agriculture and natural resources sectors of Africa have been the focus of some major recent initiatives: the 2020 Vision of the International Food Policy Research Institute (IFPRI) produced a statement on the trends, challenges and critical choices for agriculture in the Sub Sahara African region; the Global Coalition for Africa (1994) drafted a strategy for agricultural development which highlighted the importance to allocate higher budgetary support (at least 20%) to finance sustained agricultural growth of at least 4% annually; in September, 1995 the African Development Bank facilitated a workshop on agricultural transformation in Africa. The United Nations Economic Commission for Africa also supported initiatives to structure agriculture's role in economic development and food security through a major

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conference in Addis Abeba in April 1997. In the Southern African region (SAR[1]) the Food, Agriculture and Natural Resources (FANR) sectors of the Southern African Development Community (SADC) debated challenges during a regional workshop in November 1996 in Harare. In response a major initiative was launched by the SADC Food Security Administration Unit (FSAU) during 1996/97 to establish a strategic framework for agricultural development and food policy in the region. All SADC members participated in a recent (March, 1997) high level policy analysis conference in Harare to discuss this framework. This article is partly based on work conducted by the author to support these latter two gatherings. In addition to these initiatives, issues related to agriculture in the region, have been discussed at many other important work sessions where governments, international agencies, academics and professionals participated. In all these initiatives the role of agriculture was found to be vital for economic growth and food security. A large volume of documents has recorded these various discussions and research findings. (See for example Goldman and Block, 1993; Spencer, 1995; Seckler, 1993; Csaki, *et al.*, 1992; AfDB, 1993; Deng, *et al.*, 1995; Rukuni, 1995; World Bank, 1990; Vink, 1992; USAID, 1995; the Conference of the International Association of Agricultural Economists in Harare, 1994; UNDP/UNECA, 1997 to list a few).

This article will attempt to establish a framework for agriculturaldevelopment policies and strategies in the region. It firstly contextualise agriculture in Southern Africa. Secondly, some major economic challenges to be met by economic development will secondly be discussed. Thirdly, the potential roles of the various agricultural sectors in the region will thirdly be described with some conclusions on the goals for agriculture in the region.

2. THE SOUTHERN AFRICA AGRICULTURAL ENVIRONMENT TODAY

An estimated 140,2 million people live in the SAR. The majority of these people reside in rural areas (Table 1). In most of the countries of the region rural people are poor, the resource base is relatively poor or under developed and climatic conditions relatively unstable (AfDB, 1993). On average GDP per capita has fallen 0,8% per year in real terms for Sub-Sahara countries, which include SADC. While some countries such as Botswana showed some improvement, the majority recorded a negative growth rate (World Development Indicators, 1997).

In the past, state intervention in agriculture in virtually all of the countries in the Southern African Region largely favoured large scale commercial farmers and has resulted in dualistic (developed/underdeveloped) and bimodal production systems. In addition to these domestic policy similarities, there has also been a

TABLE 1: SELECTED INDICATORS IN SOUTHERN AFRICA

Country	Population facing food insecurity[1] 1980-82		Rural population as% of total		Agriculture's share in labour		Share in agricultural value added in GDP		Growth production (1980-89) (agriculture) GDP	
	(millions)	(%)	1980	1994	% in 1993	% change 1970-1993	% in 1993	% change (1976-93)	(%)	(%)
Angola	-	-	-	-	69	- 8,7	8,8	0,6	-	-
Botswana	-	-	85	70	61,5	-24,0	27,9	-22,0	- 4,0	11,3
Lesotho	-	-	87	78	78	-11,9	64,6	-53,6	- 0,8	3,7
Malawi	1	24	91	87	73,3	-17,2	34,8	- 5,19	2,2	2,7
Mozambique	6	49	87	67	81,0	- 5,4	57,2	2,2	0,7	-1,4
South Africa	-	-	52	50	10,5[2]	- 5,9[3]	5,1	- 3,0	2,7	1,5
Swaziland	-	-	-	-	64,6	-16	11,2	- 9,4	Na	Na
Tanzania	7	35	85	76	79,8	-10,6	53,0	- 3,8	4,2	2,6
Zambia	3	48	60	57	68,0	- 8,6	14,0	2,3	4,1	0,8
Zimbabwe	-	-	78	69	67,2	-10,1	14,8	- 2,2	2,9	2,7
Namibia	-	-	77	64	86,4	±35,14	10,3	- 5,9	-	-

Sources: Revised from Rukuni, 1995; Abstract of Agricultural Statistics, South Africa; Deng, *et al.*, 1995. Human Development Report, 1996

Notes: "-" means "not available"

1) Food security is defined as access to enough food for an active and healthy life, standards of the WHO is taken into account
2) 1991
3) 1980-1991

range of regional political influences that have impacted negatively on farming and regional trade in farm products. Civil wars contributed to reduce the capacity of agriculture to perform its usual functions in an efficient manner. The share of agricultural value added in GDP is furthermore decreasing for all the SAR states except Namibia and Zambia (Table 1).

Five features will be explored in this section in an attempt to contextualise the current status of and challenges for agriculture in the region, *viz.* rural poverty and food security; the natural resource base; agricultural productivity; current agricultural trade and initiatives towards regional agricultural co-operation. The position of agriculture in the economic structure and transformation of different countries will be explored as a sixth issue in the next section of this article.

2.1 Rural poverty: food insecurity and the lack of rural employment

Despite rapid urbanization, especially in South Africa, the bulk of the Southern African population still resides in rural areas (Table 1) with the majority living below the poverty line (Table 2).

