

# **Competence and Capacity for Agricultural Development in Malawi**

An overview of institutions involved in knowledge generation,  
training and extension in agriculture and natural resource management

By  
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Noragric Report No. 22  
August 2004

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**Agricultural University of Norway**

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Kaarhus, Randi, Competence and Capacity for Agricultural Development in Malawi, Noragric Report No. 22 (August, 2004)

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ISSN: 1502-8127

Photo credits: J.B. Aune, I. Bryceson, P. Wisborg  
Cover design: Spekter Reklamebyrå as, Ås  
Printed at: Rotator, Ås

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## ACRONYMS AND ABBREVIATIONS

ADD	Agricultural Development Division
APATU	Agricultural Policy Analysis Training Unit
APRU	Agricultural Policy Research Unit (at Bunda College)
BA	Bachelor of Arts
BCA	Bunda College of Agriculture
BSc	Bachelor of Science
CARD	Centre for Agricultural Research and Development (at Bunda College)
CGIAR	Consultative Group on International Agricultural Research
CIDA	Canadian International Development Assistance
CIFOR	Centre for International Forestry Research
CMI	Chr. Michelsen Institute
CSR	Centre for Social Research
DAES	Department of Agricultural Extension Services
DANIDA	Danish International Development Agency
DARS	Department of Agricultural Research Services
ESCOM	Electricity Supply Commission of Malawi
EU	European Union
FAO	Food and Agriculture Organisation
FORUM	Forum on Agricultural Resource Husbandry
FRIM	Forestry Research Institute of Malawi
GTZ	German Technical Co-operation
ICEIDA	Icelandic International Development Agency
ICLARM	The World Fish Centre
ICRISAT	International Institute of Tropical Agriculture
IDEAA	Initiative for Development and Equity in African Agriculture
IFAD	International Fund for Agricultural Development
IITA	International Institute of Tropical Agriculture
IMF	International Monetary Fund
JICA	Japan International Cooperation Agency
MA	Master of Arts
MAIFS	Ministry of Agriculture, Irrigation and Food Security (formerly MoAI)
MAROP	Malawi Agricultural Research and Outreach Programme
MNREA	Ministry of Natural Resources and Environmental Affairs
MoAI	Ministry of Agriculture and Irrigation (now MAIFS)
MSc	Master of Science
NAC	National Aquaculture Centre
NASDEC	NASFAM Development Corporation
NASFAM	National Smallholders Farmers' Association of Malawi
NLH	Agricultural University of Norway
NORAD	Norwegian Agency for Development
NRC	Natural Resources College
NUFU	Norwegian Council for Higher Education's Programme for Development Resource Education
PRSP	Poverty Reduction Strategy Paper
SADC	Southern African Development Community
SARRNET	Southern African Root Crops Research Network
SUA	Sokoine University of Agriculture, Tanzania
TARP	Tanzanian Agricultural Research Programme
UK	United Kingdom
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
US	United States

USAID  
VSAT

United States Agency for International Development  
Very Small Aperture Terminal







## **PREFACE. IN MALAWI YOU CANNOT RUN AWAY FROM AGRICULTURE!**

This report is written with the aim of being useful reading for donors, development planners and international partners in development cooperation working in the fields of agriculture and natural resource management research and outreach, institution building in tertiary education, and cross-institutional and inter-disciplinary approaches. But above all, it is written with the hope of being useful for individuals and sector institutions involved in preparing new cross-institutional and interdisciplinary linkages and collaboration in Malawi.

Malawi is one of the countries in Southern Africa that at present experiences a situation of both complex and urgent challenges – above all associated with poverty, and rural poverty in particular. In a world of commercial globalisation, 90% of the country's export earnings come from agricultural products, while 85% of the economically active population depend on agriculture. Most of the around 11 million people in Malawi are smallholder farmers. Agricultural productivity is, however, low, and generally declining. In fact, increasing poverty among smallholders appears to be both cause and effect of low agricultural productivity. Smallholders' poverty is closely linked to increasing pressure on land and natural resources, and it appears essential to find means to increase agricultural productivity.

Present figures indicate that 60% of households in the course of a year experience food insecurity, and it is no doubt necessary to assist smallholders to develop new opportunities for income generation. The question is: How? *Is the key to solving Malawi's problems to be found in competence and capacity building in the agricultural sector and in natural resources management?* Will better training of more students in agriculture, extension and natural resources management result in improved food security at the national level? Does agricultural research and transmission of research-based knowledge eventually reach small-scale farmers and improve their livelihoods? Is research in these fields responding to smallholder farmers' needs?

These are challenging questions in the Malawian context today. It is a context where Bunda College of Agriculture plays the role of a key institution in agricultural and natural resources management training and research. The Ministry of Agriculture, Irrigation and Food Security is, on its part, responsible for a network of agricultural research stations and for a network of (so far) public extension services. But none of these institutions have so far been able to exhibit a positive impact on smallholder agriculture at a scale that corresponds either to the ambitions of the institutions themselves or to the present challenges in rural areas. How to make the most of the science-based competence and capacity that exist in the fields of agriculture and natural resource management is actually quite an urgent issue in Malawi.

“In Malawi you cannot run away from agriculture!” is a statement that in many ways summarizes the situation. During the interviews carried out to seek information and perspectives from different stakeholders for this report, it was pronounced not by a Malawian professional in agriculture, but by a social scientist.

The present study addresses the issue of how science-based competence and capacity for agriculture in Malawi are organised and how human resources in these fields are trained and utilized. It provides an updated and analytically oriented overview of key institutions involved in science-based knowledge generation and dissemination (*extension*) directed at the

agricultural sector in the country. The study is a first attempt to carry out such a sector-oriented competence-and-capacity mapping.

The report was originally planned to serve as a support and background document for the proposed *Bunda College Development Programme*, which in 2004 is being submitted to NORAD for funding. However, it is hoped that it can also be useful in the planning of future collaboration both between the institutions described here and between these institutions and external partners. It could be useful in the planning of how to prioritise resources in the further development of competence and capacity in the agricultural sector and in natural resources management in Malawi. And it may serve as an input to further planning processes at the policy-making level, both in tertiary education, in natural (and human) resource management, and in agricultural development.

## ABSTRACT

This report is written with the aim of being useful reading for donors, development planners and international partners in development cooperation working in the fields of agriculture and natural-resource management research and outreach, institution building in tertiary education, and cross-institutional and inter-disciplinary approaches. But above all, it is written with the hope of being useful for individuals and sectoral institutions involved in preparing new and farmer-oriented cross-institutional and interdisciplinary linkages and collaboration in Malawi.

Malawi is at present one of the countries in Southern Africa that experiences a situation of complex and urgent challenges – above all associated with poverty, especially rural poverty. 90% of the country's export earnings come from agricultural products, while 85% of the economically active population depend on agriculture. Most of the around 11 million people in Malawi are smallholder farmers. Agricultural productivity is, however, low, and generally declining. In fact, increasing poverty among smallholders appears to be both cause and effect of low agricultural productivity. Smallholders' poverty is closely linked to increasing pressure on land and natural resources, and it appears essential to find means to increase agricultural productivity. In this situation: *Is the key to solving Malawi's problems to be found in competence and capacity building in the agricultural sector and in natural resources management? If so: What is the present state of affairs?*

The report addresses the issue of how science-based competence and capacity for agriculture in Malawi are organised and how human resources in these fields are trained and utilized. It provides an updated and analytically oriented overview of key institutions involved in science-based knowledge generation and dissemination (*extension*) directed at the agricultural sector in the country. In Chapter 1, it describes the establishment of Bunda College of Agriculture and the development of the College from the 1960s up to the present. Chapter 2 gives an overview over Bunda College faculties, departments and research units, including an overview of staff and students in each unit.

Chapter 3 presents other key training and research institutions in the field of natural resources management, extension and rural development. Natural Resources College, Malawi College of Forestry and Wildlife, and Mzuzu University Forestry Programme are briefly described, in addition a number of particularly relevant departments and programmes at Chancellor College are included, together with the Forestry Research Institute of Malawi and the National Aquaculture Centre at Domasi.

Chapter 4 is focussed on the research and extension institutions (at present) under the Ministry of Agriculture, Irrigation and Food Security. It gives a brief (but certainly not exhaustive) overview of the research stations under the Departments of Agricultural Research Services, and an account of the present reform process carried out under the Department of Agricultural Extension Services. Chapter 5 presents briefly the international agricultural research institutions with a (physical) presence in Malawi, such as IITA and ICRISAT. While Chapter 6 gives a brief account of the role of NASFAM, a smallholder farmers' organisation playing a quite important role in the field of providing extension services "on the ground".

The report cannot be said to give a comprehensive description of all these institutions, nor does it cover all their activities. It is, however, a first attempt to make an overview – a competence and capacity map – in this field.

A prominent concern among representatives of Malawian institutions working in the field of agriculture and natural resources management are economic concerns. The principal problem pointed out during the series of conversations carried out to make this report was the problem of lack of funding. External collaborators would more often point to organisational structures and the incentives for use of human (knowledge) resources as key institutional problems. Both the Malawian professionals' perspective and the external collaborators' perspectives are probably both pointing to important aspects of a total picture in this field.

The report gives accounts of basic funding problems, but it also points to weaknesses in the use of existing competence and capacity in Malawian institutions. It suggests that there are clear potentials to mobilise and utilise human resources in more productive ways; that there are potentials for establishing new linkages, for establishing and formalising more effective collaboration, and for producing valuable synergy effects both at the institutional level and in the field. Mobilising these resources not only require (additional) economic resources, but also improved competence and capacity at the institutional level.

The present situation regarding *inter-disciplinary and cross-institutional links* between key institutions in knowledge generation, training and extension in the fields of agriculture and natural resources management in Malawi is brought up, including the links between the "traditional" institutions in agricultural and natural resource management research and training, such as Bunda College, and institutions responsible for research and education in the social sciences, such as Chancellor College. The potentials for creating inter-disciplinary synergy effects actually become more relevant with the present initiatives to follow up international trends in participatory-oriented and demand-based approaches, both in agricultural research, in implementing rural development strategies, and in natural resources management.

The effect and impacts of *extension services* as these have usually been provided to rural people in Sub-Saharan Africa, have over the last years been widely debated. The so-called "traditional top-down approach" is subject to criticism, not only in Malawi, but worldwide. At the international arena new and more *participatory approaches* are being tried out, and *demand-oriented approaches* are increasingly called for, not only in the dissemination but also in the production of science-based knowledge on agriculture and natural resource management. Even if Malawi has not been in the forefront of these developments, there are at present several indications of moves in a new direction. The report describes some radical changes in the policy and organisational structures of the departments of both Agricultural Research Services and Agricultural Extension Services under the Ministry of Agriculture, Irrigation and Food Security. The further concretisation and implementation of these initiatives will bring with them considerable challenges, not only for the institutions involved but also for the institutions with a national mandate to provide training for professionals who can work with farmers in the districts.

In this context, the proposed Bunda College Development Programme (2004) can have an important role to play in strengthening new and recently emerging initiatives towards more demand-driven and participatory approaches in research and extension. The Programme has been developed as an operational training, applied research and outreach programme, aiming to improve food security and reduce poverty among smallholder farmers in Malawi. It represents a shift in orientation on the part of BCA towards more demand-driven research, using more participatory approaches, and involving a much wider range of external partners and stakeholders than what has formerly been practiced. To what extent this programme will

succeed depends, among other things, on improved communication and improved linkages between various stakeholders, both among the Malawian institutions themselves, and between these institutions and their external partners. The present report can hopefully be one contribution towards this goal.

## 1. ESTABLISHMENT OF BUNDA COLLEGE OF AGRICULTURE AS A BASIC INSTITUTION IN AGRICULTURAL TRAINING AND RESEARCH IN MALAWI

*Bunda College of Agriculture (BCA)* is at present one of the five constituent colleges of the *University of Malawi*. The other four colleges are *Chancellor College* (with faculties of Humanities, Education, Law, Science, and Social Science), the *College of Medicine*, *Kamuzu College of Nursing*, and the *Polytechnic* (with faculties of Applied Sciences, Education and Media Studies, Commerce, and Engineering). The University of Malawi college campuses are located in or close to the three main cities in central and southern Malawi. BCA and Kamuzu College are located in the Lilongwe area, the College of Medicine and the Polytechnic are located in Blantyre, whereas Chancellor College is located in Zomba, together with the University Central Office – which is also the office of the Vice Chancellor.

The College of Agriculture was first established in 1966. In 1967 the College moved to Bunda, and from that year on became a constituent college within the University of Malawi. The establishment of the College at the former Bunda estate, possessing at the time a total of 2.000 ha of agricultural land, was strongly promoted by the first President of Malawi, Kamuzu Banda. The location was no doubt chosen with reference to the fertile lands and productive capacity of the Bunda agricultural estate. The role of Bunda and Bunda Mountain in Chewa mythology and the agricultural (rain) rituals associated with the mountain were, however, also among the motivating factors for choosing this particular location for the new College of Agriculture shortly after the independence of Malawi within the British Commonwealth in 1964.<sup>1</sup>

In 1974 several of the other faculties forming the University of Malawi (education, public administration, law) moved to Zomba, along with the central administration of the University. A couple of years after, President Kamuzu Banda made himself President of Malawi for life. In this period, both academic staff and university students became subject to extensive control and surveillance measures, which formed an integral part of Kamuzu Banda's authoritarian and paternalistic regime (Kerr & Mapanje 2002).<sup>2</sup>

With democratisation in the 1990s, the new government elected in 1994 proceeded to support the establishment of a private university in the northern region of Malawi. In the end of the 1990s, in addition to the public University of Malawi, *Mzuzu University* was created. This initiative has, among other things, been seen as a political move to create a better regional balance, both with regard to the priority given to the central (Chichewa-speaking) region

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<sup>1</sup> It is claimed that “the fact Bunda College of Agriculture was built right next to the shrine was partly so that the shrine could lend the new post-colonial project [of science-based training in agriculture] a certain traditional aura” (Probst 2002:183). At present Bunda Mountain is above all a local landmark, while the rituals associated with the Chewa *chisumphu* rain cult are little known among students and staff at the College. An article published in *Journal of Southern African Studies* in 2002 identifies the local Chief Chilowa as the contemporary ‘keeper’ of the rain shrine at Bunda (Probst 2002). According to the article, an annual burning ceremony on the mountain still takes place, while “[t]he *mfunde*, the rain calling ritual that used to be carried out in February in times of drought or excessive rain, has been given up.” (Probst 2002:183). According to the same article, the establishment of Bunda College next to the rain shrine can be interpreted as “a calculated symbolic gesture” serving “the purpose of imbuing [President] Banda with chiefly attributes that underlined his status as ... a leader who stands both inside and outside of ‘tradition’.” (Probst 2002:192).

<sup>2</sup> One of the first principals of Bunda College, the American professor Theodore Pinney, was also one of the first academics to be deported, after protesting against the use of political detentions and torture under Banda's regime.

under the Kamuzu Banda regime, and the fact the new President, Bakilli Muluzi, was from the southern region (Kerr & Mapanje 2002).

## **1.1. CONSTRUCTION PERIODS AND COLLABORATING PARTNERS FROM 1960S TO 1980S**

From the 1960s onwards it was first and foremost USAID, in addition to the British Government, that came in with external support to the construction of the first buildings at Bunda. The first construction works included library, houses for staff, and hostels for male, and female, students.

With regard to external partners in the field of institutional collaboration, already in 1969 a collaborative link was established with the University of Wales in Aberystwyth, UK, providing secondment of teaching staff to Bunda, while Malawian students were trained at Aberystwyth. Some of the most senior staff at the College today were at that time students who benefited from this early UK *link for training*.

Similar links were established with universities in the US under the *University Linkages and Development Project*, with USAID financing scholarships for Malawians to study at universities in the US, in addition to paying for a number of American professors to fill teaching positions at Bunda until the newly trained staff returned to BCA. In the late 1970s, USAID also financed a new phase of infrastructure development at the College. The rapid development of Bunda College in the 1960s and 70s was furthermore based on substantial funding from the Malawian Government itself (University of Malawi 1999).

In the period 1978–1983, a FAO project provided support for further staffing, equipment, and a number of Masters and PhD scholarships. During the 1980s, USAID also continued to support MSc and PhD candidates who took their degrees at American universities.

## **1.2. CONSTRUCTION WORKS, TEACHING AND COLLABORATION INITIATIVES SINCE THE 1990S**

In the late 1980s, GTZ entered the scene through support to the establishment of a Masters programme in Animal Science at Bunda. This was the first initiative to provide Masters-level training at BCA. It was set up as part of a more comprehensive plan to develop Masters programmes to respond to demand for higher education in specific areas in the region as a whole, under the administration of SADCC<sup>3</sup>. GTZ's original plan included four regional Masters programmes. An MSc programme in Crop science was located to Zambia, Agricultural economics to Zimbabwe, Land and water management to Tanzania, and Animal Science to Malawi.

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<sup>3</sup> SADCC (Southern African Development Co-ordination Conference) was established in 1980 by the Governments of Angola, Botswana, Lesotho, Malawi, Mozambique, Swaziland, Tanzania, Zambia and Zimbabwe. A major objective at the time was to reduce member state dependence on apartheid South Africa. As a result of the political development in the Republic of South Africa in the 1990s, SADCC was faced with the need to redefine its role. Already in 1992 it was transformed into SADC (Southern African Development Community), with development, economic growth and alleviation of poverty through regional integration, and achieving complementarity between national and regional strategies and programmes, being among its main objectives. Inadequate provision of resources and staffing by member states has, however, since the 1990s been at the root of SADC's recognised difficulties in following up objectives and producing substantial results (<http://www.sadc.int/history>).

