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6 Institutional Co-operation to Address Socio-economic Aspects Related to Migrant Pests of Agriculture in the Southern Africa Region

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ABSTRACT

The southern African region referred to in this paper comprises the 14 member countries of the Southern African Development Community (SADC). The influence of migratory pests such as locusts and Red-billed Quelea on agricultural production and its contribution to the alleviation of rural poverty in the region is highlighted. Networking in a co-ordinated manner among present institutional structures to address research needs and migratory pest control measures to enhance food security, which in turn contributes to poverty relief, is an essential goal. In the past the Southern African Regional Commission for the Conservation and Utilisation of the Soil (SARCCUS) Sub-Committee for the Control for Migratory Pests played a major role in the southern African region, to achieve such a goal. The incorporation of SARCCUS's Sub-Committee for the Control of Migratory Pests into the new SADC Crop Sector opens new horizons and offers new challenges to achieve this goal.

INTRODUCTION

The aims of this workshop are to identify the key issues for promoting the uptake and impact of research on migrant pests in southern Africa. The participants include a variety of institutional managers, an experienced body of scientists, researchers, and also last, but not least, experienced managers and operators of crop protection. I classify myself under this last category and will address the topic of *Institutional Co-operation to Address Socio-economic Aspects Related to Migrant Pests of Agriculture in the Southern African Region*, as seen in the eyes of such a manager. Furthermore when referring to southern Africa, I am referring to the sub-regional body of Africa known as the Southern African Development Community (SADC), comprising the 14 following countries in alphabetical order: Angola, Botswana, Comoros, Democratic Republic of Congo, Lesotho, Malawi, Mauritius, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Zambia, Zimbabwe.

SOCIO-ECONOMIC ASPECTS

Migrant pests are a natural phenomenon and only when they threaten man's livelihood do they pose a problem. Through grain crop production practices for example, man has

Table 1 1996 land use dynamics of SADC countries (World Bank, 1998a)

Country	Total area ($km^2 \times 1000$)	Arable land area ($km^2 \times 1000$)	% Arable land
Angola	1247	37.4	3
Botswana	582	5.7	1
Comoros	3	0.7	35
Dem. Rep. Congo	2267	68.0	3
Lesotho	30	3.0	1
Malawi	94	16.9	18
Mauritius	2	1.0	52
Mozambique	784	31.4	4
Namibia	823	8.2	1
South Africa	1221	39.7	13
Swaziland	17	2.0	11
Tanzania	884	35.4	4
Zambia	743	52.0	7
Zimbabwe	387	30.9	8
Total	9084	332.3	3.7
United States	9159	1923.0	21

disturbed nature's sensitive balance, by simultaneously increasing the availability of food sources for pests. Table 1 reflects the distribution of arable land in the SADC region (World Bank, 1998a). The arable land includes land defined by the Food and Agricultural Organisation of the United Nations (FAO), as land under temporary crops (doubled cropped areas are counted once), temporary meadows for mowing or for pasture, land under market or kitchen gardens, and land temporarily fallow. Land abandoned, as a result of shifting cultivation is not included, nor is land on which trees are grown for wood or timber. From the table it is very clear how scarce the SADC countries' arable land sources are. Only 3.7% of the total land area consists of arable land, compared to 21% of a developed country such as the USA, whose total land area is of the same proportions as the SADC region. In the past, demand for food was met by growth in arable land area under cultivation. For the last 10 years, however, global growth in arable land area has been zero. The world is almost entirely dependent on increased yields to expand agricultural production.

The SADC countries are no exception to this rule. The rural population indicated in Table 2 is the difference between total and urban population. The table clearly indicates that migrant pests such as Red-billed Quelea, *Quelea quelea*, locusts and African Armyworm, *Spodoptera exempta*, threaten 122.9 million people in the SADC region (67% of the total population) whose livelihoods depend on agriculture and subsequent food production. The poor food security position of the region is highlighted by comparisons. The 0.18 ha/capita arable land is meagre in comparison with a country such as the United States, which has 0.71 ha of arable land per capita, with which to feed its population and also to contribute to its Gross Domestic Product (GDP) with exports. The rural population density (i.e. the rural population divided by the arable land area), of 370 people/km^2 for the SADC region, is more than tenfold that of a developed country such as the United States, where there are 34 people/km^2. The potential economic loss caused by migrant pests on a crop in the SADC region, and on the livelihoods of the rural population there, is therefore also more than tenfold that of their counterparts in the USA.

