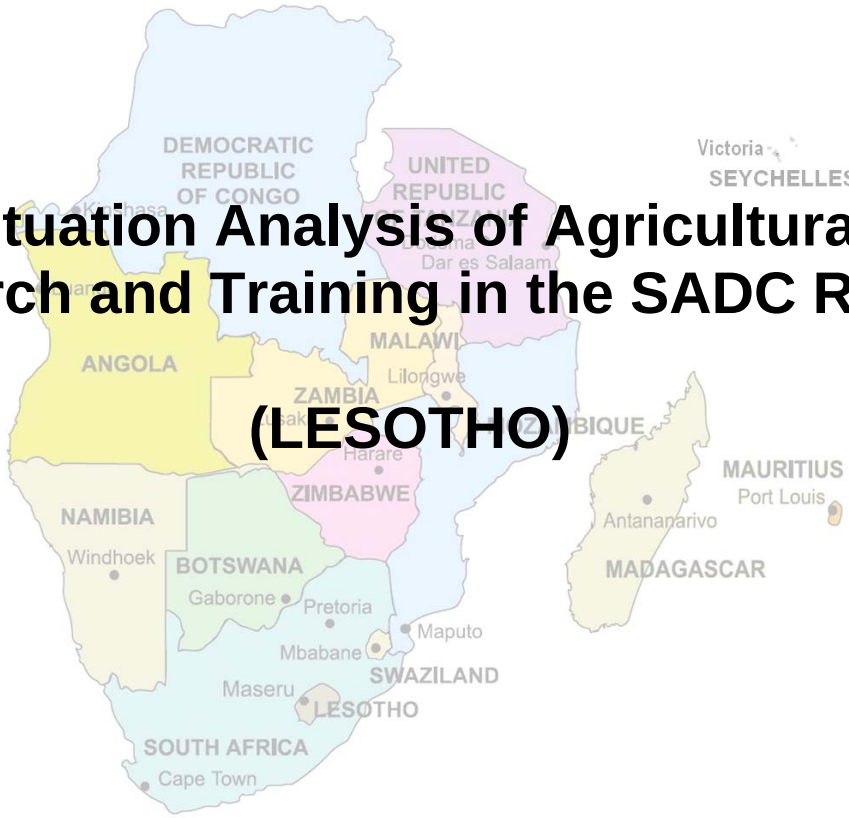
IMPLEMENTATION AND COORDINATION OF AGRICULTURAL RESEARCH AND TRAINING (ICART) IN THE SADC REGION



Situation Analysis of Agricultural Research and Training in the SADC Region

(LESOTHO)

FANR Directorate
SADC Secretariat
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The National Agricultural Research System in Lesotho:

Situation analysis

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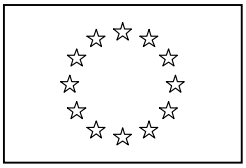

SADC Food and Natural Resource Directorate (SADC-FANR)
Implementation and Coordination of Agricultural Research and Training (ICART) **European Union Commission**

ABBREVIATIONS AND ACRONYMS

ANAFE	Africa Network for Agro-Forestry and Environment
AU-NEPAD	African Union's New Partnership for African Development
BOS	Bureau of Statistics
CAADP	Comprehensive African Agricultural Development Programme
DAR	Department of Agricultural Research
DCS	Department of Crops Services
DFS	Department of Field Services
DLS	Department of Livestock Services
DPPA	Department of Planning and Policy Analysis
FANR	Food Agriculture and Natural Resources
FA / NUL	Faculty of Agriculture, National University of Lesotho
FARA	Forum for Agricultural Research in Africa
FDI	Foreign Direct Investment
ARC	Agricultural Resource Centre
FTC	Farmer Training Centre
GDP	Gross Domestic Product
GNP	Gross National Product
GoL	Government of Lesotho
ISAS	Institute of Southern African studies
IFPRI	International Food Policy Research Institute
LAC	Lesotho Agricultural College
LCN	Lesotho Council of NGOs
LNWMGA	Lesotho National Wool and Mohair Growers' Association
MAFS	Ministry of Agriculture and Food Security
MDGs	Millennium Development Goals
MOACLR	Ministry of Agriculture Cooperatives and Land Reclamation (now MAFS)
NAPES	National Action Plan for Food Security
NARS	National Agricultural Research System
NGO	Non- Governmental Organization
NUL	National University of Lesotho
RUFORUM	Regional Universities Forum for Capacity Building in Agriculture
RSDA	Rural Self-help Development Association
SCARDA	Strengthening Capacity for Agricultural Research and Development in Africa
SUTRAD	Support Unit for Teaching, Research and Agricultural Development
UES	Unified Extension Services
UNAIDS	United Nations Aids
LPI	Lerotholi Polytechnic Institute