GTZ's plan was that SADC would take on the institutional role of coordinating the four regional programmes, but since the 1990s SADCC/SADC has not in practice had the institutional capacity to fulfil such a role. Plans intended to follow up GTZ's original idea of developing further regional Masters programmes (e.g. in veterinary science) were presented at a regional meeting in Pretoria in 2001, but never taken further. At present the Department of Animal Science at Bunda is basically educating (a relatively limited number of) Malawian students, and its role as a regional competence centre has not been further developed.

In the 1990s, the Icelandic International Development Agency (ICEIDA) came in with support to building up new aquaculture teaching and learning facilities at Bunda. ICEIDA's involvement in Malawi started in 1989, and was primarily focussed on fisheries research and capacity building. Among the main objectives of these capacity-building initiatives was contributing to a more sustainable management of the fish resources in Lake Malawi<sup>4</sup>. A related objective has, however, been the development of aquaculture as a field of income generation in Malawi. At Bunda, ICEIDA was in the late 1990s joined by Japan International Cooperation Agency (JICA), which provided funding both for infrastructure and scholarships to support the development of a Department of Aquaculture and Fish Sciences at Bunda.

SADC on its part took the initiative to give Malawi a regional role as a focal point in capacity building for aquaculture, with the Department of Aquaculture and Fish Sciences at Bunda playing an important role in this regard. The regional role as focal point in aquaculture has been fulfilled to some extent, e.g. with regional scholarships financed by ICEIDA. Over the last years the different countries in the region have, however, preferred to channel resources to build up their own national capacity in the (potentially lucrative) field of aquaculture.

Funding for further infrastructure development at Bunda during the 1990s was provided by several donors. USAID in fact continued as a main source of financial support to BCA into the 1990s, financing a new building for the Centre for Agricultural Research and Development (CARD/APRU) and a new library. The World Bank came in with financial resources for building a hostel and training facilities for short courses at Bunda (at present called APATU), while the European Union funded a building to house the newly established department of Social Forestry.

During the 1990s, most departments at BCA developed their own MSc programmes. Over the last years the scope of activities and range of professional training at Bunda have in fact broadened considerably. At present, there are departments of Crop Science, Animal Science, and Agricultural Engineering, in addition to Home economics/Human nutrition and Rural Development under the Faculty of Agriculture at BCA. In 2003, training in Basic Sciences (such as mathematics, physics, biology, chemistry) was also singled out as the responsibility of a separate department. A Faculty of Environmental Sciences has been established with departments of Aquaculture and Fish Sciences, Natural Resource Management, and Forestry and Horticulture. In August 2004, Rural Development will be reorganised as a separate faculty, with departments of Agricultural Economics, Extension, and Agribusiness.

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<sup>4</sup> <http://www.iceida.is/page16.html>



### **1.3. THE ROLE OF NORAD SUPPORT TO BCA**

The Norwegian Agency for Development (NORAD) has provided support to Bunda College of Agriculture since 1998. The first phase of NORAD support involved relatively limited amounts of funds – NOK 5.6 million over a two-years period. Basically the support was aimed at funding the development of a 5-years strategic plan for BCA. On this basis a development plan for the College should be made, which in turn would be submitted to NORAD as a basis for further funding. In order to increase the intake of female students, the construction of a 60-bed female student hall of residence was financed, and further funding was provided for upgrading library material through purchase of books and subscription to relevant journals (BCA 2003). Finally, NORAD funded technical assistance in the form of a lecturer to the new Social Forestry Programme at BCA.<sup>5</sup>

NORAD support to Bunda College entered a second phase in June 2001, with the following goal formulation:

The Goal of the Programme is to improve the performance of Bunda College of Agriculture (BCA) in learning, teaching and research to enable the College to play a significant role in the development of the country and to attract other sources of funding for its development programme (Agreement 2001).

Phase 2 started out with a budget of NOK 35.7 million to finance the following outputs:

1. Organisational restructuring
2. Financial and administrative management improved
3. Revenue generation improved and facilities maintained
4. Priority teaching facilities improved
5. Teaching and research capacity improved in selected areas (BCA 2003:1-2)

The Mid-Term Review of Phase 2 prepared by an internal Task Force at Bunda College points out that the foreseen organisational restructuring was difficult to implement under the current structure of the University of Malawi (BCA 2003).<sup>6</sup> According to the Review, the improvement of financial and administrative management was in practice really problematic. To a considerable extent it seems to have stranded on lack of competence and capacity on the part of administrative/accounting personnel at Bunda (BCA 2003:9). With regard to revenue generation, the Review Report points to the need for an overall policy to be developed in order that significant improvements be made in this field. As to improved teaching facilities, most of the planned activities were carried out, electronic equipment and computers were procured, but the quality of the construction and maintenance work undertaken turned out to be far from adequate, and a lot of maintenance work needs to be redone already in 2004.<sup>7</sup>

Funding for the fifth output – improved teaching and research capacity – has to a large extent been used to support staff development through financing a total of 4 PhD's and 7 MSc's – fully or partly (BCA 2003:16).<sup>8</sup> NORAD funding has also been used for the upgrading of

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<sup>5</sup> The question of how this technical assistance should be monitored was not sufficiently clear to the parties involved, neither how corrective action could be taken, without BCA losing needed technical assistance.

<sup>6</sup> Revisions and reforms in this case would have to be carried out at the level of the University Central Office, which in turn would require extra resources for the University of Malawi. This issue has been addressed through the proposal for NORAD support to a new phase of development of Bunda College, submitted for funding in April 2004.

<sup>7</sup> A point which again brings up the monitoring issue.

<sup>8</sup> More details are provided in chapter 2.

library resources, and from 2002 the library has been able to (re)subscribe to 30 periodicals. However, the leadership at Bunda “realizes that research and outreach have been the weakest components” in the implementation of the NORAD-funded programme (BCA 2004:35). This realization forms the background for a motivation “to give these areas particular attention in the years to come” (op.cit.).

At this point it would be relevant to bring in and analyse in some detail, not only the outputs and results of NORAD support to BCA since the late 1990s, but also the wider context of NORAD’s involvement and BCA’s efforts and problems. From the brief historical overview given above, we see that from the establishment in the 1960s, both the Government of Malawi and USAID gave substantial support to the College. A number of other external donors and collaborators (especially institutions representing the former colonial power) during certain periods provided crucial but more specific support. However, USAID phased out its support in the late 1990s. In the same period, Government support decreases in real terms. It is at this time that NORAD first comes in as a donor.<sup>9</sup>

In this context it should also be remembered that Malawi played a special role both on the international and regional geopolitical scenes up to the 1990s. It is commonly accepted that in the 1960s and 1970s, President Kamuzu Banda’s “anti-Communist stance and his policy of dialogue with apartheid South Africa made him a strategic ally of the West at a time when several neighbouring nations were leaning toward China or the Soviet Union” (Kerr & Mapanje 2002:84). In this situation, both Malawi’s political relations with South Africa and the Governments rejection of Communism, “each led to large inflows of foreign aid” (Mundy 2002:15). Already from the beginning of the 1980s, however, the economic situation of the country resulted in structural adjustment loans from the World Bank and stabilization packages from IMF. The end of the Cold War in the 1990s, followed by the significant political changes that took place in South Africa and the end of civil war in Mozambique, resulted in practice in several major Western donors seeing less need to support Malawi under multi-party democracy than under President Kamuzu Banda’s dictatorial regime. Even if new donors entered the scene in the 1990s, support to Malawi by international donors continued under generally harsher economic conditions, involving increasingly explicit donor conditionalities.

It cannot be claimed that external donors support Malawi up to that point had been totally unconditional. Especially in the 1980s, the Malawi Government was put under pressure to carry out reforms, including reforms in the education sector. In the 1980s, the World Bank first took on the role as a driving force for educational reforms in Malawi. A World Bank report on *Education in Sub-Saharan Africa* (World Bank 1988) called attention to a series of fundamental problems in African education systems. In Malawi’s case a clear bias in Government budgets towards higher education was identified as one of the basic problems(!)<sup>10</sup>

Up to 1994, both primary and secondary school enrolment in Malawi was in fact among the lowest in sub-Saharan Africa (Mundy 2002:14). After the first multiparty elections in Malawi in 1994, however, free primary education for all was among the first announcements of the

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<sup>9</sup> Norway initiated bilateral development collaboration with Malawi in the 1990s.

<sup>10</sup> This lack of priority for primary education has, in fact, been seen as part of the educational policy of the Kamuzu Banda’s government. Primary-education was kept at a relatively low level in order to “constrain the economic expectations of the populace within the limits of the economy’s labour absorptive capacity and the government’s limited budget” (Mhone 1992 quoted in Kerr & Mapanje 2002:78).

new Government under President Muluzu. The following years external donors joined this initiative by providing funding to meet the enormous increase in demand for primary school infrastructure, teachers and teaching materials that was the Malawian people's response to the Government's declaration.<sup>11</sup> From 1997 onwards, however, new economic problems – in part due to declining export prices on tobacco – resulted in the World Bank and IMF imposing public expenditure cuts, which also affected the education sector (Mundy 2002:33). At the same time, the political parties considered it to be necessary to include universal secondary education in their election programmes – in order to get (re-)elected. However:

The idea of expanding higher levels of education at a time when it was clear that the needs of the primary level had not been satisfied caused considerable concern among donors. USAID in particular was adamant that the government and the Ministry of Education needed to make “hard choices” about which kinds of educational policies to support. (Mundy 2002:32).

USAID had since the late 1980s sought to follow up a special “congressionally mandated focus on ... basic education” (Mundy 2002:13). The quoted paragraph clearly indicates that in Malawi, major external donors' (including USAID) policies in 1990s did not favour strengthening tertiary education and tertiary training institutions – such as Bunda College. When NORAD signed the first agreement concerning support to BCA in 1998, it meant – in practice – that NORAD entered the scene as an upcoming major external donor. This was a role that USAID had performed since the establishment of the College in the 1960s, and a role that few other donors in Malawi were willing or able to assume in the late 1990s and early 2000s. At this point we may, however, raise the question as to what extent NORAD (and Norwegian development cooperation more generally) has actually been ready to assume such a role of ‘major donor’ in the field of higher education in agriculture and agricultural research in Malawi.

#### **1.4. MULTI-DEPARTMENT RESEARCH AND RESEARCH COLLABORATION AT BCA**

In the field of research and research collaboration, a research and training project under a long-term international *Bean/Cowpea Collaborative Research Program* has, since it first started up in 1980, played a substantial role in the development of competence in the fields of crop science, nutrition and extension at BCA. The programme is motivated by the fact that beans and cowpeas are important sources of carbohydrates and proteins in the diets of both subsistence farmers and urban poor, across the globe. Considering that beans and cowpeas provide a good alternative for consumers who cannot afford animal protein, the programme seeks to develop untapped potentials both with regard to cultivation, processing and consumption of beans and cowpeas in countries like Malawi.<sup>12</sup>

Under the US-based international Collaborative Research Program, BCA is involved in a regional project for East and Southern Africa, together with partner institutions in South Africa, Tanzania, Mozambique, in addition to the United States. This *Bean/Cowpea Project* for South and East Africa has provided a number of scholarships for both MSc and PhD candidates from BCA, who have graduated with specialisations related to bean production and consumption. The Project has primarily received funding from the US Government, in

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<sup>11</sup> By 2002, 81% of children age 6-13 in Malawi attend school, with equal percentages of male and female pupils (Malawi 2002:xiii).

<sup>12</sup> Cf. <http://www.isp.msu.edu/crsp/index>

addition to contributions from training and research institutions in the US and from the international agricultural research centres. The Bean/Cowpea Program as a whole is managed through a Management Office located at Michigan State University, and this University also plays a key academic and professional role in the Program through its Institute of International Agriculture.<sup>13</sup>

The present objectives of the regional Bean/Cowpea Project include:

- assessing markets for beans and cowpea grains and processed products
- enhancing the use of (consumer oriented) quality criteria in crop improvement programmes
- development of technologies and assessment of potential uses of beans and cowpeas to combat malnutrition
- improving soil and water management in order to intensify bean/cowpea production in the dry season
- seed multiplication and dissemination
- development of bean cultivars with enhanced resistance to diseases and insects<sup>14</sup>

Since 1992 a Rockefeller Foundation-funded programme called *Forum on Agricultural Resource Husbandry* (or FORUM) has supported research and training, especially targeting Masters students in a number of Universities in East Africa – in Uganda, Kenya, Malawi, Zimbabwe, and Mozambique. The programme has over the last years played a significant role in encouraging proposals and improving the quality of Master students' projects at BCA, by providing small grants to faculty members who apply for funding for research projects that involve scholarships for Masters students. Priority has been given to projects aiming to provide relevant information on smallholder food production systems, with a preference for projects conducted on-farm, drawing upon interdisciplinary and participatory approaches.

Close to 30 MSc students from the Departments of Crop Science and Rural Development at BCA have benefited both from grants and from practical support to students' research work provided through the FORUM programme (FORUM 2002). The programme has organised a number of regional workshops, where research proposals, and later on findings, have been presented and discussed. This initiative has been seen as useful both by students and staff. Bunda staff have also benefited from the programme through the opportunities provided for lecturers to get involved in projects that result in publications – since publications play a crucial role in individual staff's careers and advancement within an academic institution like BCA.

The FORUM programme has its coordination function located at Makerere University in Uganda. At present the whole programme is going through a phase of restructuring, aiming to leave the administration to the regional stakeholders – which in this case means the Universities and University Departments in East Africa that have been involved in the programme. The Rockefeller Foundation wants to withdraw to the role of one (among several) donors, hoping that more donors will join the programme after restructuring.

Finally, a new multi-disciplinary and multi-institutional project funded by NUFU (Norway) should also be mentioned. This project focuses research and intervention activities to the Lungwena area in the District of Mangochi, east of Lake Malawi. Lungwena is the target area

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<sup>13</sup> Cf. <http://www.isp.msu.edu/crsp>; see also chapter 2.1.3 in this report.

<sup>14</sup> <http://www.isp.msu.edu/crsp/eastobjectives>

of one of 9 public health centres in Mangochi District, covering 26 villages with a population of about 20.000. The Lungwena area is characterised by complex problems both as regards health and livelihoods.

In the period 1992 – 2000, the Government of Malawi and the Mannerheim League of Child Welfare of Finland were collaborating in a project, both in running the Lungwena Health Centre and in carrying out research and community-based training for health workers in the locality. The objectives of this collaboration project included using the Lungwena Health Centre as an experimental site for the provision of comprehensive primary health care services to rural communities, and thereby contributing to improved health of the local population. However, an Internal Evaluation reports on a “slow rate of progress in reducing childhood mortality and [improving] other important health indicators, despite remarkable achievements in preventive services” (Jitta 2000:4).

A broader approach to health and poverty problems seemed necessary in Lungwena, and resulted in the development of the multi-disciplinary and multi-sector research project called *Lungwena health, nutrition and agricultural multidisciplinary project – Towards poverty reduction*. NUFU (Norway) provided funding for this project from 2003, with an (initial) project period of 4 years.<sup>15</sup> The total funding to be provided by NUFU amounts to 4.250.000 NOK over four years.<sup>16</sup> The College of Medicine, University of Malawi, plays the role as project coordinator for the NUFU project in Malawi, while the Department of Community Medicine, University of Oslo, has the coordinating role on the Norwegian side. In Malawi, Bunda College of Agriculture, together with Chancellor College, Kamuzu College of Nursing, and the Polytechnic are all involved as institutional network partners in the project.

The Lungwena NUFU project aims to address the complex problems of poverty, food insecurity and ill health through a multidisciplinary approach, seeking to identify and introduce agricultural practices that can contribute to improved food security, more secure livelihoods and improved health in the Lungwena area. At BCA several departments are or are planning to be involved in the project. The coordinating role is located to (the current department of) Rural Development, involving both the Extension and the Economics sections. Furthermore, the departments of Crop Science, Home Economics/Human Nutrition, Animal Science, Fish Sciences and Aquaculture are planning to be involved, first in a baseline study to be carried out in 2004, and later through more specific and disciplinary-based surveys and field studies, accompanied by targeted interventions in the form of introducing e.g. new crop varieties, fish ponds or milking goats.

The multi-disciplinary NUFU project no doubt requires professional contacts and collaboration, not only between departments but also between the different colleges of the University of Malawi, and in this regard represents a novelty in the Malawian context. The interest raised by the project may perhaps be motivated by this interdisciplinary character, providing an opportunity for collaborative efforts focussed on the multiple challenges facing the population in one specific locality. However, when taking into consideration not only the multiple partners involved, but also the various expectations to carry out research under the umbrella of this project, it is clearly under-funded. This may result in limited amounts of time being allocated to the project by senior researchers, both on the Malawian and Norwegian sides, which in turn may have consequences for the quality of the research outputs. On the

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<sup>15</sup> <http://fm.siu.no/NufuProjects/projsearch.htm> - see Malawi.

<sup>16</sup> Amounting to approximately USD 612.000, using current exchange rates as of March 2004.

other hand, the NUFU Lungwena project could also act as a catalyst for further research initiatives and open up for new opportunities for funding research and research collaboration.

It is under this “research and research collaboration” heading that a third phase of Norwegian support to BCA at present (2004) is being planned. Especially from the Norwegian side, the principal objective of a continued support has been the strengthening of research activities, research collaboration, research relevance, and outreach activities, and the NORAD-funded Tanzanian Agricultural Research Programme (TARP II) coordinated by Sokoine University of Agriculture has been drawn upon as a model. From the perspective of BCA there are, however, still considerable needs in the areas of institution building and improvement of teaching and teaching facilities that, based on a day-to-day experience of problems and challenges, may seem even more urgent.