TABLE 2: RURAL POVERTY INDICATORS FOR SOUTHERN AFRICA

	Food security index (1988)	Integrated poverty index (1988)	Basic needs index (mid-1980s)	Relative welfare index	Women's status index (mid-1980s)	% Rural population below poverty line (1988)
Angola	0,740	0,596	0,400	0,419	0,501	65
Botswana	0,609	0,434	0,655	0,581	0,529	55
Lesotho	0,811	0,497	0,602	0,549	0,492	55
Malawi	0,988	0,827	0,456	0,359	0,484	90
Mozambique	0,581	0,657	0,321	0,347	-	65
Swaziland	0,955	0,444	0,589	0,586	0,572	50
Tanzania	0,947	0,592	0,604	0,526	0,617	60
Zambia	0,761	0,791	0,667	0,454	0,425	80
Zimbabwe	0,696	0,543	0,610	0,534	0,645	60

Source: Quoted in Cele, *et al.*, 1994

According to the Food Security Index (quoted in Cele, *et al.*, 1994) Mozambique is the 6th most food insecure country in the world, while Lesotho, Malawi, Swaziland and Tanzania rank only as medium food secure countries. Botswana, which ranks highly as an example of economic success amongst developing countries, was the 7th most food insecure country in 1988.

The Integrated Poverty Index includes variables such as the percentage of rural population below the poverty line, GNP growth rate and life expectancy at birth. Severe poverty is measured as an index of more than 0,4. All the countries of Southern Africa clearly display severe rural poverty. The Basic Needs Index takes conventional indicators as applied to the rural population into account. An index of smaller than 0,5 reflects a rural population that is very needy, and one of between 0,5 and 0,75 a moderately needy population. By this measure, the rural people of Angola, Malawi and Mozambique are very needy. The Relative Welfare Index measures the arithmetic average of the first three indices, ranging from zero to one. The Women's Status Index includes indicators such as maternal mortality rates, female adult literacy rates, etc. All these indicators, clearly indicates the desperately poor status in the region.

The problem of poverty and low rural employment in the region is intensified by the observation that the share of agriculture in total labour is decreasing with the exception of Namibia (Table 1). A particular problem (especially for South Africa with its many cities) in this context is the present informal influx of people from rural to urban areas where increased poverty and unemployment creates a fertile climate for violence, crime and health problems, while the rural environment are loosing productive and economic active groups.

In the SAR per capita food output has fallen by nearly 2% per year over the past decade and a half. Yet the demand for cereals in the region is forecast to rise from 27 million tonnes in 1989 to about 70 million tonnes in 2025! At least a substantial contribution will have to be met through local production systems. Urbanization trends indicate that urban demand will rise from 9 million to 34 million tonnes over this period. This increase will have to be almost fully met through marketing systems.

A regional approach to the problems of food security, poverty and employment is therefore clearly and urgently required.

2.2 The fragile resource base of the region

The Southern African region falls largely within sub-humid and semi-arid agro-ecological zones although most agro ecological zones are present in the region (Deng *et al.*, 1995). The two major properties determining the natural resource base and physical agricultural production potential of the region are the greatly variable and extremes of rainfall, from below 200 mm to 1500 mm and varying soil type with cultivable areas often only 25% or less of national surface areas (AfDB, 1993). Much of the best soils in the region fall in the higher rainfall zone stretching from central Angola across Zambia into northern Mozambique and

southern Tanzania. However, the locality of physical infrastructure - roads, electricity, water systems and markets - are not correlated with these high potential areas.

It has been observed that fallow periods have dropped drastically in the region. Cleaver and Schreiber (1994) estimated that 664 000 ha is deforested on an annual basis in SADC countries. This calculation is supported by the observations of Harrison (1987). Almost half of the land area of the region is cultivated without the supplement of organic inputs to compensate for low soil fertility and fragile structure. The extent of soil degradation is showed in Table 3 (AfDB 1993; Abalu, 1997; Cleaver and Schreiber, 1994) Unless the complex soils of the region are managed properly, inter alia through intensification programmes aimed at building-up or to replenish soil nutrients through fertilization programmes, the region's natural potential will not be exploited in a sustainable manner but could rapidly decline.

TABLE 3: EXTENT OF SOIL DEGRADATION IN THE SOUTHERN AFRICAN REGION[1]

Total productive drylands		Productive dryland types					
		Rangelands		Rainfed croplands		Irrigated lands	
Area (million ha)	Per cent degraded (%)	Area (million ha)	Per cent degraded (%)	Area (million ha)	Percent degraded (%)	Area (million ha)	Per cent degraded (%)
304	80	250	80	52	80	2	30

Source: Adapted from Abalu, 1997

1) For the 1980's.

The economic recovery of countries such as Angola and Mozambique could provide a major opportunity for area expansion effects on high quality soils, although the scientific management of these complex soils will still be required. Any major production in these countries is however highly unlikely in the next 10 years due to the current state of their economies, weak institutions and lack of infrastructure to bring these lands in production.

Despite under utilized resources in the region area expansion *per sé* should clearly not be viewed as a major and relative inexpensive source of growth in agricultural output. A more complex strategy, including infrastructure provision, market development, institutional development and agro-support systems, the replenishment of lost soil properties, and land intensification programmes through fertilization, water and soil management and

technological innovation at farm level is required to increase farm production across a broad base in the region.

2.3 Agriculture in the region

The agricultural sector represents a major economic activity in most countries in the region. Two aspects are discussed in this section:

(i) Productivity in Southern African agriculture

The sources of agricultural growth and productivity can be found in area expansion, changes in the crop mix and increased output per hectare through technological innovation. In an analysis Goldman and Brock (1993) estimated that the average annual growth of agricultural output between 1963 and 1988 varied substantially in the sub-Saharan region (East Africa = 3.4% per annum; West Africa = 2.3 % per annum; and Southern African = 1.9% per annum. South Africa was excluded). The sources of growth were on average calculated as 75% from area expansion and changed crop mix and 25% through productivity and technological innovation effects. The highest productivity was recorded in Eastern Africa (55% of total growth) with a negative contribution from Southern Africa (-7%).