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EXECUTIVE SUMMARY

1. Introduction

Lesotho's agricultural resource base is eroding at an unacceptable pace. This places enormous challenges on scientists and policy makers in their quest to finding significant increases in agricultural production, while conserving the environment and stimulating the economy. However, Lesotho's national development goals places agriculture at the centre stage of its developmental agenda and policy articulates the relevance of agricultural research as the chief goal of poverty reduction in Lesotho.

The concept of a pluralistic Agricultural Research System is only gradually being accepted by key players in agricultural research. Though the concept of the NARS has been in existence for over three decades, there is still the tendency to equate the NARS to the dominant national agricultural research institute or organization. Shifts in paradigm since the 90s due to privatization, decentralization and competitiveness, increasing importance of technological innovations have led to a blurring between agriculture and science. The public sector monopoly of the NARI has thus become an obsolete institutional model in agricultural innovation systems.

The major challenge for many developing agricultural systems is finding ways to capture the potential of alternative suppliers to bring more resources into the formal research system and identifying how to exploit the complementarities among various participants / actors to develop a well-articulated research system. This is where the purpose of SADC-ICART project is located

Agricultural research is weak in Lesotho. There are no institutional or functional linkages between research, extension, crops, livestock services, and private sector organisations. This has resulted in gaps in technology packages promoted for rain-fed agricultural production systems. There is no coherent strategy or on-going programme to appraise production constraints in order to formulate research agenda directed at solving these problems, collaborate with farmers to carry out farmer-managed research or to fine-tune technologies for transfer and dissemination and research facilities are inadequate.

This situation analysis for Lesotho provides an input to SADC ICART's regional situation analysis on agricultural research and training for the SADC sub-region. The information gathered will form the background to the formulation of a Strategy for support to regional networks by the SADC FANR. In addition, the information gathered will initiate the development of an information system on Agricultural Research and Training in the sub-region.

2. Methodology

This study is the third phase of a 4-phase regional- wide analysis of National Agricultural Research Systems (NARS). The first two phases involved desk reviews and brief country

visits to appraise the situation of the NARS at the sub-regional level. This phase involves a more in-depth country level analysis.

Data collection methods included desk review, the use of structured questionnaires and unstructured interviews with key informants. Structured questionnaires were used to provide new data or an update to a number of data variables on human resource, staff structure, budgetary allocations to sections and/or programmes and in-country linkages.

A national workshop was held to validate the first draft of the situation analysis report and contextualise in-country and regional level research alliances and networking.

3. Findings

a. Agricultural Research Policy Environment

The environment and policy for conducting research are given in the following GoL documents; The Vision 2020 of 2004, the Lesotho Poverty Reduction Strategy Paper of 2005, the Agricultural Sector Strategy of 2003 and the Lesotho Food Security Policy of 2005.

The **Agricultural Sector Strategy** (ASS) identifies research as one of the key government services. It explains that government policy is to be involved in research where public goods are concerned, and spells out principles for the conduct of research and the need to coordinate closely with users of research.