The present proposal has the form of a development programme for the whole institution, *Bunda College Development Programme* (BCA 2004). It is based on the strategic plan developed during the first phase of NORAD support (see chapter 1.3 above), pointing out a series of challenges to be addressed, such as:

- Inadequate funding
- Lack of administrative competency
- Needs to restructure and decentralize functions within the University of Malawi
- Inadequate number of well-trained staff
- Declining learning, teaching and research facilities
- Weak interdisciplinary- and cross-institutional linkages in knowledge generation, training and extension the fields of agriculture and natural resources management

Two key outputs in the proposed Bunda College Development Programme are:

- 1) High quality demand-driven research for the development of interventions and technologies that increase sustainable production, utilization of and access to food as well as natural resources management in Malawi conducted.
- 2) Farmer-Research-Extension linkages facilitated and strengthened.

This proposal is at the time of writing being considered by NORAD for funding. In the implementation of the proposed Development Programme, the Programme Office set up at Bunda to monitor the first two phases of NORAD support, will according to the plans have a much more active role in research promotion and facilitation.

## **1.5. PRESENT ACHIEVEMENTS AND FUTURE CHALLENGES**

With regard to training, over the last few years Bunda College of Agriculture and the College of Medicine are the two education institutions within the University of Malawi that have in practice managed to adhere to the academic calendar. That is, these two colleges are the ones that have provided continuous training for students, without closing down during periods because of lack of resources or funding. The present Principal at BCA has made considerable efforts to keep the institution open in order that students graduate on time without interruptions, believing that this priority accomplishment will over time strengthen BCA’s reputation as a serious academic institution.

With regard to achievements, another positive factor to be mentioned in an analysis of BCA’s long-term development and resource allocations is that the College has seen relatively low

levels of staff moving to greener pastures (in terms of salaries).<sup>17</sup> That is, after completing higher-level degrees through staff development programmes, Bunda staff has usually continued to work at the College. It can also be argued that the opportunity to get a scholarship through staff development programmes is an important factor motivating young professionals to seek employment at BCA. On the other hand, so far it has been difficult to recruit new staff with already completed PhDs to the College.

The brief historical overview presented in this chapter indicates a certain “periodic” tendency in external funding and development at BCA. This has resulted in a somewhat “uneven” capacity development at the institution as a whole. At present we find that some of the “older” departments and professions (such as Animal Science) have a relatively high number of staff with PhDs, while some of the “younger” departments/professions (such as Natural Resources Management) have younger staff and less staff with PhD qualifications.<sup>18</sup> Most departments still have staff on study leave to complete both Masters and PhD degrees abroad within the framework of (externally funded) staff development programmes. A new tendency that has been strengthened over the last years is that South–South links with South Africa, Thailand and Japan have come up as alternatives to Britain (or Europe) and the US for post-graduate training abroad. This trend can create new – and potentially – productive links for the future.<sup>19</sup>

A question that should be raised at present concerns the sustainability and further development potentials of the fairly diversified structure of BCA as a training and research institution in the field of agriculture and natural resource management. Is there still room for further development of new Masters programmes and a further diversification of courses within the established programmes in order to increase students’ choices? That is, given the limited funding available at present.

Now Bunda College of Agriculture counts on a professional staff of around 100, if the professional staff of APRU (6 professionals) is not included.<sup>20</sup> With a total number of students reaching 654 in the spring term of 2004, the teacher/student ratio for the College as a whole is 1:6.5.<sup>21</sup> These numbers, somehow, bring up the issue of cost-effectiveness of education at BCA. Efforts to increase the total number of students appear relevant. In this context it is, however, also important to look at the relationship between the actual capacity both of staff and infrastructure facilities in relation to the number of students at Bunda. On this basis it would be possible identify an optimal staff/student/facilities-level at which BCA, given the present level of funding, should aim to consolidate its activities.

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<sup>17</sup> A lecturer with an MSc degree will start with a monthly salary at about USD 300. This is less than a graduate from BCA will earn if employed e.g. by an NGO in Malawi. A professor will start at the level of USD 400, and may earn up to USD 500 per month. For most of the staff at BCA the salaries they receive do not cover the economic costs of their social responsibilities, and they try to get (well paid) consultancies whenever these are available to supplement their incomes.

<sup>18</sup> Cf. table 2.1 in chapter 2.

<sup>19</sup> For more details see chapter 2.

<sup>20</sup> The total number of people employed at Bunda, including professional staff, administration, maintenance, support staff, security staff, the Bunda farm and APRU/APATU staff, amounts to close to 440.

<sup>21</sup> The teacher/student (pupil) ratio in primary schools in Malawi was in 1997 reported to be at the level of 1:59. Since then the number of teachers in relation to students has further decreased.

Chapter 2 (below) will give more exact information on the number of staff with PhD qualifications in each of the departments at BCA. It will also give more detailed and fairly updated information on the teacher/student ratio in the different departments.<sup>22</sup>

At the institutional level, some of the crucial questions at present are: When is it that Bunda College will reach a sustainable level of knowledge generation and dissemination *and* staff reproduction – both with regard to MSc and PhD candidates? What would in the present context be a realistic and fruitful combination of *international links* for training and *self-sufficiency* in the production of new generations of professionals? Should for instance so-called “sandwich-models” in post-graduate training be introduced and used more systematically by BCA in collaboration with external partners?

More general and far-ranging questions concern: What are the necessary conditions for BCA to emancipate from a situation of non-optimal economic uncertainty and institutional dependency? How can BCA strengthen its role as a key institution contributing to social and economic development in Malawi given present and foreseeable funding constraints?

One of the basic challenges to be addressed through the *Bunda College Development Programme* (BCA 2004) is inadequate funding (see chapter 1.4). Declining government funding is at present a problem BCA shares with many agricultural education and research institutions across the world. At the international level, not only financial problems, but a number of challenges associated with the present educational approaches and the (apparent) lack of relevance of research for farmers and communities have also been identified, pointing to the need for a transformation in agricultural higher education (SEMCIT 2004). Some of the challenges to be met in this regard are:

- Making agricultural education and research more responsible to the needs of rural populations
- Moving from an educational model based on knowledge transfer to a model emphasizing critical thinking, practical problem-orientation, and life-long learning
- Provide students with conceptual and practical skills needed to initiate and operate enterprises – e.g. create their own employment!

Chapter 2 of this report will provide more concrete information on the competence, professional capacity, and concrete challenges encountered in the main departments of BCA. This information is intended to give both an overall idea and some more detailed background information, not only for a discussion of achievements, shortcomings, and challenges at Bunda College of Agriculture at present, but also for a discussion of the role of BCA in the more comprehensive context of science-based knowledge generation and dissemination on agriculture and natural resource management in Malawi.

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<sup>22</sup> Different numbers are used and referred to by different documents and individuals. In this report I have relied on documentation provided in March 2004 by the Principal and the Registrar at BCA. Further I have compared these official numbers with the information provided at the level of each department.



## 2. BCA FACULTIES, DEPARTMENTS AND RESEARCH UNITS

Bunda College of Agriculture is at present composed of two faculties<sup>23</sup>. From the beginning there was the Faculty of Agriculture, while the Faculty of Environmental Sciences was established in 2001. From the autumn term of 2004 a Faculty of Rural Development will also be formally established. A separate Centre for Agricultural Research and Development (CARD) was set up in the 1980s as a structurally more independent unit within the College.<sup>24</sup>

BCA at present offers courses leading up to BSc degrees (4 years) and MSc degrees (+ 2 years). The total number of students at the College (in 2004) is 654; 168 of these are first-year students.<sup>25</sup> The first year students follow a common introductory programme. Specialisations are chosen from the 2<sup>nd</sup> year of the BSc programmes. In addition to the BSc and MSc students, altogether 4 Malawians are at present working on PhD theses to be submitted to the University of Malawi. These PhD students to a considerable extent, but not exclusively, count on BCA for professional support and academic supervision in their PhD work.

**Table 1.**  
**Professional competence and training capacity at BCA Departments<sup>26</sup>**

Department	Staff number	PhDs Staff (+Staff PhD cand.)	Students number BSc/MSc level	Staff/Stud.ratio
Agriculture Engineering	10-11	2 (+2)	90 BSc	1:9
Animal Science	9	6 (+1)	18 BSc (+4) MSc?	1:2
Crop Science	13	4 (+2)	42 BSc 11 MSc	1:4
Home Ec./Hum.Nutrition	12	3 (+2)	54 BSc	1:4,5
Rural Development	16	8	117 BSc/MSc	1:7,3
Aquaculture and Fisheries	11-13	1 (+3)	41 BSc 8 MSc	1:3,8
Nat.Resources Management	7-8	(1 on leave)	75 BSc	1:10,7
Forestry and Horticulture	9	1 (+2)	14 BSc	1:1,5

### 2.1. FACULTY OF AGRICULTURE

The **Faculty of Agriculture** is at present composed of 6 departments: Agriculture Engineering, Animal Science, Crop Science, Home Economics/Human nutrition, Language and Communication Skills, Rural Development, and Basic Sciences. Among these are the three departments that were first established at Bunda: Animal Science, Crop Science, and Rural Development. From the autumn 2004 the number of departments within the Faculty will be reduced to 5, with Rural Developed being established as a separate faculty.

<sup>23</sup> The data for the report were basically collected during the first half of 2004.

<sup>24</sup> More on CARD below. At present CARD has one functioning research unit, the Agricultural Policy Research Unit (APRU). In addition an Agricultural Policy Analysis Training Unit (APATU) was set up to be in charge of courses directed at a wider audience, but at present functions mainly as a hostel with a cafeteria/bar for College staff.

<sup>25</sup> BCA's strategic plan for the period 2000-2004 indicated the objective of reaching a student population of 700 by 2004. The present number of students amounts to 93% of this target number.

<sup>26</sup> The figures are mostly based on information dated March 2004.

### 2.1.1 The Department of Agriculture Engineering

Agricultural Engineering at Bunda is composed of three sections: Soil and Water, Agricultural Engineering, and Agricultural Processing. Each section offers training within its specialisation. The Department has a professional staff of 10/11 persons. There is one female staff member (at present on leave of absence). The total number of students is around 90, all at BSc level. The numbers given here indicate a teacher/student ratio in the department of approximately 1:9.

#### *Staff profile and training capacity in Agriculture Engineering*

Among the total staff in Agriculture Engineering 2 have completed PhDs, while 2 of the staff are at present on study leave (in the US) for PhD degrees<sup>27</sup>. Six of the staff have MSc degrees from universities abroad (UK, US, Thailand). One of the staff has an MSc completed in Malawi.<sup>28</sup> At present 2 of the staff are on a study leave to complete MSc degrees (in Belgium and Kenya). The Department has so far decided not to offer MSc courses.

The *Soil and Water Section* offers courses in environmental management and irrigation, focussing on the technological aspects of design, operation, testing of equipment, maintenance etc. Key issues are technical aspects of soil erosion and soil conservation, fertilization, land use and hydrological issues, in addition to flood and draught mitigation. This section is also the “parent” of the relatively young department of Natural Resources Management under the Faculty of Environmental Sciences, which is focussing more environmental management as such.

The *Agricultural Engineering Section* within the larger Department offers courses in mechanisation that aims at improved tilling, planting and harvesting tools. There is also a *Processing Section* with a focus on storage, food processing technologies – e.g. in oil pressing and juice production.

Within the Department there seems to be a professional potential to work with local adaptations of technical equipment, but funding is a critical factor in order that this potential can be more effectively used. At present no research has (external) funding in the Department.

#### *Outreach in Agricultural Engineering*

A number of courses have been offered in the districts. With the decentralisation of powers to District Assemblies currently taking place in Malawi, a demand has been created at district level for courses in field of environmental management such as flooding and draught mitigation, soil conservation, urban runoff management, wastewater management, and solid waste management. The Districts at present also have funding to pay for these courses.

### 2.1.2 The Department of Animal Science

Animal Science at Bunda has a staff of about 9 professionals, out of which 2 are women. Seven of the total staff are in practice working in the Department at present. The total number

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<sup>27</sup> At the moment some PhD scholarships (specifically in agriculture engineering) tend to be offered with a condition or bond attached, which means that after completing the degree the PhD graduate has to work for a certain number of years for the institution abroad. These requirements are problematic to combine with BCA's institutional interest to use such scholarships in programmes aiming at staff development at BCA, which means that staff studying abroad should come back to Malawi within reasonable time perspective.

<http://fm.siu.no/NufuProjects/projsearch.htm> - see Malawi.

<sup>28</sup> The Polytechnic in Blantyre offers MSc courses in Engineering.

of students is approximately 20 - 25. The current numbers of professional staff and students in Animal Science would give a teacher/student ratio of around 1:2,5.

### ***Staff profile and training capacity in Animal Science***

Among the total staff in Animal Science (9), 6 have actually completed PhDs – in the US, UK, and Germany. One of the staff is on the point of finishing a PhD degree abroad (partly with NORAD funding). The rest of the academic staff in the Department have Master degrees; 3 have finished their MSc degrees in Malawi, one has a MSc from the US.

Both the present and the former Principals of BCA have come from the Department of Animal Science; the former Principal is at present holding the position of Pro-Vice Chancellor of the University of Malawi. The Department has further provided the Programmes Office (former “NORAD Office”) at Bunda with a highly qualified Programmes Coordinator. The Department of Animal Science has also provided the newly established Department of Basic Sciences at Bunda with 2 of its staff holding PhD degrees. To replace these two, the Department has recently advertised two positions, but has found it difficult to recruit professionals with PhD degrees and research experience to fill the positions. All staff members with PhD degrees have obtained their degrees through staff development programs.

### ***Research and outreach in Animal Science***

A major research and outreach project called “The goats project” has been carried out by the Department, first starting up in 1986. The project official name describes its objectives: *Addressing Childhood Malnutrition, Health and Survival*. At first it operated with USAID funding through the University Linkages and Development Project, later it became a project under the American Liaison Office. It operated under various project managers, and ended in 2003. However, the Department is looking for funding to continue project activities.

The basic idea of the project was to try out a broader approach to the problem of child malnutrition through adding goat milk, but also soybean flour to rural children’s diet. Goats for the project (pure-bred goats) were purchased from South Africa, further breeding was carried out at Bunda, and milk-producing goats were in the first phase distributed to 40 farmers’ households in a village close to Bunda. The next phase expanded to include 40 households in another village. Later groups of 30/40 households were lent a male to produce new offspring. The basic project idea was that the first offspring of project goats should be given back to the project in order to be distributed to new households.

The idea has later been picked up and developed further by other project initiators, such as World Vision and CARE. Internationally the basic project concept is known as the “pass-on” or “Hafer project” concept, and it was first tried out in Malawi through the Department’s “Goats project”. To what extent it has become a sustainable success is difficult to assess, for lack of monitoring and follow-up.

### **2.1.3 The Department of Crop Science**

The Department has a staff of about 13 professionals; 2 of them are women. The number of students is at present altogether 53. 42 are studying for a BSc degree, while 11 are enrolled in the Department’s Masters programme. The current numbers of professional staff and students, including both BSc and MSc levels, give a teacher/student ratio of 1:4.

### ***Staff profile and training capacity in Crop Science***

Among the total academic staff of 13, 2 professionals are presently working abroad (with leave of absence), which in practice means that there are 11 professionals working in the Department. Of these 11, two are working on contract, while one is a Visiting Professor (from Egypt). Of the permanent staff, 4 have PhD degrees from the US, while 2 are on study leave to complete their PhD's. Two of the staff have MSc degrees from Malawi, while 2 have MSc degrees completed abroad (in the UK and New Zealand).

### ***Research and outreach in Crop Science***

The long-term *Bean Cowpea Project* has played an important role both for staff development and by way of providing opportunities for students' research work in the Department. The Bean Cowpea Project started up involving BCA in 1978, with Michigan University in the US as the key external partner, and money being channelled to the project from the US Ministry of Agriculture. During the last years the project in Malawi has also been linked up to the East of Southern Africa regional project, involving collaboration with universities in South Africa, Tanzania (SUA) and Mozambique.<sup>29</sup> Altogether 6 crop science professionals from Malawi have finished PhD degrees through this project; 3 of these are still working within the Department of Crop Science at Bunda.

*Breeding* to produce improved varieties has throughout been an element of the Bean Cowpea Project. There has also been a *Seed multiplication and dissemination* component in the project, where the Department of Rural Development at Bunda has been involved. *Impact studies* have also been carried out under the project. Later on the Bean Cowpea project has been extended to focus on the agricultural potentials and challenges associated with *dambo* agriculture – i.e. agriculture in riverbed and wetland areas – and a *Dambo utilization* component has been included in the project. Furthermore, a *Culinary/nutrition* component involving staff in the Home Economics/Human Nutrition Department at Bunda has been part of the project. This component has focussed specifically on food quality and the dietary utilization of beans.

At present, 3 of 6 students in the final year of the Crop Science Department's MSc programme carry out their research work under the Bean Cowpea Project.

Both Masters students in Crop Science and the Department itself have also benefited from the FORUM programme of the Rockefeller Foundation.<sup>30</sup> Together with the Bean Cowpea project, FORUM has played a crucial role for the department to have their Masters programme running. Most of the students from Bunda who have been involved in the FORUM programme have completed their MSc degrees at the Crop Science Department – i.e. close to 20 in total.

#### **2.1.4 The Department of Home Economics/Human Nutrition**

The Department has a staff totalling 12 professionals. Nine (or 75%) of the professional staff in this particular department are at present female. The Department has altogether 54 students, all at BSc level. It offers a BSc in Family Sciences, with 16 students enrolled at present, and a BSc in Nutrition and Food Science, with 38 students enrolled. The current numbers of professional staff and BSc-level students in the Department give a teacher/student ratio of approximately 1:4.5.

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<sup>29</sup> See chapter 1.4.

<sup>30</sup> See chapter 1.4.