The results of a total factor productivity analyses (TFP), measured as growth in output not accounted for by the growth in input is shown in Figure 1. The negative position of Southern Africa *vis-à-vis* Eastern Africa and Sub-Saharan Africa is again clearly indicated although an encouraging trend is currently emerging in SAR.

In South Africa TFP increased marginally for the period 1947-1991 (1,5% per annum). The impact of inter alia market related policies (interest rates, exchange rates, and a movement away from administrated producer price schemes) introduced since the mid 80's and the more productive application of especially mechanization inputs, resulted in a dramatic improvement of 2.9% for the period 1981-1991. This increase was largely achieved within the horticultural and grain sectors. (Thirtle, Sartorius von Bach and Van Zyl, 1993).

(ii) Agricultural trade and marketing

Trading of agriculture commodities from and to South Africa is relatively concentrated (except for tobacco, fruit and nuts). This mean that most trade in the region is directed between South Africa and individual countries in the region. Furthermore, trading activities (both import and export) for the same

commodity take place in the region with regard to oilseeds, livestock, fruit and nuts, fruit, grain and sugar. Commodities, imported by South Africa from the region, show a preference towards Malawian and Zimbabwean tobacco. South African dairy products on the other hand are preferred by Mozambique, Malawi and Angola, meat from South Africa in preferred by Mozambique, vegetables by Mozambique and Angola and grains and sugar by Mozambique (Van Rooyen, *et al.*, 1996).

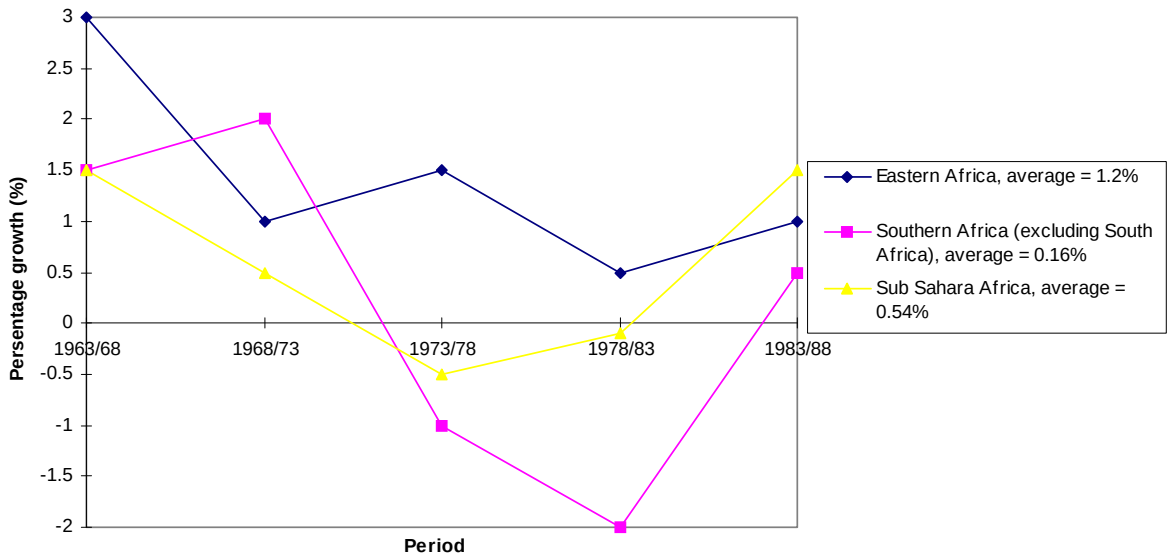

Figure 1. Total factor productivity growth rates per region

Officially recorded grain trade and consumption and production data implies that the region is still showing trends towards grain "self-sufficiency", i.e. producing for own consumption. This can largely be attributed to the fact that comparative advantages are not yet exploited, and effective trade liberalisation has not yet taken place. National policies still favour local self sufficiency as a major criterion in food security. Strategic grain reserves are still viewed as important programmes. These programmes were however generally found to be costly and ineffective in achieving food security. It is interesting to note that data recorded by the USAID project on the measurement of informal trade indicate substantial flows of food and grain products across borders (Sartorius von Bach and Van Rooyen, 1995). The self sufficiency nature of grain policies could therefore be over stated by official data and informal markets should be strengthened to allow cost effective food trade systems to be established.

Future food demand will require a dramatic improvement in marketing and trade of cerials in the region. However trade policies are not harmonized and trade transaction costs are still high in the region (Sartorius von Bach and Van Rooyen, 1995; Nuppenau, 1994).

2.4 The status of regional co-operation

To contextualise regional agricultural co-operation in Southern Africa, it is important to identify events of the past which have had an important bearing on the region. Three statements are important here (Van Rooyen & Vink, 1992): firstly, the present economic dispensation in the Southern African region is largely still the outcome of political and military power games rather than economic logic. One example is the economically illogical spatial lay-out of the railway network and the impact it has had on the prevailing trade patterns. The Southern African Development Co-ordination Conference (SADCC) was motivated by political efforts to diminish the region's dependence on South Africa's transportation network, with military destabilisation responses by South Africa.

Not withstanding this particular legacy it can secondly be argued that the present economic interdependency of the region is influenced by and based on economic considerations. The fact that co-operation and trade occur, despite the region's history, and policies, provide an encouraging basis for expansion and closer future co-operation.