Table 2 1996 population and land use dynamics of SADC countries (World Bank, 1998a)

Country	Total population (millions)	Rural population (millions)	Rural of total population (%)	People/km^2 arable land (number)	Arable land (ha/capita)
Angola	13.3	9.3	70	248	0.28
Botswana	2.1	0.9	46	168	0.27
Comoros	0.6	0.4*	67	400*	0.17*
Dem. Rep. Congo	40.0	29.2	73	429	0.17
Lesotho	1.9	1.4	74	470	0.16
Malawi	10.0	8.5	85	505	0.17
Mauritius	1.1	0.7	64	668	0.09
Mozambique	18.5	12.3	66	391	0.17
Namibia	1.6	1.0	63	121	0.51
South Africa	39.7	20.3	51	128	0.40
Swaziland	0.9	0.6*	67	300*	0.22*
Tanzania	32.2	25.7	80	728	0.11
Zambia	8.9	5.1	57	97	0.59
Zimbabwe	11.4	7.5	66	244	0.27
Total	182.2	122.9	67	370	0.18
United States	270.8	65.4	24	34	0.71

*Extrapolated
Total average used because actual figures not available

The Gross Domestic Product (GDP) figures (Table 3) represent the sum of total consumption and gross domestic savings per country (World Bank, 1998b). Although the contribution of agricultural production to GDP of the SADC region weighted average (wm), only amounts to 12.8%, its contribution varies from as little as 4.5% for Botswana, to as much as 59.4% for Tanzania (J. A. Radebe, pers. comm.). Similarly, GDP per capita

Table 3 Gross Domestic Product (GDP), agriculture's contribution, and GDP/capita of SADC countries (World Bank, 1998b)

Country	GDP (US$ Billion)	Agriculture (% GDP)	GDP/capita (US$)
Angola	10.0	15.7	752
Botswana	4.6	4.5	2190
Comoros	0.4	40.0	685
Dem. Rep. Congo	18.0	59.0	450
Lesotho	0.9	11.3	461
Malawi	2.2	39.8	220
Mauritius	3.2	9.7	2909
Mozambique	1.4	35.0	76
Namibia	2.8	15.3	1750
South Africa	130.0	4.7	3275
Swaziland	1.0	9.1	1097
Tanzania	2.3	59.4	71
Zambia	3.3	18.1	370
Zimbabwe	6.3	13.9	550
Total	186.4	12.8 (wm)	1022 (wm)
United States	8083.0	2.0	30200

weighted average for the SADC region amounts to US$1022 but is as low as US$71 in Tanzania. The values for nine of the SADC region countries are below the average GDP per capita income of US$1022, which is only 3.4% of the GDP per capita income of a developed country such as the United States, whose GDP per capita income is US$30,200. Countries such as Comoros, Democratic Republic of the Congo, Malawi, Mozambique and Tanzania whose majority of per capita income is derived from agriculture, are therefore very vulnerable to impoverishment because of the threat of migrant pests of agriculture. The fact that the other SADC countries have other alternative sources of income however, does not alter the fact that they too are vulnerable to impoverishment as a result of migrant pest damage to agricultural production, if you take into consideration their relative low per capita income.

INSTITUTIONAL CO-OPERATION

Migrant pests in the southern regions of the African continent do not recognise political boundaries and it is also a fact that agricultural resources such as rivers and indigenous vegetation are not subject to territorial delimitation. Just as national boundaries cannot prevent the spread of plant and animal diseases, so do migrant pests such as locusts and quelea traverse countries of southern Africa with total disregard of territorial distinction. There is, therefore, inter-dependence and a need for territorial co-operation with regard to the management of migrant pests and their possible control and further research.