**Staff profile and training capacity**

Among the total staff of 12 professionals, 4 work within the field of Home Economics, while roughly 4 staff work in nutrition, and 4 in food science. Within the Department, the education offered in **Home Economics** (Family Sciences) deal with issues related to rural social development and human development, focussing on problems facing the family and the household in a wider (ecological) context. The courses offered include Human development, Gender and development, Parent–child relationships, Family development, and Consumer and society, drawing on elements of psychology, sociology and basic economics. There are also courses in Household technology, Clothing and textiles, Family housing, in addition to courses focussing on methods in Family extension and Evaluation and family related programs.

The BSc offered in **Human Nutrition and Food Science** basically covers both the fields of nutrition and food science. *Nutrition* courses cover issues such as food composition (chemical structures), food sources, and metabolism. There are also courses in Human physiology, Assessment of nutrition status, Household food security, Nutrition and disease/HIV-AIDS. There are also more methods-oriented courses in Outreach, Assessment of nutrition status, and Planning. *Food Science* courses give information on food products, hygiene and preparation, industrial food processing and preservation, food service management (how food can be served at different types of occasions). The courses are to a limited degree practically oriented, and the Department lacks infrastructure for experience-based learning, but students are sometimes taken to visit e.g. processing industries. They furthermore have a practical attachment period outside the College, usually in public extension service offices, and are finally expected to prepare and carry out their own more practically oriented projects in the 3<sup>rd</sup> and 4<sup>th</sup> year – e.g. focussing on developing food products.

Among the total staff of 12, 3 have completed PhD degrees. One of these is at present in the position of *Dean of Students*, with responsibilities relating to the different aspects of students' academic and social life at Bunda. However, 2 of the staff employed at the department are at present on study leave to complete their PhD degrees (in South Africa), one funded through the Bean Cowpea Project, and one with NORAD funding through the institutional collaboration with NLH.

Of the remaining staff in the Department, 2 have completed Masters degrees, one with an MSc degree completed in Malawi and one with an MSc in Applied Microbiology from Botswana. At present 2 of the staff are on study leave to complete MSc degrees in South Africa/University of Pretoria (one of these with NORAD funding, one with funding from Germany). Four of the Department's staff have Bachelors degrees completed in Malawi, either at BCA or at Chancellor College.

The Department has developed a Masters Programme Human Nutrition and Food Science. At present this programme is not running for lack of qualified staff and sponsorship. However, when the staff members who are at present on leave return to the Department after finalising their degrees, the personnel situation should improve.

### ***Research and outreach in Human Nutrition and Food Science***

The Department has been involved in the *Bean Cowpea Project*, focussing specifically on the food quality and nutritional aspects of beans. Through this project the Department has been collaborating with US institutions, in addition to cross-departmental links within BCA itself. The Department has also been involved in the “Goats project” *Addressing Childhood Malnutrition, Health and Survival* together with the Department of Animal Science.

Furthermore the Department has had a UNICEF-funded project monitoring existing micronutrient programmes in Malawi that implement supplementation of vitamin A, iron, and salt iodisation, in addition monitoring programmes concerned with dietary diversification in general. A survey was carried out in 2003 with results being published in 2004.

The Department is also planning to be involved in the NUFU-funded multi-disciplinary and multi-institution Lungwena project, in collaboration with professional counterparts at NLH in Norway, other departments at BCA, and other colleges under the University of Malawi.<sup>31</sup> In order to develop further the research capacity in the Department, both in food science and nutrition, it would probably be necessary to establish and furnish laboratories with equipment for carrying out basic analyses.

### **2.1.5. The Department – becoming Faculty – of Rural Development**

The Department of Rural Development has at present a staff of about 16 professionals, 2 of these are women. At present 2 of the permanent staff are on leave of absence. The Department has for a number of years offered BSc degrees in Agricultural Extension and in Agricultural Economics. From 2003 a BSc in Agribusiness was started (with 11 second-year students at present). The total number of students is now 117; of these 37 are students in Agricultural Extension and 69 are students in Agricultural Economics.

From the August 2004, the Department will be transformed into a separate Faculty of Rural Development. The Department also offers Masters Degree Programmes in Agricultural Economics and in Rural Development and Extension. Since Agribusiness has only just started up, the number of students here is expected to grow. The BSc specialisations offered by the Department (especially Agribusiness) are at present in high demand among Bunda undergraduates, and the number of students in this department could have been considerably larger if all students had been admitted to specialise in their first priority for a BSc. There is also a plan to offer a MSc in Agribusiness. The current numbers of professional staff in relation to the total of BSc-level and MSc-level students in Rural Development gives a teacher/student ratio of 1:7.3.

### ***Staff profile and training capacity in Rural Development***

The Department's 16 professionals are employed in 3 sections: Extension, Economics, and Agribusiness sections. At present 8 of the staff in economics and extension have completed PhD degrees (from the UK, US, Canada, Australia, France and Austria). Of the remaining staff, 6 have Masters degrees and 2 have Bachelor degrees. Two of the MSc degrees were completed abroad (in the UK), the rest of the MSc degrees were completed in Malawi. *Agribusiness* was established as a separate section within the Department in 2003. Among its present staff 4 have MSc degrees and 2 staff have BSc degrees.

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<sup>31</sup> See 1.4.

There are negotiations with the Sasakawa Foundation to fund a special programme for upgrading of staff presently employed by the Ministry of Agriculture through the *Sasakawa Extension Programme*. The objective would be that Ministry staff get the opportunity to complete BSc degrees at Bunda. The Department of Rural Development is at present working out a proposal, and hope to get several donors to contribute to this initiative.

### ***Research and outreach in Rural Development***

Both staff and students have over the years been involved in research collaboration activities with the University of Wales (in Aberystwyth). In the 1990s, a number of MSc degrees were produced with the support of a collaborative agreement with IFPRI (International Food Policy Research Institute). Later the department has been involved in the FORUM project, and MSc students in Rural Development have participated in the regional workshops organised under this project.<sup>32</sup> Furthermore the Department has been involved in a gender and health programme, financed by UNFPA, together with the Department of Sociology at Chancellor College. The most long-term research collaboration has, however, been the participation in the *Bean Cowpea* project (linked to Michigan State University), especially in the field of impact studies.

A published list of research activities in which staff members have been involved (Edriss ed. 2002) identifies among others the following research topics over the last ten years:

- Studies related to different types of bean cultivars – under the Bean Cowpea project
- Productivity and adoption of grain legumes
- Agro-biodiversity and indigenous knowledge – participatory plant breeding on sorghum and cowpeas
- Marketing studies of cassava and sweet potato
- Problems/conflict management related to access to and use of natural resources
- Dynamics of groundnut production
- Impact of HIV/AIDS on smallholder production
- Socio-economic analysis of fishing communities
- Studies of agricultural extension programmes – including gender analyses
- Studies on micro-credit and women's micro enterprises

The Department is at present involved in the NUFU-funded Lungwena Project, in collaboration with other departments at BCA, Norwegian counterparts from NLH, and other colleges under the University of Malawi (see chapter 1.4, above). The Coordinator for BCA's involvement in the Lungwena Project is Dr. C. Masangano, Associate Professor in Rural Development and Extension.

#### **2.1.6 Basic Sciences, Language and Development Communication**

**Basic Sciences** was formally set up as a separate department in 2003 with a staff of 4, largely drawn from Animal Science and Agricultural Engineering. Basic sciences are primarily taught the first (common) year of study in the BSc programmes at BCA, and include mathematics, physics, chemistry, and biology, in addition to 'communication skills' (English language) and computer application.

The present Department of **Language and Development Communication** has counted with a total staff of between 6 and 4 professionals. None of the staff in this Department at present has a PhD, while 4 have Masters of Arts or Masters of Education degrees completed in the

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<sup>32</sup> See 1.4.

UK and US. Two of the staff have had NORAD-funded scholarships to complete their degrees. A current proposal involves passing the English language teaching carried out under this department over to the new Department of Basic Sciences, and to merge the Development Communication component with the new Faculty of Rural Development.

## **2.2. FACULTY OF ENVIRONMENTAL SCIENCES**

The Faculty of Environmental Sciences at present has 3 departments: Aquaculture and Fish Sciences, Natural Resources Management, and Forestry and Horticulture.

### **2.2.1 The Department of Aquaculture and Fisheries Science**

The total number of staff at present counts 13 professionals, all male. There are altogether 49 students in the Department; 41 of these are BSc student, 8 are MSc students. The current numbers of total professional staff in relation to the total number of BSc-level and MSc-level students in Aquaculture and Fisheries Science give a teacher/student ratio of 1:3,8.

#### ***Staff profile and training capacity in Aquaculture and Fish Sciences***

The Department was established in 1999, with a staff of 6 professionals. The buildings of the Department of Aquaculture and Fisheries Science at Bunda campus are relatively new, and were financed with a special grant from the Government of Japan (JICA) in 1999. JICA also financed the construction of a fishponds establishment at Bunda. The original idea was that the Department should serve as a regional training centre in freshwater aquaculture for the SADC region. However, with donor money being phased out, few students from other SADC countries now come to study at Bunda. The other countries in the region have in practice shown that they prefer to establish their own national aquaculture training centres instead of relying on a regional centre. By 2004 the number of permanent staff has grown to 11 professionals (all male), plus 2 employed on contract (one retired Malawian with a PhD and one professional from Iceland).

One of the 11 permanent staff of Aquaculture and Fisheries Science has completed a PhD degree (in South Africa), while 3 of the staff at present are on study leave for PhD degrees (in Canada and Japan). Financing for several PhDs have been provided through a partnership project with the Memorial University of Newfoundland and through support from Iceland (ICEIDA). Of the remaining Malawian staff in the Department, 4 have completed MSc degrees abroad (in Thailand, South Africa, the Netherlands, and Norway), and one is on study leave for an MSc in Canada. At present only one of the staff has BSc as his highest degree.

#### ***Research and outreach in Aquaculture and Fisheries Science***

The Department is carrying out research on three issues related to *Tilapia* production. There is research in *breeding*, focussing on sex reversal of *Tilapia*. Research in fish *nutrition* focuses on the relation between protein levels in feed and water temperature. There is also research on *salinity*, concerning the levels of salt tolerance of *Tilapia*.

The Department at present plans to finance its own on-campus research through revenues from the fishponds establishment, which has recently been transformed into a Fish Farm. The permanent staff, with improved facilities available close to their offices, prefers to carry out most of their research in the tanks and laboratories that are available in the Department's building complex. BSc students do, however, still carry out their practical experiments in the fish ponds, which are located at a distance of a couple km's from the Department's buildings. The Fish Farm breeds *Tilapia* (*Oreochomis shiranus*) for sale to farmers. It also produces



Tilapia for sale, and this fish is actually in great demand among Bunda staff. The revenues should according to plans both cover the maintenance costs of the ponds, the costs of students' BSc research work, and payments for the workers employed at the Fish Farm.

The Department has links to a project of Pennsylvania State University located at Cape McClear in Lake Malawi. The objective of this project is the breeding of a local fish (*Trematocranus placadon*), which eats the snails that transmit *bilharzia*. Two outreach projects carried out by the Department are financed by CIDA. There is one project in Dowa, testing feed produced on-farm (maize bran and soya bean) as diet for fish in aquaculture. The Department itself funds assistance in fish farming to *two* farmers close to Bunda. The idea is that these farmers with time will serve as model farmers in aquaculture. At present Department staff is available – also on cellphone – for the two selected farmers when they have questions or problems. Recently the fish farmers have agreed to pay for fuel when Department staff come to visit them on request. This is so far the only example of trying out payment for extension services delivered by BCA.

The Department of Aquaculture and Fisheries Science has, with JICA support, published a periodical called *Aqua-Fish Technical Report*, and so far two issues have been printed (No. 1 in 2002, No. 2 in 2003). The ambition of the Department was originally to initiate the publication of a “Journal of Aquaculture and Fisheries Science”. The purpose of the present publications is “making known any scientific findings” in the field of aquaculture and fisheries “that are usually locked up in students’ thesis particularly in Malawi” (Likongwe 2002:1).

### **2.2.2 The Department of Natural Resources Management**

The Department counts with a total staff of 7/8 (all male). The permanent staff counts 6 professionals (one on leave of absence), 2 staff are on part time/contract basis. Altogether there are 75 BSc-level students in the department. The current number of professional staff in relation to the number of students give an approximate teacher/student ratio of 1:10,7 in the Department of Natural Resources Management.

#### ***Staff profile and education capacity in Natural Resources Management***

The Department was established in 2001, its “parent” department at Bunda being Agricultural Engineering. The Department was established to strengthen education with the objective of analysing and mitigate environmental degradation in Malawi. Environmental problems in the country are to a great extent perceived to be associated with agricultural activities, and this link has provided an important justification for establishing a department with specific programmes and courses focussing not only on natural resource management, but also on environmental problems related to agriculture. The Department has so far relatively limited physical space within the premises of Bunda College. However, a consultancy EIA (environmental impact assessment) that the Department carried out has been put in a separate trust fund to be used for a new building.

Of the present staff, one has a PhD (in rainwater harvesting) from Belgium (but is at present on leave of absence). The rest of the staff have MSc degrees (4 of these from the UK). Two are at present working on a contract/part time basis.

The Department has 75 students, all on BSc level. This gives a relatively high number of students per teacher compared to other departments at Bunda. 57 of the students are at present following the Environmental Science Degree Programme, while 18 are following the Natural

Resources Management Degree Programme. Both are interdisciplinary oriented programmes, with some of the degree courses given by other departments – such as Rural Development, while the Department also gives courses followed by students from other departments (e.g. environmental impact analysis). As a Department within Bunda College of Agriculture, the programmes specifically address environmental problems related to agriculture and degradation of natural resources. Graduates from the Department's programmes are expected to be qualified to address environmental degradation and resource management problems, as well as natural resources conservation challenges in Malawi.

### ***Research and outreach***

The Department of Natural Resources Management staff is at present not involved in any major research projects. This may in part be explained by the relatively recent establishment of the Department, and the fact that at present none of the staff (in office) has so far completed a PhD degree. However, the Department offers consultancy services in fields such as Environmental Impact Assessment (EIA), land use management and planning, watershed management, waste management, plant genetic resources, and policy analysis. On the basis of available staff competence, a document presenting the Department's competence fields has been distributed to potential users in Malawi, such as the Energy Department, the Water Board, and ESCOM.

### **2.2.3 The Department of Forestry and Horticulture**

The Department has a staff of 9 professionals, 3 of these are female professionals. The Department has developed BSc and MSc programmes in Horticulture, Social Forestry, and Agroforestry. The number of students is at present 14, all in horticulture. The Department has recently graduated 7 students in Social Forestry, but at present (spring term 2004) no students are following programmes in forestry at BCA. The author of the present report cannot account for the reasons behind this particular distribution of students.<sup>33</sup> Anyhow they may raise questions concerning the use of the professional capacity in the department, especially with regard to the professionals educated in Social Forestry and Agroforestry. The current numbers of professional staff in relation to number of students at the moment give an approximate teacher/student ratio of 1:1,5.

### ***Staff profile and education capacity in Forestry and Horticulture***

The Department was established in the late 1990s, in part with EU support and partly supported by NORAD funding. So far only one of the staff has a PhD degree. He is at present both Head of Department and Dean of the Faculty of Environmental Sciences. 2 of the staff have MSc degrees from the Netherlands (University of Wageningen), while 6 of the staff have completed MSc degrees in Malawi.

At present 2 of the staff are on study leave to complete PhD degrees; one is at present following a PhD programme in Japan, while one staff has funding from a NUFU-funded project<sup>34</sup> for a sandwich-model to complete a PhD, partly at Bunda and partly at NLH (Norway). The NUFU project also includes funding for a sandwich-model PhD (BCA/NLH) for one staff from the Ministry of Natural Resources and Environmental Affairs, and funding for two MSc scholarships.

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<sup>33</sup> In this context it should, however, be mentioned that the MSc programme in Social Forestry was supported by an EU-funded *Social Forestry: Training and Extension Project* (forming a small unit within the Department of Forestry of the Ministry of Natural Resources and Environmental Affairs) in the period 1997 – 2001.

<sup>34</sup> The project title is *Genetic diversity and rapid propagation of two important indigenous fruit trees in Malawi*. See next section for more information on this project.

At present there are 10 students (2<sup>nd</sup> year) following the BSc programme in Horticulture, and 4 students in the MSc programme in Horticulture in the Department.

### ***Research and outreach in Forestry and Horticulture***

Under the Department of Forestry and Horticulture several research projects are being carried out at present. A project on *Traditional Vegetables* was initiated by the present Head of Department (then in the Department of Crop Science) as early as 1982. The project started up with seed money from the International Foundation for Science (Sweden) and UNICEF, to carry out a survey on the use of traditional (indigenous varieties) of vegetables used in Malawi. In a second phase the project narrowed down to the 10 species of traditional vegetables that proved to be most widely used and preferred by farmers, and sought to develop improved agronomical practices for these selected species. At present, the project focuses on four species, and supplies seeds of these species from the project sites at BCA and at Bvumbwe Agricultural Research Station.<sup>35</sup> A number of NGOs, in addition to the Ministry of Agriculture, UNICEF, and FAO have shown interest in the seeds supplied by the project.

A research project in *Agroforestry* in the Department got some initial funding from ICRAF (International Centre for Research in Agroforestry). The project aimed to make a screening of species that can be used for fodder for livestock, and at the same time can be grown together with other crops. A project on *Mushroom production* starting in 2001 has aimed at developing low-cost technology (e.g. small houses/shelters) for production of mushrooms, and received initial seed money from UNDP. A considerable number of farmers (500) have been trained in production of mushrooms through this project, which also provided starter packs for mushroom production, and later backstopping assistance.