Thirdly, the countries of Southern Africa would have to make a scenario assessment of whether the interaction with the rest of the world should rather be conducted via a coordinated set of institutions within the region, or left to bilateral and individualistic attempts by states on their own. It must however be realised that outside pressure groups through the various forms of regional co-operation agreements (NAFTA, the European Union, etc) could exploit an un-coordinated Southern African Region especially during food insecure periods.

One important conclusion that can be drawn from the above arguments is that regional comparative advantages have hardly been exploited as yet. What are the chances then that a future economic dispensation in the region will be based on economic logic to exploit comparative advantage positions? In line with the recent events in South and Southern Africa, economically motivated agreements and transportation and infrastructure investment are increasingly proposed as major strategies towards increased economic co-operation and development of the region. Examples are the evolving trade agreement within the objectives of the SADC Trade Protocol, the framework created by the SADC Water Resources Sharing Protocol, the development of the Maputo Corridor (construction in the Maputo harbour, building of bridges on the Maputo-Komati line), and the development of Caborrabassa and the Lesotho Highlands Water Schemes. A wide scope exists for co-operation in the fields of agriculture research, training,

seed multiplication and certification, disease combat, etc. The co-operation between member states during the previous drought (1992/93) with the transportation of food can be quoted as a positive case study of such an emerging co-operation scenario (FAO, 1996).

3. ECONOMIC CHALLENGES IN SOUTHERN AFRICA

The above section outlined the environment in which the agricultural sector must seek to perform in the region. In this section some major economic challenges which are important in Southern Africa and which should have a major impact on future agriculture policies and performances are discussed.

3.1 To significantly reduce the number of absolute poor and malnutritioned in the region and to develop a balanced food policy

Poverty reduction and improved food security must be viewed as a major economic challenge for the region. In view of the large percentage of the poor residing in the rural areas of the region, and because of the limitations in the area expansion of land use capacities for the next 10 years, agriculture as a major economic activity in the region will have to be supported to contribute to poverty abatement and food security in an imaginative manner.

Agricultural development should be a focal point for rural development in areas where the resource base favour agricultural activity and were large numbers of people depend on farming activities for household income and food security. In particular efforts should be directed at efforts synergistic or complementary to agricultural development such as employment schemes through infrastructure development which is likely to promote agricultural productivity ie. transportation networks, water distribution schemes, etc. In areas of low agricultural potential alternatives to agricultural development should be supported and poverty reduction should then focus on other measures to alleviate poverty. Food for work schemes and targeted public works programmes are examples.

These challenges will largely entail measures to increase rural incomes and household food production, through agricultural development as an element of a comprehensive food strategy. Food importation from external markets may be too expensive for poor populations and foreign exchange might be restricted. It will however be important to create the environment to exploit the diversity and comparative advantages in food production in the region more effectively. In the long term efforts should relocate food production to the higher potential northern areas of the region. This will clearly establish a viable basis for inter

regional trade between food and non-food commodities. Such an initiative however will require a focused effort to develop regional transportation systems, appropriate institutions and harmonized trade policies to complement the interventions proposed above to ensure a more food secure region. In addition direct interventions such as school feeding programmes and special provision for mothers with children will have to be considered as elements of food security programmes.

3.2 To promote productive resource use and to combat environmental degradation

The challenges to increase agricultural production and productivity in the region will require the promotion of production systems in harmony with comparative advantage positions in the region. This will require a movement of production location as infrastructure, policies and institutions enable such exploitation. For the foreseeable future however, increased farm production will rely heavily on the intensification of existing farming systems. Therefore, unless environmentally friendly production techniques, that are acceptable to farmers, are rapidly developed and successfully disseminated, serious environmental collapse must be predicted inter alia due to the continued exploitation of poor and fragile soils.

Apart from infrastructural development and agricultural policy measures, innovative property rights regimes should receive attention to promote sustainable land use and "security of expectations" in land investment. Security of land use rights are important while exchangeable rights will promote productive land use. Communal resources require innovative arrangements. Co-operative arrangements clarifying the ownership of rights between wild life and resource conservation institutions and poor communal land owners to establish and manage a sustainable and productive land use system is one case in point.

The meeting of this particular challenge will firstly require an environmental audit or "base line" within each agro-ecological zone in the region and secondly appropriate incentive systems, technologies and measures to activate the application of "wise and sustainable resource use" systems.

3.3 To stimulate income diversification

The indirect stimulus effect of agricultural production on non-farm and rural incomes and employment is generally proven to be strong. Improved agricultural activity will therefore induce and stimulate linkages between agriculture and the rest of the economy. Available evidence on these effects

through income and employment multipliers and linkages indicate positive impacts for agriculture in Southern Africa (between 1, 3 and 2). These are however lower than in developing Asian and Latin American countries where input intensity in agriculture and market infrastructure is higher (UNDP/UNECA, 1997). Increased agricultural production is therefore likely to expand the economic base and stimulate income diversification in the regional economy. This is particularly important where only one (risky) economic activity, such as farming, dominates the economy.

3.4 To manage land redistribution and land tenure processes

Land redistribution is inevitable in South Africa, and is still in progress in Zimbabwe and Namibia. If a degree of regional food security in basic foodstuffs is to be sustained and employment and income generation promoted through agriculture, it is essential that land reform processes are managed in ways which maintain and even improve yields and aggregate production while accommodating political aspirations and "land hunger". Such objectives may be conflicting and will require compromise and prioritization. In South Africa, the major transfer is expected to occur through the market, but it will also be necessary to make provision for a legally managed land transfer process to benefit a substantial number of previously disentitled black families (World Bank, 1993; Kirsten, Van Rooyen & Ngqangweni, 1996). In Zimbabwe, the government plans to resettle an additional 100,000 families over an unspecified period. The existence of 0.8 million ha of under or un-utilised arable land in Zimbabwe will assist this process but the danger of a lagged yield gap between commercial farmers and resettled farmers on high quality land makes the short and medium term outcome for aggregate national production levels uncertain. Namibian land reform objectives are currently unclear but improved access to grazing land is a high priority.