Many countries were aware of this fact and in 1948 various territories in southern Africa met at the Inter-African conference at Goma, to discuss issues such as land utilisation incorporating migrant pest control (Bridgens, 1989). Shortly after the Goma meeting, a conference was held in London where it was unanimously agreed that an inter-Governmental Commission for Technical Co-operation in Africa South of the Sahara (CCTA) be set up. The CCTA was to function as an overall policy forming and administrative body, to promote inter-territorial co-operation in all fields of social and economic development in Africa South of the Sahara. In the same year, at an African Regional Scientific Conference held in Johannesburg, South Africa, the Scientific Council of Africa South of the Sahara (CSA) was brought into being as a purely scientific body to act as adviser to CCTA.

The subject of liaison and inter-relationships between sub-continent organisations such as CCTA/CSA and regional organisations such as Regional Committees is a complicated one. Suffice it to say, that it followed that technical work best undertaken on a sub-continent scale was undertaken by CCTA/CSA, while technical work focused more on local issues at regional level was undertaken by the Regional Committees. Proceedings and recommendations of Regional Committee meetings were distributed amongst CCTA, CSA and other Regional Committees to sustain an inter-communication process. One of the Regional Committees, which originated from this milieu, was the Southern African Regional Commission for the Conservation and Utilisation of the Soil (SARCCUS), which held its inaugural meeting in Pretoria, South Africa, on 5 June 1950. After 12 years, during which SARCCUS functioned by way of rapporteurs, six, and later ten, Standing Committees were initiated. With the cessation of CCTA in 1964, the change of SARCCUS to that of an autonomous Regional Commission was ratified. The SARCCUS Region's northern boundary was determined as the sixth latitude line of mainland Africa and adjoining Islands. However, not all the countries within that boundary joined the organisation. The following countries (in alphabetical order) were active members: Angola, Botswana, Lesotho, Malawi, Mozambique, South Africa, South-west Africa/Namibia, Swaziland.

SARCCUS's aim was to promote technical co-operation with a view to achieving tangible benefit for all member countries whilst ignoring any political differences that might have existed amongst member countries. This purely technical, non-political, stance facilitated many significant contributions which the Commission made to southern Africa during its time.

A subcommittee for Migratory Pests addressed aspects of migrant pests of southern Africa under the Standing Committee for Plant Protection. This subcommittee convened once a year on a rotational basis amongst the member countries during which every country reported on the scope of control of migrant pests and also relevant research project findings of the previous year. The member countries also established a reporting network, administered by the SARCCUS Secretariat, on migrant pest movements throughout the region, which functioned as an early warning system. The tenth and last meeting of this subcommittee was held in Windhoek, Namibia, during June 1997. Since then SARCCUS has been in the process of being incorporated into the SADC structure.

The SADC Ministers of Food, Agriculture and Natural Resources (FANR) have approved the proposed Terms of Reference for the new SADC Crop Sector, which has been allocated to Zimbabwe for co-ordination (M. Molope, pers. comm.). According to the terms of reference, the main objectives will be to promote the output, protection, processing, storage and utilisation of all crops, including perennial crops, as a means of enhancing food security and promoting trade and economic development. The ministers also agreed that the new Sector Co-ordinating Unit for Agricultural Research and Training should concentrate on co-ordinating research in crops and livestock, working closely with the Crop Production and Livestock Sectors.

CONCLUSION

The importance of co-operation and networking amongst SADC countries and international institutions to address rural poverty alleviation was highlighted at a workshop held in Cape Town, South Africa, during February 1996, sponsored by the SADC Secretariat, the World Bank and the International Fund for Agriculture and local authorities (IFAD, 1996). The influence that migrant pests of agriculture have on agricultural production, food security, GDP per capita and poverty alleviation programmes speaks for itself. The strong foundation that has been created by the amalgamation and streamlining process to form a broader SADC body offers the opportunity to network migrant pests of agriculture aspects in order to obtain the set goal of poverty alleviation.

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SESSION 2A CURRENT MIGRANT PEST RESEARCH BASED IN SOUTHERN AFRICA: LOCUSTS