A research project on *Genetic diversity and rapid propagation of two important indigenous fruit trees in Malawi* is located in the Forestry/Horticulture department at BCA, but also involves a researcher from Crop Science. It has been funded by NUFU (Norway) for the period 2003 – 2006, with a total amount of NOK 2.878.095.<sup>36</sup> It involves the two departments at BCA together with Norwegian partners at NLH (the Department of Plant and Environmental Sciences) and the University of Oslo. The main objective of the project is to enhance the contribution of indigenous fruits to food and nutrition, focussing on two species, *Annona senegalensis* and *Uapaca kirkiana*. The project aims to develop suitable techniques for rapid propagation of the two species, since farmers' attempts at propagation so far have failed. Later farmers will be involved in domestication trials, with the final objective of assisting farmers to grow indigenous fruit trees that at present are rapidly disappearing. The project will also seek to identify indigenous knowledge associated with these fruit trees in Malawi.<sup>37</sup>

## **2.3. CARD AND THE AGRICULTURAL POLICY RESEARCH UNIT AT BCA**

The idea to create a separate Centre for Agricultural Research and Development (CARD) at Bunda first came up in the 1980s. Originally such a centre was perceived as an institution that could both develop agricultural technology and link up with organisations working specifically with technology dissemination. But economic resources to create such a centre did not materialize at the time. Then, in the late 1980s, the Ministry of Agriculture looked for

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<sup>35</sup> See also chapter 4.1.2.

<sup>36</sup> With the current exchange rate of March 2004, the NUFU funding for the project amounts to approximately USD 415.000.

<sup>37</sup> Cf. <http://fm.siu.no/NufuProjects/projsearch.htm> - see Malawi.

an agricultural policy research unit outside the Ministry, to provide the Ministry with research-based knowledge in this field. CARD at Bunda appeared as a relevant service provider for the Ministry in its capacity as a centre for agricultural research and development – until it became clear that CARD so far was only a concept. However, at this point USAID expressed its willingness to finance a policy research unit as a first element in building up a more comprehensive Centre for Agricultural Research and Development at Bunda. On this basis APRU – the Agricultural Policy Research Unit – became operational in 1994, and was supported by USAID during its first 4 years of existence. In 1998/99 USAID support to APRU was phased out, BCA took over the overall responsibility for Centre, and from that time the researchers employed at the unit passed over to the University payroll.

At present the staff of APRU consists of 6 researchers. One (the Director) is a rural sociologist, while the rest have their professional background in agricultural economics. 3 of the researchers have completed PhD degrees, while 2 are on study leave to get their PhDs. One active researcher has a background as MSc in agricultural economics from Malawi. At present (in 2004) 3 more researchers with MSc backgrounds in economics are being recruited to APRU.

#### **2.4. INFORMATION, COMMUNICATIONS AND KNOWLEDGE DISSEMINATION AT BCA**

Bunda College of Agriculture has a Library that is fairly well equipped and well run. Over time, however, the Library has had to operate with irregular funds for books and journals, which again has resulted in a somewhat “periodic” character of available stocks in different fields. At present it subscribes to a number of journals, including electronic journals, but the availability of the electronic information has been suffering from problems of connectivity affecting the Bunda campus as a whole. In fact, during the spring term of 2004, Bunda College experienced considerable problems with the operations of both internal and external communication systems. The College telephone system was only partly operational, requiring repair and maintenance for which no funds were available.

From various financial sources, including Phase II of NORAD funding, most of the professional staff at BCA has been provided with access to computers and – in principle – *Internet connections* and access to *electronic information*. However, the technical problems of connectivity have meant that in practice the staff have only been able to use these services during certain periods. There are, however, concrete plans to have this situation significantly improved. As a member of MALICO (Malawi Library and Information Consortium) the University of Malawi will have a VSAT<sup>38</sup> installed at the Bunda campus in the course of 2004.

The operation of the VSAT at Bunda should, according to plans, both provide for better use of available equipment and Internet facilities, improve the access to electronic information, and improve electronic communication both within BCA and between BCA and external partners. It will, however, be necessary to cover the expenses of the use of the VSAT connection – amounting to USD 1000–3000 per month – through user fees.<sup>39</sup>

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<sup>38</sup> VSAT refer to Very Small Aperture Terminal. These provide links to satellites, which transmit internet data between sites.

<sup>39</sup> This will probably apply primarily to users with some resources, such as (externally funded) research projects.

The Bunda College of Agriculture 2000–2004 Strategic Plan formulated a number of ‘strategic actions’ to be carried out during the 5-years period. These strategic actions included the activation of the Research and Publications Committee, and the revival of the *Bunda College Journal of Agricultural Research*. In former periods, the University of Malawi had counted on one centralised *Research and Publications Committee* with funding and power to support research proposals. Especially young researchers and new staff had benefited from seed money distributed by this Committee. At a later stage, the responsibilities of the Research and Publications Committee were decentralised to the College level. At the same time, the funding being allocated to research and publications went down. The Committee at Bunda ended up with so limited funds at its disposal that in practice it became non-operational.

With the funds allocated through Phase II of NORAD funding it was decided to prioritise the revival of the Bunda Journal. It was decided to change its name to *Bunda Journal of Agriculture, Environmental Science and Technology* to reflect better the whole range of scientific activities at Bunda. The inaugural issue of the new/renamed journal was published in April 2003. It was dedicated to the publication of research results from the long-term Bean/Cowpea Collaborative Research Project, focussing in particular on the common bean (*Phaseolus vulgaris*), with topics ranging from genetic diversity to farmers perceptions of seedborne diseases in beans and factors that influence farmers’ adoption of improved bean technologies.

Scientific publications play an important role in disseminating research results and disseminating science-based knowledge, and also play a significant role in communication between researchers and other professionals in all scientific fields. However, for dissemination of science-based knowledge to non-professionals (*extension*<sup>40</sup>) other methods and means of communication are required.

The effect and impacts of *extension services* as these have usually been provided to rural people in Sub-Saharan Africa, have over the last years been widely debated. What is often called “the traditional top-down approach” is now very much debated and often criticised, while new and more *participatory approaches* are being introduced and tried out (cf. Chambers, Pacey & Thrupp eds. 1989; Scoones & Thompson eds. 1994). So far, one can hardly claim that Bunda College of Agriculture has been at the forefront, either in discussing or promoting participatory or *demand-oriented approaches* in the dissemination of science-based knowledge on agriculture and natural resource management. However, there are at present several indications of moves in a new direction.<sup>41</sup>

The establishment of a new Faculty of Rural Development at BCA may create organisational conditions for a strengthening of cross-disciplinary and outreach-oriented approaches both in teaching and research at BCA. Furthermore, the proposed (2004) Bunda College Development Programme also presents a number of new initiatives. These initiatives include

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<sup>40</sup> *Extension* has traditionally been a key concept in any discussion of dissemination of science-based knowledge on *agriculture* to farmers, i.e. to the key non-professional stakeholders and practitioners. The basic idea is that through *extension* the dissemination of science-based knowledge will lead to *changes in productive practices* among farmers, resulting in more efficient production, higher productivity in agriculture, higher incomes for the farmers themselves, and thereby general improvements – or *modernisation* – of rural people’s livelihoods. Extension is thought of as a form of non-formal education, which transmits science-based knowledge from researchers to farmers and rural people more generally; usually through several levels of intermediary and frontline extension staff.

<sup>41</sup> See also chapter 4.

plans to cooperate more systematically with other national and international institutions working with research and outreach in agriculture and natural resource management. But they also include steps to involve groups of external stakeholders – such as representatives of Malawian farmers – in research planning and research activities.

### **3. OTHER TRAINING AND RESEARCH INSTITUTIONS IN NATURAL RESOURCES MANAGEMENT, EXTENSION AND RURAL DEVELOPMENT**

In this chapter, training activities of four Malawian higher education institutions in the fields of natural resources management, extension and rural development will be briefly presented, in order to complete and complement the picture given in previous chapters, which have focussed on the role of Bunda College of Agriculture. Activities carried out by the following six institutions will be very briefly presented here: *Natural Resources College (NRC)*, *Malawi College of Forestry and Wildlife*, part of the programmes offered by *Mzuzu University* and *Chancellor College* (University of Malawi) will be briefly referred to, and finally the *Forestry Research Institute of Malawi (FRIM)* and the *National Aquaculture Center (NAC)* at Domasi.

#### **3.1. NATURAL RESOURCES COLLEGE**

The Natural Resources College (NRC) is located on a former estate about 16 km west of Lilongwe. NRC has 160 ha of farmland available for students' use, research, demonstrations, and production. The College was established on this location in 1983/84 with assistance from CIDA (Canadian International Development Agency) with facilities for totally 680 students. Up to 1996 NRC served as a training institution run by the Ministry of Agriculture, with the primary objective of training extension frontline staff – e.g. field assistants that would be in charge of delivering extension services in rural areas. In this first phase of operations of NRC, Bunda College also offered Diploma courses in agriculture, preparing students (among other things) to work in the public extension services.

In 1996 Government funding for training of new extension staff at NRC ceased, and the Government decided to freeze further recruitment of extension staff in public institutions (NRC 2002, NRC 2003). At the same time, Bunda College phased out its training aimed at the Diploma level, counting on NRC to take over training of frontline extension staff, while BCA concentrated its training on BSc and MSc training programmes.

With no Government funding, in the period 1996-99 there was no activity at the NRC campus. In 1999 the Government decided to turn NRC into a semi-autonomous institution. Activities restarted at the NRC campus in 2000 with support from IFAD to set up a course in irrigation technology (with some technical assistance from BCA). DANIDA came in with general support to the process of transforming NRC from a public to a semi-autonomous institution. In 2001 the College was registered as a Public Trust run by a Board of Trustees.

At the same time DANIDA rather abruptly withdrew from development cooperation with Malawi. DANIDA's withdrawal made it essential for NRC to function as a self-financing institution, which covers running costs and maintenance of buildings through self-paying students. In practice this means that NRC students (or their employers) have to pay for the courses offered – in contrast to what is the case with e.g. the BSc programmes offered at

Bunda College. At present the student fees at NRC amount to 100.000 MKW (about 900 USD) per semester, including boarding.

The objectives of the Natural Resources College include providing “holistic, developmental and entrepreneurial training programmes aimed at upgrading the skills, knowledge and attitudes of professionals and front line staff for sustainable development” (NRC 2002:2). Furthermore the objectives point to providing “solutions to clients’ problems”, and to promoting “dissemination and adoption of appropriate technologies in integrated environmental and natural resources management” (NRC 2002:2).

The College offers 2 years Diploma courses in *Agriculture and Natural Resources Management* and Diploma courses in *Irrigation Technology*. The courses offered range from basic courses in e.g. mathematics, soil chemistry, hydrology, to more specialised courses in e.g. how to work with rural communities, in participatory techniques and tools, and agro-forestry, and in e.g. irrigation scheme management and irrigation system design. The courses are run as modules. This makes it possible to attract short-term students in addition to the Diploma students, for instance staff from the private sector or NGOs, who may be interested in short courses (of 1-2 weeks) ending up with a Certificate. The Diploma students are partly staff sent (and paid for) by the Ministry of Agriculture, with the aim of upgrading the training level of Ministry staff to (minimum) Diploma degrees.

At present NRC has 200 students and a permanent teaching staff of 7 full-time ‘*training consultants*’. 1 of the ‘training consultants’ has completed a MSc degree, and 6 have BSc degrees (in Agricultural Engineering, Animal Science, Rural Development, and Crop Science from BCA), in addition to practical experience in various fields. For a number of courses (e.g. statistics, survey methods etc.) NRC draw upon teachers hired from outside the College, including teachers from BCA. Counting only with the permanent staff, the teacher/student ratio at NRC is at present 1:28,6.

NRC has a library which is well organised, but it lacks funds for buying new books and subscribing to professional journals. Neither does the library have facilities for internet connection or electronic information. The ambitions of NRC include staff carrying out research and consultancies. With the current teacher/student ratio and the economic and professional resources available at present this ambition can hardly be followed up.

With facilities constructed for 680 students, the 200 full-time students at present only use part of the available space and facilities at NRC, and most of the infrastructure facilities are actually rented out for external courses and meetings. The future status of NRC is now under consideration in the Ministry of Agriculture, Irrigation and Food Security.

Several options have been discussed, one of these being a re-transformation of the College into a public training institution under the Ministry. The number of active extension workers in Malawi is now reported to be around 1500. In practice half of the positions in rural extension (in total 3000) are accordingly vacant. With present attrition rates (which also include the effects of AIDS) the need for training of new staff to fill vacant positions has increased considerably over the last years.

Another option that has been discussed is the possibility of integrating NRC and the teaching activities now carried out at NRC (as a faculty) within Bunda College of Agriculture.

### **3.2. MALAWI COLLEGE OF FORESTRY AND WILDLIFE**

The Malawi College of Forestry and Wildlife is located in Dedza (85 km south of Lilongwe). The primary objective of the College is to educate field staff in forestry extension. At present it offers a 1 year Certificate Course, and a Diploma Course lasting for 2 years. The number of students is at present around 15.

### **3.3. MZUZU UNIVERSITY FORESTRY PROGRAMME**

Mzuzu University was established in 1999 as a private university, aiming to serve in particular the northern region of Malawi. Within its Faculty of Environmental Sciences there is a Department of Forestry, which at present offers a BSc programme in Forestry (which according to present plans is a 3/4-years programme).

The Department of Forestry started up in 2001 with a 2-years programme in Forestry. The first intake aimed at students with a practical background in addition to a Diploma (e.g. from Malawi College of Forestry and Wildlife). Starting up with around 20 students in 2001, a total of 17 students from this first 2-years programme graduated in 2003.

The establishment of the Department of Forestry in Mzuzu was supported by the EU-funded *Social Forestry: Training and Extension Project* which was located to the Department of Forestry headquarters in the Ministry of Natural Resources and Environmental Affairs in the period 1997 – 2002. In the initial phase of the EU Social Forestry project, one of its formulated objectives was to contribute to and support the establishment of the MSc programme in Social Forestry at Bunda. However, in the final phase of the EU project, it was decided to channel technical and economic support from the EU project to the start-up of the Forestry programme to be established at Mzuzu University.

After the first batch of students who followed the 2-year programme in Mzuzu, the Department decided to expand the programme to a full BSc programme. In principle the programme consists of 4 years of study, but candidates with a diploma in forestry, agriculture or related subject can be admitted directly into the 2<sup>nd</sup> year, which in practice means that the Department runs a 3-years programme. External funding for the programme has now basically phased out. At present there are about 7 students enrolled in the BSc programme in Forestry at Mzuzu.<sup>42</sup>

### **3.4. CHANCELLOR COLLEGE**

Chancellor College is one of the constituent colleges of the University of Malawi. Together with the University of Malawi Central Office, the College is located in the former capital Zomba. The College has faculties of Humanities, Law, Science, and Social Science. Under the Faculty of Social Science we find the departments of Economics, History, Psychology, Political and Administrative Studies, and Sociology, in addition to the Centre for Social Research.

The present division of academic responsibilities between the colleges within the University of Malawi, implies that Chancellor College has been given the responsibility for university-level training and research in the social sciences. To what extent do we find inter-disciplinary

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<sup>42</sup> See chapter 3.5 on FRIM for a more general discussion on the organisation of competence and capacity concerning forestry in Malawi.



and cross-institutional links between key institutions in knowledge generation, training and extension in agriculture and natural resources management in Malawi, such as Bunda College, and Social Science departments at Chancellor College? This becomes an increasingly relevant question when taking into account current trends of drawing more upon social-science perspectives and approaches, and at the same time taking farmers' own knowledge and livelihood strategies more into account, both in rural development strategies and in natural resources management.

New trends in international development research and extension have during the last decade often been linked to the discussion and practical implementation of *Farmer First* perspectives (Chambers, Pacey & Thrupp eds. 1989, Scoones & Thompson eds. 1994). Key informants in the interviews carried out for this report hold that the *Farmer First* perspectives so far have not really reached Malawi. That is, such perspectives so far operate mostly at the rhetorical level. However, the present situation seems to demand – and professionals seem to be open for – a certain reorientation. No doubt such a shift will also require resources, since meeting with farmers require (at least some) travel, which together with more farmer-oriented research require funding.

However, these new and up-coming approaches also bring up the question to which extent the present disciplinary specialisation and division of labour between key knowledge institutions in Malawi has so far been combined with any inter-disciplinary 'cross-fertilization' between disciplines and institutions. A follow-up question will be what are the conditions for increasing 'cross-fertilization'?

So far, it appears that in the field of economics, there has to a certain extent been an inter-institutional exchange of staff and/or graduates from Chancellor College to Bunda College and *vice versa*. At present, one of the staff in the Department of Economics in Zomba has his MSc in Agricultural Economics from Bunda, and one of the staff in Economics in Zomba (with her PhD from Michigan State University) has formerly worked at Bunda. With the establishment of a BSc in Agribusiness at Bunda College, a new staff member has recently been recruited from the Department of Economics in Zomba. These contacts and interactions should, however, rather be seen as inter-institutional than as inter-disciplinary. We hardly find cases of 'cross-fertilization' that are both cross-institutional and inter-disciplinary – an exception is perhaps the present Director of CARD at Bunda, a rural sociologist who was earlier engaged at the Centre of Social Research at Chancellor College. But this is more of an exception confirming the ruling trend of very limited 'cross-fertilisation'.

This picture of few and weak cross-disciplinary linkages between the main knowledge institutions in agriculture and natural resource management and institutions dedicated to knowledge production and reproduction in the social sciences, points to a basic challenge, not only in Malawi but also in an international context. It seems necessary that present development initiatives in the field of agriculture and natural resource management research and extension also deal explicitly with this challenge of promoting productive inter-disciplinarity.

### **3.4.1 The Masters Programme in Environmental Science**

At Chancellor College, in the Faculty of (Natural) Science, the Department of Biology at present offers its own MSc programme in *Environmental Science*. The Faculty of Science has, in addition to the Department of Biology, departments of Chemistry, Geography and Earth Sciences, Home Economics, Mathematical Sciences, and Physics. BSc graduates from all

these departments can in principle be accepted for the interdisciplinary oriented Masters level programme in Environmental Science. The first batch of MSc students in Environmental Science graduated in 2001, the third batch graduated in 2003 – with a total of 18 students finalizing the course.