Land tenure in most countries of the region remains a particular problem. Security of land use combined with exchangebility is required to allow investment and sustained productive use. Communal land tenure arrangements generally applicable to land in the region, does not allow this. Land reform should therefore include aspects of tenure reform.

3.5 To improve the quality of human capacity

In view of the pressures presented by a 2,8% population growth rate on human and natural resources in the region the management of population growth must be viewed as important. This challenge should, however, be casted in a wider context to include improved human development and gender balance through

training, education and human health systems development and gender aspects. The main argument in favour of a human capacity development approach to agricultural development is the importance of research, extension and training, the need for trained workers and the central role of the family, women and community levels decisions in achieving growth of agricultural production and enhancement of the resource base. Vernon Ruttan (1995) argues convincingly for the effective bridging of the "island empires" of agricultural, health and environmental sciences as a major strategy to focus human development efforts to combat poverty and allow for the productive and sustainable use of rural resources in agriculture. The link-up with the education system is of equal importance. Research (Evenson, 1985) has shown the positive impact of primary schooling programmes in developing rural areas on economic growth through increased agricultural production. A major challenge in the region is to build critical capacities needed to successfully design and implement policies, provide equal opportunities to women and men and to strengthen support institutions (UNDP/UNECA, 1997).

3.6 To promote trade

Given the dissimilarities in factor endowments, including natural resources and existing patterns of production, trade and consumption, there exists a substantial linkage and agricultural trade potential between SAR countries (AfDB, 1993; Van Rooyen, *et al.*, 1996).

South African imports from the rest of the world, of commodities which are presently exported from Southern African countries to the rest of the world, provide a potential basis for creating stronger trading links in the region. This potential trade could include meat, fish, vegetables, rice, sugar, coffee, tea, tobacco, rice, textile fibres, crude animal and vegetable products, essential oils and leather (Table 4) (AfDB, 1993).

The importance of future trade must however also be viewed in a wider context. For example the promotion of food trade from the high agricultural potential areas in the north of the region (Tanzania, Zambia, Mozambique) to the lower potential areas in the South, will enable the northern parts to purchase processed and industrial goods from the highly developed industrial economies of the south (South Africa, Zimbabwe and Botswana).

Currently trade policies are not sufficiently harmonized and trade transactions and transportation costs are still high. This apply to internal and external markets. Arrangements to compensate "loosers" may also be required to allow trade creation and synergistic situations to emerge more readily in the region.

Table 4: Potential trade in agricultural commodities between South Africa and other SAR countries (excluding grains)

Item	South Africa Imports US$ mn (1989)	Agricultural Exports of Selected SAR Countries to the Rest of the World (US$ mn) (1989)								
		Zimbabwe	Angola	Kenya	Mada-gascar	Mauri-tania	Mozam-bique	Malawi	Tanzania	Zambia
Meat and meat preparations	41.1	39.6								
Fish and fish preparations	65.5		8.9	11.7	42.4	17.1	37.8			
Vegetables and fruit	28.9	8.94		100.2	9.0	1.6		3.3	24.5	2.1
Sugar and preparations	19.6	40.6			10.6	272.2	14.1	20.3	6.7	
Coffee, tea, cocoa	63.3	36.0	26.5	594.8	207.6	9.1		53.6	184.4	
Tobacco and manufactures	64.6	105.4						96.8	8.5	
Textile fibres	129.2	75.5		14.4	6.9		4.3		47.8	
Crude fertiliser	88.6	48.4								
Crude animal and vegetable material	49.6			19.3	4.5				8.7	
Essential oils	40.9				4.7					
Leather	72.0	9.3		36.2						

Source: AFDB, 1993

4. A ROLE FOR AGRICULTURE IN THE REGION?

The above challenges can clearly not be achieved through agricultural development *per sé*. However, agriculture in the SAR does have scope and potential to play a major role in meeting these challenges facing the economy of most countries of the region. Firstly, this is so, largely due to the importance of domestic food production in most of the countries and due to the dominance of the agricultural sector in most countries with the majority of their populations still residing in rural areas while being poor and depending for their food security on household farm production. It is simply not realistic to believe and plan that household incomes will go up sufficiently outside agriculture to permit the purchase and importation of sufficient food (Rukuni, 1995). A second reason for the promotion of agricultural activity is found in the significant potential to stimulate economic diversification through income and employment linkages.

The natural resource base of the region does have the potential and the diversity to stimulate agricultural activity to form an important basis for increased food production, employment and regional trade, provided these resources are managed for sustainable production and productivity increases. In the short term the challenge of a 4% plus increase in agricultural production for Southern Africa argued by the Vision 2020 initiative of IFPRI will however be extremely difficult to achieve, especially if it is compared to performance in the agricultural sector since 1980 (see Table 1). Only two countries, Tanzania and Zambia, succeeded in achieving a growth rate of more than 4%. However, in the Vision 2020 and the African Development Bank workshops on agricultural transformation, participants argued that this growth rate is well within the technical and economic capacity of most countries: "provided that reaching this goal is made the top priority in public investment for research, producer support systems and infrastructure, in a way that effectively mobilizes private production activities" (Badiane and Delgado, 1995). New policies and investment in research, extension, infrastructure and support institutions will clearly be required to meet the challenges posed for the agricultural sector.