Being located at Chancellor College means that this interdisciplinary programme can draw on the wide range of academic resources available in Zomba. In practice, the programme primarily uses the resources within the Faculty of Sciences in general, and the Department of Biology more in particular. The inter-disciplinarity of the Environmental Science programme is thus firmly based in the natural sciences. So far there is little or no inter-faculty interaction and participation of the social sciences in this Masters programme. However, courses in environmental ethics and environmental law are included in the teaching programme of the MSc in Environmental Science in Zomba.

### **3.4.2. Relevant competence in the Political and Administrative Studies Department**

The Department of Political and Administrative Studies is one of the departments under the Faculty of Social Science at Chancellor College. The Department offers courses aiming to provide students with analytic concepts and skills that are useful in analysing policies and addressing current problems and challenges in public administration, public management, and the on-going democratization processes in Malawi and Africa in general.<sup>43</sup>

The Department offers BA programmes in Public Administration (currently with 15 students) and in Human Resource Management (with 40 students). Recently a Masters programme in Human Resource Management has also been developed (currently with 10 students).

The Department of Political and Administrative Studies has (in principle) a professional staff of about 11, but a considerable number of these are at present on study leave to complete MA and PhD degrees abroad (e.g. in South Africa, Germany, Australia).<sup>44</sup> Three of the staff have completed PhDs, but two of them are presently engaged on contract, which in practice means that permanent staff presence is more limited than the total number of employees may indicate.

The research carried out in the Department is basically the research project associated with students' degree programmes. The 3<sup>rd</sup> year of a 4-years BA programme includes a couple of months attachment with public institutions such as District Assemblies, District Administrations or even ADDs.<sup>45</sup> The research projects carried out have focussed on project operation, social impacts, and linkages between different levels, from the village, to the district and regional levels, up to the national level. At present the Department of Political and Administrative Studies is as such not involved in research projects. At Chancellor College the financial situation is, in fact, similar to the one at Bunda College, resulting in an appointed Research and Publications Committee at College level that does not have any funds to support research – even if it can approve research proposals.

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<sup>43</sup> Cf. <http://www.chanco.unima.mw/pas/index.htm>

<sup>44</sup> Two of the staff who are at present doing their MA degrees in South Africa, are supported by a NUFU project which involves collaboration between the Centre for Social Research at Chancellor College and CMI in Norway, including funding for scholarships for staff at Political and Administrative Studies. More under 3.4.4 (CSR).

<sup>45</sup> Agricultural Development Divisions

### **3.4.3. Relevant competence in the Department of Sociology**

The Department of Sociology is another of the five departments under the Faculty of Social Science at Chancellor College. Together with the other departments, Sociology offers a series of courses for students aiming at a (general) BA in Social Science. The number of students following the general faculty programme is at present around 70 in each year of the 4-years programme, which gives a total number of around 280 students in general social science at Bachelor level. There is no BA programme specific to Sociology at present. The sociology courses offered by the Department to BA-level students include Sociology of Development, presenting different theoretical approaches in the study of ‘development’; Agrarian Change and Rural Development, focussing on small farmers’ responses to programmes of planned change and agricultural development projects; and Research Methods in Sociology, covering various research methods used in sociology, as well as in social anthropology.<sup>46</sup>

The Department offers a Masters programme in Sociology of Health, with students in part sponsored by the TB (Tuberculosis) Equity Project under the Ministry of Health and Population in Malawi, in collaboration with Liverpool School of Tropical Medicine in the UK. Two students are at present working with their MA theses under this programme, while 3 recently finished their degree.

The professional staff in the Department of Sociology is 5 persons, with one staff member on study leave to finish a PhD in the US, while a North American sociologist at present is teaching in the Department on a voluntary basis. Three of the 4 Malawian staff present have completed PhDs in the UK or in the US, while one of the staff is working on her PhD thesis (on participatory approaches in development) in addition to the work as Head of Department.

The Department staff includes one senior staff member, Professor Kishindo, with a special interest and research experience on agriculture and natural resource management. Formerly the Department of Sociology staff also included a Professor with a PhD in social anthropology. However, after Malawi’s independence in 1964, higher-level training in social anthropology was not allowed by the Government.<sup>47</sup>

At present, Malawian researchers are collaborating with foreign social anthropologists (such as in the TB Equity Project mentioned above, or in the Bean/Cowpea Project at Bunda College), but no Malawian has been educated to work as a professional social anthropologist. Staff members in the Department of Sociology are at present involved in research projects on community-based land development and adaptive strategies of farmers to changing policies in

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<sup>46</sup> <http://www.chanco.unima.mw/sociology/index.htm>

<sup>47</sup> This ban on social anthropology was at the time explained with reference to the use of knowledge produced by social anthropologists by the colonial powers in order that people could be “effectively subdued”. This meant that a Malawian social anthropologist, Professor Kandawire at Chancellor College, who had been trained before the discipline became illegitimate, had to carry out his teaching and research under the name of “rural sociology”. Professor Kandawire died in 1995. In this context it may also be worth mentioning the observation that Malawian researchers seldom (if at all) carry out long-term professional fieldwork in rural communities. However, one of the Malawian researchers interviewed during the preparation of this report, sustained that anthropological approaches and methods may be necessary, precisely in order to come up with research findings showing that assumptions are not confirmed, e.g.: “This is not what is happening!” On the other hand, professional researchers who have worked their way up through the education system, may have done that precisely to “escape” from the villages and the abysmal poverty experiences by people in the rural areas of Malawi.

agriculture, and consultancies on food security and poverty, and on environmental problems (soil erosion and silting) resulting from farmers' cultivation of riverbeds.<sup>48</sup>

#### **3.4.4. The role of the Centre for Social Research at Chancellor College**

The Centre for Social Research (CSR) at Chancellor College is organised as a department within the Faculty of Social Science, which means that staff (like CARD staff at Bunda) are on the University payroll. The Centre has a Governing Board where, among others, the Department of Rural Development at Bunda College is represented.<sup>49</sup> CSR has a staff of 13 professionals; of which 3 have completed PhD degrees (in the UK, Canada, and Ireland). Six of the staff have MSc or MA degrees completed abroad (in the US, UK, and the Netherlands).

CSR has since 1997 worked within six defined priority research areas, which include Democracy and Governance, Environment and Development, as well as Agricultural Development and Land Reform. The idea was that this research agenda should not only orient activities at CSR, but also serve to define critical areas of research in the social sciences in Malawi. It can, however, be argued that several of the priority research areas not only include typical social-science research questions but also more inter-disciplinary oriented questions, which in turn provides a basis for both inter-institutional links, collaboration and further synergy effects.

Under the research area *Environment and Development*, issues to be addressed according to the defined programme include: joint natural resource management; management of open access and common property resources; alternative people-based natural resources management and conflict management; and indigenous knowledge systems. Under *Agricultural Development and Land Reform* issues to be addressed include the question if agricultural development is the only way out of poverty in Malawi; land ownership structure and land use; and state policies in agriculture. Under the research area of *Democracy and Governance*, issues to be addressed include: elections and relations between elected representatives and the constituency; how Malawians understand democracy; and democratic instruments and processes. In this area a research project with the title "The institutional context of the 2004 general elections in Malawi" has been funded by NUFU (Norway) with a total sum of about 6 million NOK for the period 2003 – 2007. In carrying out this project, CSR has Chr. Michelsens Institute (Norway) as its main partner institution. The project includes training of both MA and PhD candidates.

### **3.5. FORESTRY RESEARCH INSTITUTE OF MALAWI**

The Forestry Research Institute of Malawi (FRIM) is located in Zomba. However, it is not formally associated with the University of Malawi; its institutional affiliation is that of a research institute under the Ministry of Natural Resources and Environmental Affairs (MNREA). At present, FRIM counts a staff of 10 professionals; 3 with completed PhDs, 3 with MSc degrees, and 4 with BSc degrees. Salaries are covered by the Ministry but additional funding (from external sources) is required to fund specific research activities. The

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<sup>48</sup> It should be mentioned that consultancies in many cases are carried out by professionals from various institutions, with different professional backgrounds. One example is the consultancy mentioned above (for ESCOM), which includes an assessment of possibilities to involve local farmers in solving the serious problems of silting that at present affect hydroelectric power reservoirs in Malawi. This consultancy e.g. involves a sociologist from Chancellor College and a professional in Social Forestry from Bunda College.

<sup>49</sup> Cf. <http://www.csr.org.mw/brochure.html>

Institute at present only charges a 10% overhead on research funds. FRIM has the best library on forestry in Malawi. The Institute has also served as an attachment site for Bunda College.<sup>50</sup> However, FRIM is not an institution responsible for carrying out training.

FRIM staff do, however, carry out both research and consultancies. A main area of research are issues related to community-based natural resources management. At present the Institute is involved in a research project funded by CIFOR on Adaptive Collaborative Management of Forest Resources; the key question being: how can 'sustainable management' become sustainable? A project funded by FAO and carried out in collaboration with the African Academy of Sciences focuses on indigenous forests (*miombo woodlands*) and current challenges in forest resource use and management associated with HIV/AIDS. A recent proposal submitted to EU (in collaboration with CIFOR) aims to address the fundamental question of how to make forestry extension *work* in Africa.

FRIM no doubt plays the role as the key research-based resource centre on forestry and forest management problems in Malawi. At present, the Institute appears to be the only institution in forest resource management that has a *critical mass* of professional staff (but is probably only just above the 'critical' level). At the moment, it seems that the Department of Forestry and Horticulture at Bunda College (cf. 2.2.3) is lacking the necessary push and institutional commitment to develop further as a training and research institution in the field of social forestry. The Malawi College of Forestry and Wildlife (cf. 3.2) has few resources and a relatively limited number of (only) Diploma-level students, while the Mzuzu University Forestry Programme (cf. 3.3) has been struggling to keep well-qualified staff in a situation of dwindling external resources and reduced numbers of students. All these institutions in practice draw on the professional resources at FRIM, but so far this cross-institutional collaboration is not really formalized.

### 3.6. NATIONAL AQUACULTURE CENTRE AT DOMASI

The National Aquaculture Centre (NAC) at Domasi near Zomba is one of the two national research centres – together with FRIM – under the Ministry of Natural Resources and Environmental Affairs in Malawi. NAC at Domasi is further the location housing the sub-regional centre of The World Fish Centre (ICLARM), which is one of the CGIAR research centres.<sup>51</sup>

In addition to support from the Government of Malawi, and core funding channelled through the CGIAR system, a number of external donors have been involved in funding infrastructure and activities at Domasi. GTZ provided financial support for the construction of a laboratory, 68 fish ponds, library and offices in the late 1980s. DANIDA provided support in the second half of the 1990s, whereas USAID, JICA, CIDA, and ICEIDA have been collaborating in research activities after 2000.

The Domasi Centre has over the last years been involved in a series of research and development projects and programmes, including multi-disciplinary projects going beyond

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<sup>50</sup> *Attachments* mean that students come in order to get practical training, research experience, and also some supervision of the student research work they are required to carry out as part of a BSc or MSc programme.

<sup>51</sup> ICLARM – The World Fish Centre – is an international scientific and technical institution established to work with all aspects of fisheries and (living) aquatic resources. Since 1992 it is a member of CGIAR – the Consultative Group on International Agricultural Research. The headquarters of ICLARM is located at Penang in Malaysia.

fisheries research in the restricted sense of the term. One of the key research and development areas has been *Integrated Aquaculture-Agriculture* technologies. Objectives include developing farmer-friendly techniques for introducing aquaculture into integrated agriculture in order to raise return per unit of land and water used, and thereby providing new opportunities for smallholder farmers operating very close to subsistence levels.

The Domasi Centre has also been involved in projects on ecological agriculture, among others a Sustainable Eco-farming Project set up and funded by DANIDA in the 1990s. For several years DANIDA also supported a study on *Lake Chilwa Wetland and Catchment Monitoring*, focusing on the effects of land-use patterns, soil erosion, river water quality and siltation rates on the reproduction of two fish species in Lake Chilwa, aiming to assess the potential positive impacts of changes in land-use practices on fish productivity.<sup>52</sup>

The Domasi Centre has developed collaboration links with Bunda College through joint research projects, especially projects involving the Department of Aquaculture and Fisheries Science at Bunda. The Centre has also been collaborating with the Departments of Fisheries in Malawi and Zambia, and with Malawian NGOs, with the aim of developing and institutionalizing farmer-led and demand-driven research on fisheries, through the use of participatory approaches.<sup>53</sup>

#### **4. RESEARCH AND EXTENSION UNDER THE MINISTRY OF AGRICULTURE, IRRIGATION AND FOOD SECURITY**

Two technical departments under the Ministry of Agriculture, Irrigation and Food Security (MAIFS) are of special interest in the context of this report: the *Department of Agricultural Research Services* (DARS) and the *Department of Agricultural Extension Services* (DAES).

##### **4.1. DEPARTMENT OF AGRICULTURAL RESEARCH SERVICES**

The Department of Agricultural Research Services (DARS – formerly DARTS) is the technical department under the Ministry that has the responsibility to develop agricultural technologies for use by farmers in Malawi (DARTS 2002:1). The term ‘technologies’ as used by the Department refers to crop varieties, animal breeds, as well as production practices. The Department itself has since 2003 been located at Chitedze Agricultural Research Station some 16 km east of Lilongwe Old Town. Further plans are, however, being developed aiming to make DARS into a semi-autonomous agency that to a greater extent shall orient its activities towards demand-driven research and technology development.

At present, DARS is at the national level operating 3 *Research Stations* – Chitedze, Bvumbwe (south of Blantyre), and Lonyangwa (close to Mzuzu). There are also 4 *Experiment Stations* (Makoka, Lifuwu, Mkondezi and Kasinthula), and 9 *Sub-Stations* located in the diverse agro-ecological zones in different parts of Malawi. The activities of these research and experiment stations should basically cover both research activities and advisory (extension) services.

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<sup>52</sup> Cf. <http://www.iclarm.org>

<sup>53</sup> Cf. <http://www.iclarm.org>

**Table 2.**  
**Formal academic competence of staff at DARS research/experiment stations<sup>54</sup>**

Research stations	No of staff with PhDs	No of staff with MSc	No of staff with BSc
<i>Chitedze</i>	5	13	18
<i>Bvumbwe</i>	1	6	9
<i>Lunyangwa</i>	2	2	4
<b>Experiment stations</b>			
<i>Makoka</i>	2	3	2
<i>Lifuwu</i>	-	2	-
<i>Mkondezi</i>	-	1	1
<i>Kasinthula</i>	-	-	1
<i>DARS Headquarters</i>	4	1	-

The research and experimental work carried out is at present organised in 7 different *Commodity Groups*, with defined responsibilities given to site-specific *Commodity Teams* – in total 25 at a national scale (Chitedze Agricultural Research Station 2004).

- *Cereals Commodity Group*  
With Commodity Teams working with *Maize, Sorghum and Millets, Wheat and Barley, and Rice*
- *Grain Legumes, Oilseeds and Fibres Commodity Group*  
With Commodity Teams working with *Groundnuts, Pulses, Beans, Other Grain Legumes* (such as Soybeans, Pigeon peas, Cowpeas, and Sunflower), and *Fibre Crops* (such as Cotton and Sisal)
- *Horticulture Commodity Group*  
With Commodity Teams working with *Tropical fruits and Spices, Roots and Tubers* (cassava and sweet potato), *Citrus and Deciduous Fruits, Tree Nuts, Vegetable Crops and Mushrooms, and Coffee(?)*
- *Livestock and Pastures Commodity Group*  
With Commodity Teams working with *Livestock* (cattle, sheep, goats, and poultry<sup>55</sup>) and *Pastures* respectively
- *Soils and Agricultural Engineering Commodity Group*  
With Commodity Teams working with *Soil Fertility and Microbiology, Soil Surveys, Agroforestry, Irrigation and Drainage, and Farm Machinery*

One may observe that this structure of research very much reflects disciplinary divisions and specialisations, and the organisation of research therefore focuses on product-oriented rather

<sup>54</sup> The numbers presented in this table have kindly been provided by Dr. Alfred Mtukuso, Director of Agricultural Research, DARS.

<sup>55</sup> Poultry (e.g. chicken) in Malawi is the most widespread type of livestock, with a total estimate of poultry at about 14 million, goats number about 1.6 million, cattle about 0.6 million, pigs around 0.4 million, and sheep only 0.1 million. This means that only in the case of poultry the livestock population is close to the number of the human population in Malawi, which at present is close to 11 million. “To meet the increasing demand for animal protein, there is need to expand livestock production through the promotion of goats, sheep, poultry and rabbits, pigeons, guinea fowls and guinea pigs” (Chitedze Agricultural Research Station 2004:37).

than producer-oriented research activities. This structure does not seem to be designed and organised to promote e.g. diversification in crop production or income-generating activities among smallholder farmers, neither to promote intercropping practices or multi-cropping strategies. It can, however, be seen as a form of organisation that corresponds to the relatively limited economic resources that at present are available for research carried out at DARS research stations.

In the 1990s, a Government programme to promote *Farming Systems Research* was actually implemented, with USAID funding.<sup>56</sup> However, when external funding ceased, the Malawi Government did not continue to run this programme, which required farmer-researcher interactions, travel, and on-farm research requiring resources that the Government has not been able to cover during the last years.