Indications are that agriculture policies and strategies to date in the region did not properly account for the potential of this sector: in most of the countries economic policies favoured industrial development and urban concentrations; funding of rural activities, small farmer support services, agricultural research and the support to strengthen farmer and rural organization have been neglected (Eicher and Rukuni, 1994; Csaki, Dams, Metzger and Van Zyl, 1992; Carney and Van Rooyen, 1996); in countries such as South Africa, Zimbabwe and Namibia dualistic agricultural strategies were followed, with support largely directed towards small numbers of commercial large scale farming.

Small scale farming, much of it on communal or "tribal" lands were not properly supported. Although this approach promoted the achievement of food self-sufficiency, it did not reduce poverty while rural populations and households remained food insecure. The full potential of the small holder sector was therefore not exploited to provide food on rural markets; gender relations and especially the central position of women in household food security were also largely ignored. This led to situations which often undermined good intentions of bringing about rural transformations (Mini, 1994; Sivard, 1985). Agricultural land reform have not created sufficient productive farming opportunities due to the lack of appropriate support systems (Rukuni, 1995) and synergistic models between large scale and small scale farming have not been exploited yet (Van Rooyen and Ngqangweni, 1996); and trade barriers constrained the development of new markets and the reduction of transportation costs.

Furthermore agricultural policies did not sufficiently account for the different stages of economic transformation[2] within the SAR. This is important because policies should take note of the structure of the economy in designing agricultural and economic policies to stimulate economic development processes (Timmer, 1988). This point is now argued (see Van Rooyen, 1997, for a comprehensive analysis).

In countries/areas such as Tanzania, Mozambique, parts of Zimbabwe and Malawi, economies are still in an early transformation stage, with the majority of employment as well as the greatest contribution to GDP directly generated by agriculture (Table 1). Due to high resource potential in these areas "getting agriculture moving" strategies are obviously required to activate and lead economic activities. These would entail a policy mix promoting public investment in rural infrastructure, human capacity development for agriculture, research and extension for food crops, the development of local food markets and the stimulation of agriculturally led "up and down stream" economic linkages. The stabilization of farm household income will therefore be important in these areas to sustain these important linkages. In this stage of transformation the public sector will clearly have an important role to play in these programmes (Mosher, 1971).

In Northern and Central Zimbabwe and parts of South Africa (high potential areas in the previous homelands), and Swaziland, economic transformation have progressed with less people in agriculture and greater activity in other economic sectors. The contribution of the local agricultural sector should logically be optimized through the further stimulation of employment and income linkages with other sectors of the regional economy by promoting market related food and cash crop production and agro processing (Mellor, 1986). Major policy

initiatives should therefore focus on investments to develop input, product and financial markets, reduce risks and transactions costs and to support technical and managerial capacity development which will allow farmers to embrace technological modernization and market based production strategies. Trade policies will also become important to promote regional markets.

A third grouping is to be found in countries which have transformed to show strong and integrated commercial farming sectors (South Africa, Mauritius and parts of Zimbabwe). These agricultures operate in an open economic structure where agriculture is largely integrated into the economy and directly contributes a relative smaller proportion to the GDP and employment. The indirect contribution through linkages and multipliers is still large. In these countries agriculture *per sé*, will not play a key or driving role in future economic growth any more. However, due to the potential of the agricultural sector to stimulate employment and income linkages with other economic sectors in these economies, a successful and productive agriculture sector should thus rather be considered as playing a complimentary, albeit vital, role for economic growth and development in these countries. Emphasise on industrial and urban development will however be inappropriate. A well balanced economic strategy will rather be needed in these countries.

Countries with an economic structure such as Lesotho, Botswana and Namibia, and with their restricted natural resource base and limited agricultural potential, should clearly view agriculture as a less important sector in their economic growth and development path and rather focus on non-farming activities and the achievement of food security through income generating strategies and the mobilization of remittances.

From the above analysis it can be concluded that the agriculture sectors in the various countries of the SAR should be positioned to contribute towards meeting the challenges in terms of different sets of considerations. This is illustrated in Table 5 by observing the changing role of agriculture in performing the basic "Mellor and Johnston" functions of food provision, foreign exchange earnings, employment creation and income generation. The position of agriculture in food security provision will also differ between countries. This will obviously require different policy positions. Regional policies on the other hand should simultaneously focus on the exploitation of the diversity and comparative advantages in the region through the development of markets to create trade and employment and income linkages and the necessary infrastructure and harmonization of trade policies. Focus should also be on co-operation in training, research, technology development and transfer in the agricultural sector. This will

Table 5: Roles for agriculture in the Southern African region

Country	Quality of the natural resource base for farming	Roles for agriculture0					Main source of food security[3]
		"Engine of growth"[1]	Food provision[2]	Foreign exchange earnings	Employment creation	Income generation	
Mozambique	Good in North	Yes	Important	High value crops	Important	Important	Small holder farming; remittances
Malawi	Land-scarce	Yes	Important	High value crops	Important	Important	Small holder farming; remittances
Tanzania	Good in South	Yes	Important	Grains, high value crop	Important	Important	Small holder farming; wages
Zambia	Good	Yes	Important	Grains, high value crop	Important	Important	Farming, agricultural wages, remittances
Lesotho	Poor	No	At household level	No	No	No	Industrial wages, remittances
Zimbabwe	Good in parts	Yes	Important	Grains, Beef, high value, crops	Important	Important	Small holder and commercial farming, wages, remittances
Angola	Good	Yes	Important	Export crops	Important	Important	Small holder farming
Swaziland	Good	Complementary	Important	Beef, high value crops	Important	Important	Small holder farming, wages, remittances
Namibia	Poor, good in	No	Important in the	Beef	Limited	Limited	Wages, remittances,

Country	Quality of the natural resource base for farming	Roles for agriculture0					Main source of food security[3)]
		"Engine of growth"[1)]	**Food provision**[2)]	**Foreign exchange earnings**	**Employment creation**	**Income generation**	
	north		north				small holder farming in the north
Botswana	Poor	No	Domestic in some parts	Beef	Limited	Not important	Industrial wages, remittances
Mauritius	Good	Complementary	Domestic in some parts	High value crops	Linkages	Linkages	Wages, small holder production in some parts
South Africa	Good in parts	Complementary	Important	Food & high value crops	Important through linkages	Important through linkages	Industrial wages, farm wages, remittances, commercial farming, small holder production in some parts

Source: Van Rooyen, 1997

1 Whether the agricultural sector should be positioned to drive to economic transformation process.

2 Food provision at the domestic/national levels could become increasingly important if local currencies devaluate and major purchases are required at ever increasing costs.

3 In emergency situations food aid may be required in some countries.

require the linking of macro policies with agricultural policies, both at national and regional levels and the development of institutional capacities.

5. CONCLUSIONS

From the article the following main conclusions can be drawn:

(i) The agricultural sector in the region should rightfully be assigned the responsibility to play a far more positive role in the transformation of the Southern African economy. This is largely so because of the importance of food security in all the economies of the region; because the majority of the population in the region still reside in rural areas and are poor and food insecure and not productively employed; while agriculture in the region does have the natural resource potential to contribute significantly to economic development and transformation through the stimulation of income and employment linkages within countries and in the region;

(ii) The various countries in the region are at differing stages of the economic transformation process. The position and contribution of the agricultural sector therefore differs between countries. The diversity and differences in the roles and contribution of the various agricultural sectors in the countries of the region should be appreciated and accounted for in national and regional policies and strategies. This will provide an important stimulus for regional co-operation and development;

(iii) While the natural resource base of the region have the potential to increase agricultural productivity, food security, employment and regional trade, it is complex and fragile. Without proper resource management and technological innovation the danger of sub-optimal land use leading to environmental degradation is serious; and

(iv) Regional co-operation patterns and arrangements are presently sub-optimal. However, occurrences of the recent past, have opened up the prospect of regionalism, economic integration and co-operation between all the countries in Southern Africa. The long term potential of agricultural production to activate co-operation and trade throughout the regional economy is apparent. It may however be advisable to follow a cautious route that would also be in harmony with the other measures to promote economic co-operation in general, ie. trade development, infrastructural development, finance arrangements, etc. Such an approach will prevent initiatives from entering prematurely into ambitious co-operation arrangements that may quickly run into obstacles of national interests and

scarcity of resources and thus produce more frustrations than benefits for those concerned. Initiatives for regional co-operation should therefore rather be selected cautiously to allow for the peculiarities within the region.

The agricultural sector in the region is not yet performing in an optimal manner. The main goals for agricultural development in a regional strategy should therefore be to:

- transform this sector(agriculture) in each country with agricultural potential to generate higher and sustainable farm incomes and increased rural employment and improve food security; and to

- transfer income and resources from the agriculture sector to other productive sectors of the economy in the region on a regular and economic rational basis to support the required economic transformation processes.

The contribution of the agricultural sector will differ between countries within the region inter alia based on the position of the agricultural sector in the economic structure, natural resources and comparative advantages, institutional capacities and capital resources. Each country should thus identify the unique contribution of it's agricultural sector firstly as it apply to it's domestic needs. It is equally important in terms of the potential of the agricultural sector to meet the challenges of the region especially in context of the evolving regionalism in the SAR.

Achieving these objectives and allowing the agricultural sector to play an effective role in addressing regional problems and issues will require the introduction of an innovative policy framework at national and regional levels, and also the development of complementing institutions, incentives and support systems to promote productivity growth within agriculture and between agriculture and the rest of the economy. This could be achieved through the drafting of an "Agenda for Agriculture Development" and by considering an "Agricultural Co-operation Protocol" to compliment the other processes and protocols currently also under consideration in the region.

NOTES:

1. The following countries are included: Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, Mauritius, Namibia, South Africa, Swaziland, Tanzania, Zambia, Zimbabwe. These are all countries included in SADC.

2. Economic transformation is the process where by changes in the economic structure of a country/region/area leads to increased per capita income. Economic transformation will in particular lead to a decrease in the proportional contribution of primary sectors such as agriculture to GDP and the reduction of the percentage (and eventually absolute members) of the economic active population employed by agriculture in favour of the other sectors of the economy (Tomich, Kilby and Johnston, 1995).

REFERENCES:

ABALU, G.I. (1997). *Food insecurity, rapid population growth and environmental degradation in Eastern and Southern Africa*. *Paper presented at the symposium on Food Security, UN Economic Commission for Africa*, Pretoria, South Africa.

AFRICAN DEVELOPMENT BANK. (1993). *Economic Integration in Southern Africa.* Abidjan, Ivory Coast.

BADIANE, O. & DELGADO, C.L. (1995). *A 20/20 Vision for Food, Agriculture and the Environment in Sub-Saharan Africa*. IFPRI discussion paper 4, Washington DC, USA.

CARNEY, D. & VAN ROOYEN, C.J. (1996). Empowering small farmers through collective action: The case of technology development and transfer. *Agrekon,* 35(4):332-335.

CELE, S., SETAI, B., VAN ROOYEN, C.J. & VINK, N. (1994). An overview of prospects for improvements in the food producing capacity of Southern Africa. *Conference of the International Association of Agricultural Economists*, August 1994, Harare, Zimbabwe.