The Department of Agricultural Research Services is also responsible for a network of four agricultural libraries.<sup>57</sup> The main library is located at Chitedze Research Station, the others are located at Bvumbwe, Lunyangwa, and Makoka research stations. The libraries have databases that are linked up in a network, which also give access to a wide range of relevant publications in agricultural research.<sup>58</sup>

The dominant approach in agricultural research and extension in Malawi has been – and to a great extent still is – top-down. However, at present, it has become a challenge to develop “demand-driven agricultural technologies in partnership and collaboration with farmers, extension workers, NGOs, CBOs, and other stakeholders” (DARTS 2002:5). Furthermore, new policies point to the need to institutionalise “participatory research and extension approaches under decentralized district level administrative structures, where farmers are empowered to demand production-increasing technologies from a wide range of research and extension service providers” (DARTS 2002:5).<sup>59</sup>

In more concrete terms, a key challenge facing the Department of Agricultural Research Services at present, is to turn the Department into a semi-autonomous institute; an Institute with a public mandate and the competence, capacity and resources necessary to provide demand-driven, market-oriented research and outreach services to Malawian farmers, but also to other stakeholders and potential clients.

Part of DARS’s role has been to ensure that the developed technologies reach end-users through various extension channels, including the Ministry’s system of agricultural extension services. Here is another major challenge. At present the low adoption rates of new and production-increasing agricultural technologies among smallholder farmers in Malawi is seen as one of the most urgent problems in the agricultural sector.

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<sup>56</sup> *Farming systems research* was introduced on the international scene in the late 1970s and early 1980s. It was an approach aiming at reaching the poorest farmers, and in this respect required interdisciplinary collaboration. Furthermore it meant that farmers also were approached as important sources of information for technology design and generation (Rhoades 1989). “Turning toward studying the farm as a ‘system’ is a substantial step forward – from addressing only its technical and economic dimensions towards capturing the tight interplay between the agrotechnical, economic, sociological, managerial, and cultural variables intrinsic to the farm unit” (Simmonds 1989:vii).

<sup>57</sup> The establishment of this network of libraries was initiated in the 1960s, and has been developed with funding from among others USAID, the British Council, FAO, and the World Bank.

<sup>58</sup> Cf. <http://www.agricresearch.gov.mw/publ/public.htm>

<sup>59</sup> See also chapter 4.2 (on DAES) below.



Over the last years, DARS has been involved in several initiatives to disseminate research results and science-based knowledge to other researchers and to the interested publics. The Department publishes a newsletter aiming to document and disseminate news, useful information and research results on technology development such as new crop varieties, recommendations on pesticide application etc. Its name is *AgriTech News*, the latest issue being volume 4, no. 2, published in April-June 2003. The chief editor is Alex R. Saka. In 2002 DARS initiated a more ambitious project of disseminating research results through establishing a scientific, peer-reviewed journal called *The Malawi Journal of Agricultural Sciences*. The aim was to provide Malawian scientists with:

a forum for presenting and communicating their results of research work in a publication that can be readily accessed by a wide audience of fellow research scientists, policy makers, NGOs, international agricultural research centres, the donor community and all those interested in Malawi's agricultural research and development initiatives" (MJAS 2002:ii).

The first issue came out in December 2002, with a 87-pages publication containing papers that had been presented at the Annual Scientific Conference organised by DARS in November 2000. The plan was to publish 2 issues per year, but the 2002 issue is the only one so far. DARS has in addition to its paper-based publication a website, [www.agricresearch.gov.mw](http://www.agricresearch.gov.mw), providing information on research stations, research programmes, information services and publications.

#### **4.1.1. The role of Chitedze Agricultural Research Station**

The Agricultural Research Station at Chitedze has for many years been the main link in the national network of public research stations in Malawi. It was established in 1948. At present its research agenda is "to develop appropriate and improved agricultural technologies with the view of contributing to sustainable utilization of the natural resources base, improving food security, increasing cash incomes, and reducing poverty among food deficit households in the rural and urban areas" (Chitedze Agricultural Research Station 2004:1).

A considerable part of the Commodity Teams presented above are represented at Chitedze. The Research Station further has a *Seed Services* Commodity Team in charge of seed inspection and seed testing, with access to an internationally accredited seed testing laboratory. A *Plant Genetic Resources* Commodity Team is also located at Chitedze, with responsibilities both in collecting and documenting inventories on indigenous and adapted plant genetic resources, and in formulating national plant genetic resources conservation priorities and strategies (Chitedze Agricultural Research Station 2004:7).

Part of the infrastructure facilities, laboratories and laboratory equipment at Chitedze at present bear witness to a lack of funds for maintenance and renewal, as well as funds for new and professionally challenging research activities.

In addition, it is recognized that in practice "extension has not worked that well...". However, each Research Station in the DARS network shall, according to present plans and strategies, have established a so-called *Technology Transfer Committee* – with representatives from researchers, extension workers, and farmers. With the on-going decentralisation initiatives in the Department of Agricultural Extension Services, such committees could also be "decentralised" to the District or Area level. But so far, these decentralisation processes are mostly in the planning stage (see chapter 4.2, below). However, as regards already

implemented innovative approaches in extension, Bvumbwe is in various contexts pointed out as a Research Station that for some years actually has been carrying out an interesting experiment in the field.

#### **4.1.2. Experiences with demand-based extension at Bvumbwe Agricultural Research Station**

The general background motivating the approach developed at Bvumbwe was the observation that Research Stations were developing (potentially useful) technologies, but even smallholder farmers living close to the research stations were usually unaware of how the research carried out might be useful for them. In practice the dominant *transfer of technology* model was implemented through the researchers providing ‘technology packages’ to field extensionists, who would come to the research stations to get the ‘packages’ and then, in turn, pass them on to the local farmers.

The alternative approach developed at Bvumbwe started in 2001, with a meeting involving traditional chiefs, village headmen and –women, extension staff responsible for public services in the surrounding area, and representatives from the Research Station. On the meeting it was decided to form a Technology Transfer Committee, Mr Kamangira from the Research Station was nominated as Chairman of the Committee. Thirteen surrounding villages elected representatives to the Committee. In addition, one extensionist was included.

The work of the committee started with the researchers asking the local farmers what they wanted to learn. In the first place they wanted to know more about tomatoes, the next priority was mushroom production, and then beans. The Committee decided to draw up half-yearly programmes. Some topics requested by the farmers required professional competence that was not available at Bvumbwe, but the researchers would normally know whom to contact to provide the knowledge in demand. At the end of each year, a big meeting is called in order to get the farmers response on the following questions: What have you achieved? Are you satisfied with our contribution? What is the way forward? What do you want to learn in the coming year?

One may ask the question: Why are the local farmers so interested in participating in this initiative, if they more or less rejected traditional extension? The simple answer is apparently that farmers think “we have been doing this for some time” and don’t necessarily accept “being told what to do” in a top-down manner. If they are adopt new technologies in practice they want to be involved as dialogue partners setting their own priorities.

The demand-driven Bvumbwe model was rapidly replicated at several other Research Stations, and in 2002 a meeting was called at Chitedze to exchange experiences among researchers, and develop common Terms of reference for the emerging Committees. However, because of lack of funds there has been no more national-level meeting so far. Lack of funds is also a problem for the Committee at Bvumbwe. Government funds financing both the salaries, maintenance and research at the Station have been diminishing. In this situation, it has difficult to prioritise allocation of enough funds to run the activities of the Technology Transfer Committee.

## 4.2. NEW CHALLENGES FOR THE DEPARTMENT OF AGRICULTURAL EXTENSION SERVICES

The Department of Agricultural Extension Services (DAES) in the Ministry of Agriculture, Irrigation and Food Security is the public institution with the overall responsibility for disseminating new and appropriate agricultural technologies to farmers. DAES is also responsible for developing methodologies that facilitate the actual *delivery of services* to farmers (DARTS 2002:3) Until 2004 DAES has also been the central implementing agency responsible for frontline extension staff throughout the country. At present the Department is, however, in the midst of a thoroughgoing change process.

This change process started in the late 1990s, with preparations for developing a new national extension policy (Kamputa *et al.* 2004). A number of challenges were to be addressed through this process.<sup>60</sup> One basic challenge was associated with the democratisation process taking place in Malawi after 1994:

Previously extension services were mainly provided in a top-down manner, with the major decisions made at a central level. This is no longer in line with democratic principles and the country is, therefore, changing towards a more participatory and pluralistic approach to service delivery. (MoAI 2000:2)

Extension in Malawi has to a great extent been based on the *transfer of technology model*, guiding both communication practices and the conceptions concerning adoption or non-adoption of new practices. This technology transfer model was also dominating international research and extension at least until the late 1970s (cf. Kaarhus 1994). In Malawi, the model was in practice implemented through a *top-down supply-oriented* approach, aimed at transferring messages on new technologies and associated practices *from* extension officers *to* farmers (DAES 2003:6). In the early 1980s a somewhat modified approach, the *training and visit* approach, was introduced in Malawi and adopted with the sponsorship of the World Bank. It was called the “Block Extension System”, a basic idea being that this approach should provide methods for contacting and reaching a wider range of farmers that what had previously been achieved (MoAI 2000:6).

The situation in the agricultural sector in Malawi at the turn of the century was characterised by agriculture still being the backbone of the national economy. “It accounts for about 93 per cent of export earnings, provides more than 89 per cent of total employment ... [and] occupies about 56 per cent of the total land area ” (MoAI 2000:4). But it only contributed about 35 per cent of the country’s GDP. In fact, agriculture was divided into two relatively clearly separated sub-sectors: the *estate* sub-sector of commercial farming, occupying about 20% of the agricultural land on the one hand; and the *smallholder* sub-sector, occupying the remaining 80%, on the other. However:

Due to the high population pressure on land, some 2.6 million smallholder farmers cultivate less than a hectare of land of which half cultivate less than half a hectare. Due to the low level of farm technology, inadequate irrigation, and shortage of cash and credit to buy hybrid maize seed and inorganic fertiliser, those with between one-half and one hectare can produce only 40-70 per cent of their [yearly] staple food requirement... (MoAI 2000:4)

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<sup>60</sup> GTZ played an important role in the process through providing long-term technical advisory services.

The problem situation defined by the policy-making team was the following: Since the early 1990s, Government funds for extension services had actually been decreasing. At the same time, the number of staff involved in public extension services had been reduced – as a result of the Government’s decision to try to reduce public spending through (among other things) freezing recruitment of new field extension staff.<sup>61</sup> However, the services which in practice were provided by the public extension system, had (in principle) been delivered free of charge.

The new national extension policy was finalized in 2000, and launched under the heading *Agricultural Extension in the New Millennium: Towards Pluralistic and Demand-driven Services in Malawi* (MoAI 2000). It aimed to address the complex challenges faced by the agricultural sector in Malawi, formulating a number of basic guiding principles, such as:

- Shifting from supply-driven to demand-driven extension service provision
- “Those who benefit pay”, implying that the government will not (be able to) pay for all required extension services, or to pay for services benefiting commercial farmers or NGO programmes
- Promotion of pluralism, which implies that the role of DAES as an implementing agency will be diminished, while its role will shift towards facilitating and co-ordinating the work of other players in this field, such as private sector, farmers organisations, and NGOs
- Decentralisation, which means that the 27 Districts will be responsible for organising and coordinating extension services at the local level

Since the 1980s, extension in Malawi has been “regionally” organised into 8 Agricultural Development Divisions (ADDs), which again were subdivided into Extension Planning Areas (EPAs), further subdivided into Sections that operated as the “frontline” level of service delivery. The decentralisation process being implemented now implies that the Districts take over the fundamental role in extension service provision and coordination. The future role of the ADDs will primarily be one of supervising activities in the districts, with most the staff being transferred to the district level.

Decentralisation of extension service responsibilities to the District level shall, according to plans, be accompanied by more participatory approaches in planning, organisation, and provision of services. At the District level, Stakeholder Panels shall be organised to represent all actors in the agricultural sector (DAES 2003:17). The District Stakeholder Panel should comprise farmers, farmers’ organisations, NGOs, agribusiness, and representatives from relevant public sector committees, with smallholder farmers constituting 50% of the members of the District Stakeholder Panels.

A pilot project to test and try out the practical implications of the planned decentralised system of extension has been carried out in 4 districts during a relatively short period (less than a year) in 2003-2004. In 2004 the new decentralised system shall, according to plans, be extended to all the districts in Malawi. To have this new system organized and operative in such a short period of time is definitely a great challenge – taken up by the Department of Agricultural Extension (DAES) in the Ministry of Agriculture, Irrigation and Food Security.

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<sup>61</sup> Cf. chapter 3.1 (on NRC).

## 5. INTERNATIONAL AGRICULTURAL RESEARCH INSTITUTIONS IN MALAWI

Several international research centres are present in Malawi. To get a total picture of available competence and capacity for agricultural development, their activities should also be briefly described; in addition to those of the tertiary education and research institutions briefly presented in chapters 1–3 of this report, the national research institutions organised under the Ministry of Natural Resources and Environmental Affairs that were presented in chapter 3, and the research services at present organised under the Ministry of Agriculture, Irrigation and Food Security and briefly presented in chapter 4.

Among the 16 international research centres members of and supported by CGIAR (the Consultative Group on International Agricultural Research) three are present in Malawi through (relatively small) representations.<sup>62</sup> These are: ICLARM – the World Fish Centre, IITA – the International Institute of Tropical Agriculture, and ICRISAT – the International Crops Research Institute for the Semi-Arid Tropics. The National Aquaculture Centre at Domasi houses a regional sub-centre of ICLARM, and was briefly described in chapter 3.6.<sup>63</sup> This chapter will focus more specifically on IITA and ICRISAT.

At a fairly general level, one could say that the role of the international research centres in relation to the national institutions involved in knowledge generation, training and extension in agriculture and natural resource management, can be that of a *catalyst*, in practice transmitting new ideas and approaches, and that of a *source of funding*, especially through providing funds for collaborative projects. On the part of Malawian institutions, there has perhaps been more interest in the international centres' roles as potential sources of additional funding, while the ambitions of the international professionals representing these institutions may have been more in line with the catalyst role.

To a certain extent, the non-optimal use of available knowledge resources and human capital that may be said to characterize the field of higher education and research in agriculture and natural resource management in Malawi, has also influenced the activities of the international agricultural centres. On the one hand, the international institutions have a limited number of staff employed in the country. However, working on the basis of more solid funding than the national institutions, the staff of the international research institutions have sought to overcome a certain *impasse* in their areas of work, among other this through working more directly with farmers' organisations and NGOs that work in the field.

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<sup>62</sup> For general information on CGIAR see: <http://www.cgiar.org/index.html>. CGIAR-funded activities in Malawi also go beyond the projects operated by these three centres. One example is *RENEWAL: Learning through Action Research*, the Regional Network on HIV/AIDS, Rural Livelihoods and Food Security, where ISNAR (International Service for National Agricultural Research) has played a coordinating role, organising workshops and calls for research proposals linking HIV/AIDS and agricultural issues.

<sup>63</sup> *ICRAF – World Agroforestry Centre* also has a programme in Malawi. It is based at the Makoka Experiment Station in southern Malawi (cf. chapter 4.1). ICRAF Malawi works specifically with soil fertility improvement, fruit tree domestication, fodder for livestock, and pro-poor agroforestry strategies with the aim of using trees for sustainable livelihoods. Cf. [http://www.icraf.org/national\\_programmes/malawi.html](http://www.icraf.org/national_programmes/malawi.html)

## **5.1. IITA – INTERNATIONAL INSTITUTE OF TROPICAL AGRICULTURE – AND SARRNET**

IITA – International Institute of Tropical Agriculture – was established in 1967. With headquarters in Nigeria, it was the first African link in the international network of agricultural research centres supported by CGIAR. Its specific mandate has been to improve food production in the humid tropics. Research has focussed on food crops such as: cassava, plantain and banana, yam, maize, soybean, and cowpea.

At the international level, IITA has designed a general project with particular relevance for Malawi called: *Promoting food security and income generation through sustainable production and commercialization of starchy and grain staples in eastern and southern Africa*. Under this project, IITA Malawi has worked with a number of special (sub) projects. These include initiatives and projects aimed at:

- expanding the use of cassava starch
- promoting commercially viable small- and medium-scale enterprises using cassava as a raw material
- disseminating genetic material targeting both production systems and market opportunities
- root crops and banana/plantain improvement

Among IITA partners, funding sources and collaborators necessary to carry out these initiatives are DARS (at Chitedze), USAID, and SARRNET. In this context SARRNET requires a more specific presentation.

SARRNET – the Southern African Root Crops Research Network – is a network/project launched in 1993, with IITA as the institution responsible for coordination of the network and executing the project. SARRNET activities focus on cassava and sweet potato as principal crops, with CIP<sup>64</sup> – Nairobi as a professional back-stopper on sweet potato. The project activities are oriented towards applied and participatory research and development initiatives, including demand-led processing and utilisation.<sup>65</sup> The focus on cassava and sweet potato is motivated by the fact that both crops have over the years been regarded as low value and low status crops with little potential in the field of agricultural development. SARRNET is working to promote changes in this regard.

At present, SARRNET is coordinated from the IITA offices at Chitedze Research Station. Eleven SADC countries are part of the SARRNET network in addition to Malawi.

## **5.2. ICRISAT – INTERNATIONAL CROPS RESEARCH INSTITUTE FOR THE SEMI-ARID TROPICS**

The International Crops Research Institute for the Semi-Arid Tropics is one of the international agricultural research centres that are members of CGIAR and work directly in Malawi. With its focus on the semi-arid tropics, in Africa ICRISAT have staff based in Kenya, Mali, Mozambique, Niger and Zimbabwe, in addition to Malawi. The overall aim of ICRISAT is to alleviate hunger and poverty through agricultural development, focussing

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<sup>64</sup> CIP – International Potato Centre. CIP is also one of the international CGIAR centres.

<sup>65</sup> Cf. <http://www.iita.org/sarrnet/sarrnet/asanet.htm>

research on crops, farming systems and income opportunities for poor farmers in semi-dry areas.