CLEVER, K. & SCHREIBER, G. (1994). *Reversing the spiral: the population, agriculture and environmental nexus on sub-sahara Africa*. The World Bank.

CSAKI, C., DAMS, Th.J., METZGER, D. & VAN ZYL, J. (eds.) (1992). *Agricultural restructuring in Southern Africa*. Proceedings, IAAE inter conference symposium, AGREKONA, Windhoek, Namibia.

DENG, L.A., MBWANDA, C., MOHAMMES, N. & LUFUMPA, C.L. (1995). *Agricultural transformation in Africa: The missing links.* African Development Bank, Abidjan, Ivory Coast.

EVENSON, R.E. (1988). Human capital and agricultural productivity change. In Maunder, A and Valdes, A (eds). "*Agriculture and Governments in an Interdependent World*". IAAE Conference, Buenos Aires, Argentina.

FOOD AND AGRICULTURE ORGANIZATION (FAO). Case study material displayed at the World Food Summit. Rome, November 1996.

GLOBAL COMMISSION OF AFRICA (1995). *An agriculture strategy for Africa*. African Development Bank, Abidjan, Ivory Coast.

GOLDMAN, R.H. & BLOCK, S. (1993). *Proceedings from a symposium on agricultural transformation in Africa*. APAP II, Technical Report No. 137.

HARRISON, D. (1987*). The greening of Africa: Breaking through the battle for land and food*. London, Paladin Grafton Books.

MELLOR, J.W. (1986). Agriculture on the road to industrialization. In J.P. Lewis and V. Kallab, (eds.). "*Development strategies reconsidered*". US Third World Policy Perspectives No 5. Transaction Books for the Overseas Development Council, New Brunswick, N.J.

MINI, S.E (1994). Gender relations of production in the Eastern Cape and the restructuring of rural apartheid. *Africa Insight*, 24(4).

MOSHER, A.T. (1971) *To create a modern agriculture. Organization and planning*. New York, Agricultural Development Council.

RUKUNI, M. (1995). Getting agriculture moving in Eastern and Southern Africa and a framework for action. In Badiane, O. and Delgado, C.L. (eds.). "*A 2020 Vision for Food, Agriculture and the Environment in Sub-Saharan Africa*". IFPRI, Washington DC, USA.

RUTTAN, V. (1995). Agricultural, environmental and health research in a global environment. Economic integration in the Western Hemisphere Symposium, IATRC and IAICA, San José, Costa Rica.

SARTORIUS VON BACH, H.J. & VAN ROOYEN, C.J. (1995). Grain as a trading commodity in Southern Africa? *Agrekon* 34(4):

SECKLER, D. (ed.) (1993). *Agricultural Transformation in Africa*. Winrock International Institute for Agricultural Development, Arlington, USA.

SIVARD, R. (1985). *Women - A World Survey World Priorities*. Washington, DC.

SPENCER, D.S.C. (1995). *Past trends and future prospects for agricultural development in Sub-Saharan Africa.* African Development Bank, Abidjan, Ivory Coast.

STAATZ, J.M. (1994). The strategic role of food and agricultural systems in fighting hunger through fostering sustainable economic growth. Department of Agricultural Economics, Staff Paper No. 94-39, Michigan State University.

THE WORLD BANK (1990). *The long-term perspective study on Sub-Saharan Africa*. Washington DC, USA.

THIRTLE, C., SARTORIUS VON BACH, H.J. AND VAN ZYL, J. (1993). Total factor productivity in South African agriculture, 1947-1991. *Dev. So. Afr,* 10:301-318.

TIMMER, C.P. (1988). The agricultural transformation. In: , H.B. Chenery and T.N. Srinivasan (eds.). *Handbook of development economics.* Vol 1. North-Holland, Amsterdam. (Chapter 8).

TOMICH, T.P., KILBY, P. & JOHNSTON, B.F. (1995). *Transforming agrarian economies*. Cornell University Press, Ithaca, London.

USAID (1995). Structural adjustment and comparative advantages in South and Eastern Africa Project. Workshop at the University of Pretoria, South Africa.

UNDP/UNECA (1997). Capacity building in support of Food Security and sustainable agriculture development in Sub-Saharan Africa. Discussion document, UN Economic Commission for Africa, Addis Abeba, April 1997.

VAN ROOYEN, C.J., VAN ZYL, J., SARTORIUS VON BACH, H.J., NUPPENAU, H.A. & NJOBE, B. (1994). A strategic approach to agricultural trade in the Southern African Region. *Conference of The International Association of Agricultural Economists,* August 1994, Harare, Zimbabwe.

VAN ROOYEN, C.J. & VINK, N. (1992). Strategies for economic co-operation and development in the Southern African sub-continent: Towards 2000. In: Csaki, C., Dams Th J., Metzger D. and Van Zyl, J. (eds.). "*Agricultural Restructuring in Southern Africa*", Agrekona, Windhoek, Namibia.

VAN ROOYEN, C.J. & NENE, S. (1996). What can we learn from previous small farmer development strategies in South Africa? *Agrekon*, 35(4) :325-331.
VAN ROOYEN, C.J. & NGQANGWENI, S.S. (1996). The equity-sharing model for agrarian reform in Southern Africa. Southern African Business Forum. Harare, Zimbabwe, March 1996.

VAN ROOYEN, C.J. (1997). *New roles for the agricultural sector in the Southern African Region*. Paper presented at the SADC: FSAU policy workshop, Harare, Zimbabwe.

VINK, N. (1992). Expanding the playing field : South Africa, Southern Africa and the role of the agricultural economist. *Agrekon,* 31(4):138-148.

WORLD DEVELOPMENT INDICATORS (1997). World Bank. Washington DC. USA.