In Malawi, and in southern and eastern Africa more generally, starting in 1982 ICRISAT has focussed on groundnuts, assisting national institutions in technology development and applied research promoting groundnut production. ICRISAT- Malawi is located at Chitedze Agricultural Research Station, and the ICRISAT groundnut project over many years collaborated closely with the national agricultural research system (at present DARS). More recently, ICRISAT activities in Malawi have shifted focus from primarily working with the development of crop varieties with higher yields and improved resistance to diseases and pests, towards a more market-oriented approach to agricultural development. At the same time, new partnerships have been established with farmers' organisations, especially with NASFAM, but also extending their collaborative links to other NGOs.

Key components in ICRISAT's present approach are the identification of high-value market opportunities, focussing on varieties that appeal to final consumers, establishing more direct market linkages from small-scale farmers, through farmers' organisations to high-quality/high-value buyers. The present model of improving the livelihoods of smallholder farmers has also been supported by USAID.

## **6. FARMERS ORGANISATIONS INVOLVED IN RESEARCH AND EXTENSION: THE NASFAM EXAMPLE**

The *National Smallholder Farmers' Association of Malawi* (NASFAM) is a present the best organised association representing the interests of smallholder farmers producing different crops in different regions of Malawi.<sup>66</sup> NASFAM activities first started around 1993/94, with USAID support. The national association was only formed in 1998, so NASFAM is also still a young organisation. At present it receives substantial funding from NORAD, as well as from USAID.

NASFAM members are smallholder farmers (with landholdings between 0,5 and 2 Ha). They are basically subsistence farmers, who to a certain extent also sell their products on the market. At the grassroots level, NASFAM members form clubs. In total 6000 clubs have been formed. Club members live within walking distance of each other. The clubs are thought to provide an arena for discussion and definition of common problems, and are targeted basic training within the Association, e.g. in farm planning and "farming as business".

Ideally the members of a certain number (5-10) of clubs in a cluster will form a Group Action Committee (GAC). This GAC level of organisation is also at target for training provided by the organisation, e.g. in crop marketing, post-harvest handling etc. The next level of organisation within NASFAM are the local *Associations*, which usually focus on the production of one specific crop or a certain mix of crops for marketing. In total there are at

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<sup>66</sup> There is a also number of other local/regional farmers' organisations with more specific mandates, such as the Cassava Growers' Association or Shire Valley Livestock Association. These associations are, in turn, planning to join in a Farmers Union of Malawi with the ambitions to cover the whole country. This process is not yet concluded, and these organisations' role in the field of trining, competence and capacity building at the national level is so far rather limited. This report has therefore restricted itself to provide a brief description only of NASFAM activities.

present 34 associations. Among these there are chilli associations, groundnuts associations, cotton associations, rice and paprika associations. There are also a number of “mixed crops” associations, where farmers often grow tobacco for sale in addition to maize.<sup>67</sup> The Associations are – in theory – supposed to reach financial independence within 2-3 years, but this goal may be difficult to achieve in practice.

Elected representatives from the local Associations gather annually in a National Assembly, which in turn elect members forming the National Board of NASFAM. At the level of the local Associations, NASFAM provides services to its members through the so-called *Association Management Centres*. These Centres are – to the extent possible – staffed with people with a professional background in agriculture and marketing. They work with marketing, in addition to providing more “traditional” extension services in the field of crop production.

At present about 60% of the professional staff employed by NASFAM are BCA graduates. From NASFAM’s perspective it is, however, a problem that few graduates from training institutions such as Bunda College of Agriculture, so far, have practical competence in marketing. Another problem pointed out by NASFAM representatives is that up to now, the agricultural research carried out at BCA seldom has been demand-driven. In this field, however, there seems to be a real potential of increased collaboration in some of the priorities highlighted in the proposed (2004) *Bunda College Development Programme*.

## **6.1. NASDEC – THE NASFAM DEVELOPMENT CORPORATION**

At the national level, the Association has established a development corporation, NASDEC. Its role is to coordinate activities, build capacity, and more specifically provide technical assistance through the Management Centres. NASDEC has at the national level two subsidiaries, NASCOMEX and NASCENT.

NASCOMEX<sup>68</sup> works with channelling NASFAM members’ produce to local and international markets, seeking to provide maximum returns to the smallholders. NASCOMEX has also organised a network of shops making farm inputs, such as fertilizers, available to local farmers.

NASCENT<sup>69</sup> works more specifically with human resource development within the organisation. Each year workshops in all the 34 association are carried out, usually as one-week arrangements. These workshops include training using participatory methods. Here NASFAM/NASDEC appears to have a competence that is both highly valued by a number of external stakeholders, and a competence that may be even in more in demand in the near future.

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<sup>67</sup> Tobacco-production in Malawi is a sensitive issue, and the fact that for many smallholders it is the preferred cash-crop does not make the issue easier to deal with from the perspective of external donors. USAID does (in principle) not support activities associated with tobacco production, whereas NORAD has taken a more flexible stance with regard to this issue.

<sup>68</sup> *NASCOMEX: NASFAM Commodity Marketing Exchange*

<sup>69</sup> *NASCENT: NASFAM Centre for Development Support*



NASCENT also works in the field of advocacy, seeking to represent the views and interests of smallholder farmers in relation to central policy issues, both at the national level and at international arenas.

## **6.2. WHAT ABOUT THE ROLE OF NGOS AND OTHER PROJECT ORGANISATIONS?**

Any complete overview of competence and capacity in institutions working with agriculture and natural resource management in Malawi would have to include both NGOs and the more specific and ad-hoc projects organisations that operate in this field.<sup>70</sup> However, the present report has focussed on Malawian institutions that are primarily involved in knowledge generation, training and extension in agriculture and natural resource management at the national level. It must be admitted that to give any comprehensive overview of the important roles played by the broad spectre of NGOs and project organisations both to develop, enhance and use existing competence and capacity for agricultural development in Malawi, would go well beyond the scope and ambitions of the present report.

The issue is nevertheless of considerable importance. It would be useful to get a better overview of the diverse initiatives and activities of a wide spectre of groups and organisations, covering both local initiatives – such as for example the *Small beekeeper Development and Research Association* working in Nkata Bay – and the initiatives and activities of international NGOs – such as CARE, PLAN, Oxfam or the Norwegian Development Fund, which may play a role both at the national and local levels in Malawi.

It would be very interesting to see a comprehensive study carried out, focussing on the diverse roles played by this wide spectre of organisations, both by the different NGOs and by the project organisations that operate in the field. With the present reforms being carried out in the public extension services, as described in chapter 4.2 (above), the roles played and contributions made by NGOs and project organisations at the local and district levels would seem to be of particular interest and importance.

## **7. CONCLUSIONS**

The objective of the present report has been to provide an overview of key institutions in the multi-disciplinary field of agriculture, natural resources management and rural development in Malawi. It does not give a comprehensive description of all the institutions working in this field, nor does it cover all their activities. It does, however, provide a lot of information that may contribute to facilitate communication, linkages and cooperation both among the Malawian institutions themselves, and between Malawian institutions and external partners. In this way it is also a response to a concern expressed by one of the many Malawian professionals interviewed in the process of collecting information for this report: “To collaborate you have to know what the others are able to offer!”

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<sup>70</sup> Examples of such ‘project organisations’ could be *IDEAA*, which has worked to promote the processing of cassava, e.g. through making available ovens for cassava bakeries to selected farmers. Another example is the *Lighthouse Project*, which has aimed to support exceptional and innovative farmers; that is, individuals who may serve as a model – or ‘lighthouse’ – disseminating ideas and inspiration to other farmers.

The most prominent concern among representatives of Malawian institutions working in the field of agriculture and natural resources management are economic concerns. The principal problem pointed out during the series of conversations carried out to make this report was the problem of lack of funding. External collaborators would more often point to organisational structures and the incentives for use of human (knowledge) resources as key institutional problems. Both the Malawian professionals' perspective and the external collaborators' perspectives are probably both pointing to important aspects of a total picture in this field.

The report gives accounts of basic funding problems, but it also points to weaknesses in the use of existing competence and capacity in Malawian institutions. It suggests that there are clear potentials to mobilise and utilise human resources in more productive ways; that there are potentials for establishing new linkages, for establishing and formalising more effective collaboration, and for producing valuable synergy effects both at the institutional level and in the field. Mobilising these resources not only require (additional) economic resources, but also improved competence and capacity at the institutional level.

A problem that affects many Malawian institutions is – at least in the view of external observers – is a surprising mix of highly hierarchical formal structures combined with rather fragmented and un-coordinated individual activities, e.g. at the level of research. In many cases much could be gained through well-planned organisational change and development, and also through more extensive cross-disciplinary and cross-institutional collaboration efforts. If we look more specifically at the organisation of research projects, there is a very general tendency to sub-contract data-collection to lower levels in the hierarchical structure. The down-grading of data-collection and fieldwork inherent in this tendency may – in the long run – have unintended, but counter-productive effects, through actually restricting the possibilities for really innovative research and *new findings!*

One of the questions that have been raised in this report concerns the further development and long-term sustainability of the structures of a key training and research institution such as Bunda College of Agriculture in the field of agriculture and natural resource management. Is there still room for expansion, a further development of new Masters programmes, and a further diversification of courses within the established programmes in order to increase students' choices? That is, without attracting new sources of long-term funding.

We may ask if the Malawian Government, given the priority of agricultural development in the Malawian PRSP, in coming years will allocate more funds to tertiary education in agriculture and natural resource management? To what extent can a broader range of external donors be mobilised to finance Bunda College's Development Programme? Furthermore, to what extent will long-term institutional sustainability actually depend on successful institutional collaboration, both at the *national* and *international* level?

At a more general level, the material presented in this report indicates real problems in attaining a level of *critical mass* with regard to competence and resources in any single institution. How to deal with such a fairly generalized problem? If more resources are not becoming available, and decisions leading to a concentration of resources are difficult to implement, cross-institutional and inter-disciplinary collaboration stand out as an option.

The present situation regarding *inter-disciplinary and cross-institutional links* between key institutions in knowledge generation, training and extension in the fields of agriculture and natural resources management in Malawi have repeatedly been brought up in this report,

including the links between the “traditional” institutions in agricultural and natural resource management research and training, such as Bunda College, and institutions responsible for research and education in the social sciences, such as Chancellor College. The potentials for creating inter-disciplinary synergy effects actually become more relevant with the present initiatives to follow up international trends in participatory-oriented and demand-based approaches, both in agricultural research, in implementing rural development strategies, and in natural resources management in Malawi. In this context there is clearly a need for capacity building in working professionally with participatory approaches in several institutions.

Bunda College of Agriculture has one of the libraries covering information in this field, which is fairly well equipped and well run. The library at Chitedze Research Station is another well-equipped library. The Bunda College Library should with the instalment of the planned VSAT system in principle solve the technical problems that have affected the library for some time. The new system should also provide further possibilities for improved linkages and collaboration in the field of net-based services, e.g. with the DARS’ agricultural library system or with FRIM’s library resources on forestry. Improved connections and easier access to electronic information should also provide the basis for extending service delivery to include institutions dedicated to training of ‘frontline’ extension staff, such as Natural Resources College or Malawi College of Forestry and Wildlife, or to farmers’ organisations such as NASFAM – given that the necessary resources are made available.

The field of scientific publications is another area where key institutions would no doubt gain by joining forces and collaborating to create at least *one* high-quality scientific periodical published regularly. We have seen that both the *Bunda Journal of Agriculture, Environmental Science and Technology* and *The Malawi Journal of Agricultural Sciences* have experienced problems in following up their plans to publish high-quality scientific periodicals regularly. Such a regularity is necessary to make (other) institutions and interested individuals subscribe to journals, to make scientists consider it as an attractive place to publish high-quality articles, and thus make Malawian periodicals count in the competitive field of international scientific publication.

In the area of natural resources management, it can be observed that the Forestry Resource Institute of Malawi plays the role as a key research-based resource centre on forestry and forest management problems. At present the Institute appears to be the only institution in forest resource management that has a *critical mass* of professional staff and institutional resources (but only just so). The total picture of science-based knowledge production and reproduction (training) in management of the forest resources in Malawi that is emerging from this report, is one of fragmentation and potential problems of (institutional) sustainability. This situation represents a challenge to several stakeholders, including the Ministry of Natural Resources and Environmental Affairs that provides the basic funding for FRIM, but also to other stakeholders in the fields of agriculture, natural resources management and sustainable livelihoods development in Malawi.

The end of the Cold War in the 1990s, followed by the significant political changes that took place in South Africa and the end of civil war in Mozambique, resulted in practice in several major Western donors seeing less need to support Malawi under multi-party democracy than under President Kamuzu Banda’s regime. Even if new donors entered the scene in the 1990s,<sup>71</sup> support to Malawi by international donors continued under generally harsher

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<sup>71</sup> Norway initiated bilateral development collaboration with Malawi in the 1990s.

economic conditions, and involved increasingly explicit donor conditionalities. In the course of the 1990s and the beginning of the first decade of 2000, most of the institutions involved in agricultural research, training, and extension actually experienced a situation marked by diminishing (in real terms) Government funding, greater uncertainty with regard to long-term external donor funding, and increasing demands to *deliver solutions* – in a national context of deepening poverty, increasing pressure on natural resources, and increasing food insecurity.

At the same time, these institutions experienced problems in (re-)producing their capacity to deliver the services required by the larger society, especially services that were considered useful by the majority of Malawian smallholder farmers. The question may be raised if the institutions dedicated to knowledge generation, training and extension in this situation have actually managed to act strategically, in order to ensure that they have the minimum resources required to reproduce themselves as knowledge institutions *and* play the role of delivering the required *competence and capacity for agricultural development in Malawi*.

The effect and impacts of *extension services* as these have usually been provided to rural people in Sub-Saharan Africa, have over the last years been widely debated. The so-called “traditional top-down approach” is subject to criticism, not only in Malawi, but worldwide. At the international arena new and more *participatory approaches* are being tried out, and *demand-oriented approaches* are increasingly called for, not only in the dissemination but also in the production of science-based knowledge on agriculture and natural resource management. Even if Malawi has not been in the forefront of these developments, there are at present several indications of moves in a new direction. The report has described radical changes in the policy and organisational structures of the departments of both Agricultural Research Services and Agricultural Extension Services under the Ministry of Agriculture, Irrigation and Food Security. However, the further concretisation and implementation of these initiatives will no doubt bring with them considerable challenges for the institutions involved.

In this context, the proposed Bunda College Development Programme (2004) can actually have an important role to play in strengthening new and recently emerging initiatives towards more demand-driven and participatory approaches in research and extension. The Programme can be seen as an operational training, applied research and outreach programme, aiming to improve food security and reduce poverty among smallholder farmers in Malawi. It represents a shift in orientation on the part of BCA towards more demand-driven research, using more participatory approaches, and involving a much wider range of external partners and stakeholders than what has formerly been practiced. To what extent this programme will succeed depends, among other things, on improved communication and improved linkages between various stakeholders, both among the Malawian institutions themselves, and between these institutions and their external partners. The present report can hopefully be one contribution towards this goal.

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## LIST OF PEOPLE MET AND CONSULTED<sup>72</sup>

Dr. E. Adipala	Coordinator of the FORUM Programme, Makerere University
Mr. Anthuachino	Leader of ShireValley Livestock Association
Dr. J.W. Banda	Programmes Coordinator, BCA
Ms. G. Bonogwe	Administrator, IDEAA
Mr. G. Chambamba	Crop Production and Marketing Manager, Lilongwe South Association, NASFAM
Dr. A. Chikuni	Programme Officer, Royal Norwegian Embassy
Dr. G. Chinkhuntha	Organic Farmer, "Freedom Gardens", Dowa District
Mr. A.D.C. Chirimba	Commodity Team Leader, Chief Soil Scientist, Chitedze Agricultural Research Station
Mr. D. Chibonga	Chief Executive Officer, NASFAM
Dr. D. Chilima	Head of Department, Home Economics/Human Nutrition, BCA
Dr. A. Chikuni	Programme Officer, Norwegian Embassy, Lilongwe
Dr. J. Estrada-Valle	Senior Scientist, ICRISAT, Malawi
Ms. L.P. Holst	Development Advisor, NASFAM
Mr. M. Hussein	Head of Department, Political and Administrative Studies, Chancellor College
Mr. W.W. Jere	Lecturer/Director of Fish Farm, Fisheries and Aquaculture, BCA
Mr. D. Kamangira	Chairman of Technology Transfer Committee, Bvumbwe Research Station
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<sup>72</sup> In addition to this long list of people who were willing to share their knowledge, experiences, and views, during the time of information collection for this report, I had the opportunity to take part in a major Stakeholders' Workshop on the MAROP programme proposal, organised by Bunda College in Salima, Malawi, February 9 – 13, 2004, and further assist at a number of task force meetings to further develop the MAROP programme proposal, in addition to a long series of more informal discussions. I assisted at a couple of meetings between the Task Force and the Directors of Agricultural Research in the Ministry of Agriculture, Irrigation and Food Security. I also assisted at a Seminar on Cooperation between training institutions in Malawi and Norway at Natural Resources College, Malawi. Furthermore I had the opportunity to assist at a meeting organized by GTZ.

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Dr. A. Mtukuso	Director of Agricultural Research
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Dr. M. NyaManda	Dean of Students, BCA
Ms. S. Nyasulu	Lecturer, Language and Development Communication, BCA
Dr. R.K.D. Phoya	Professor & Dean of Postgraduate Studies, BCA
Dr. D. Rubadiri	Vice-Chancellor, University of Malawi
Mr. G.F. Salanje	College Librarian, BCA
Ms. K. Sverdrup	Counsellor, Norwegian Embassy, Lilongwe
Mr. Chr.S. Tchongwe	Association Field Officer, Lilongwe South Association, NASFAM
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Mr. E.G.J. Vitsitsi	Lecturer, Agricultural Engineering, BCA
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