The Agricultural Sector Strategy calls new approaches to identifying research needs and work plans as well as methods for conducting research and disseminating results. This includes problem identification, needs assessment, research project planning and implementation monitoring and evaluation. The specific changes include; developing work plans, research implementation, dissemination of research results, monitoring of impact.

b. *Linkage between Agricultural Policy and Research/Training programmes*

The vision and mission statements of majority of the NARS institutions do recognize the key elements of the national vision and the key ASS goals. This was observed during the recent SCARDA scoping study, when heads of the NARS institutions were asked to rate key elements such as 1) poverty reduction, 2) environmental sustainability, 3) HIV/AIDS and gender as espoused in the policy and strategy documents of the MAFS. The same trend was seen in this study.

A number of the NARS institutions have attempted to align their strategic plans and activities, however, the implementation of these activities have been incoherent and diffuse so far. The only national agricultural research institution, the DAR of the Ministry of Agriculture and Food Security, is in the process of finalizing the formulation of the country's agricultural research policy and strategy, hence may be presumptuous to draw conclusions on its alignment to its programmes.

Even though many of the NARS institutions reported to engage in significant extents of stakeholder consultation, priority setting processes, they have often failed to deal with the priorities of the majority resource-poor farmers.

c. Structure of the NARS

Public institutions: The NARS in Lesotho is a small one and hinges on the Department of Agricultural Research (DAR) of the Ministry of Agriculture and Food Security (MAFS) and the Faculty of Agriculture of the National University of Lesotho (FA-NUL) as the main supply-side research institutions.

Staff profiles and quality: Out of the total of 320 staff, 73(23% of staff) are in research, 80 (25% of staff) are involved with training at diploma or higher qualifications and the rest in administration at various levels. This includes double-counting staff who are involved in both teaching and research. In relation to academic qualifications, majority (60.3%) have sub-degree qualifications. About 14 % have Masters degrees and only eight percent hold Doctorate degrees. The NARS institutions have slightly more females than males on staff with a significant number in the younger age bracket (below 35 years). A good and timely staff retention plan, capacity building policy and development plan should take advantage of this strength to improve the efficiency of the NARS as a whole.

Resource allocation to actual research activities is grossly inadequate. Current government budgetary allocation to Lesotho's 50 FTE researchers, mainly from DAR and FA-NUL, including salaries of researchers, constitute only 1.3% of the contribution that agriculture's puts into the total GDP.

Given the inefficiencies in resource management, it is conceivable that direct budgetary allocation for actual research activities is extremely small. Budgetary support is therefore and not at all commensurate with the contribution and impact expected from agricultural research towards improving productivity and subsequent reduction in poverty.

Private institutions: A significant number of private institutions of the NARS exist in Lesotho. However, many demand research instead of supplying research services. Care International and World Vision also do some limited amount of research especially for the Ministry of Forestry and Land Reclamation.

NGOs range from large highly organized and nearly commercial NGOs such as Lesotho National Wool and Mohair Growers Association (LNWMGA) to smaller and less organized ones including pig farmers and poultry farmers associations. Majority are registered members of the Lesotho Council of NGOs (LCN).

Channels of demand articulation: Three channels were identified.

1. Informal farmer-to-farmer routes: Farmers cumulatively build their knowledge over years. They tend to get new ideas and innovations through other elite Farmers. For

example, a number of farmers in Lesotho are in contact with other farmers especially in RSA. Through this source, they build their own ideas about new technologies and may articulate their demand for research on specific queries individually or collectively channel it through their national committees or sub-committees to the Department of Field services, Crops Services, Livestock Services who may in turn pass these on to DAR or to FA / NUL (NUL), NGOs.

2. Formal irregular routes: Needs assessment studies that sometimes precede community projects and programmes also provide opportunities for farmers to articulate their demand. The DFS sometimes engages farmers in action learning cycles in order to develop Community Action Plans. During such sessions farmers are taken through the prioritization of their problems and demand.

3. Public Structures for contact: There are, in total, 67 Agricultural Resource Centres (ARC) across Lesotho, about an average of 7 in each of Lesotho's 10 districts. The centres provide technical support to farmers. In like manner, farmers have some access to route their problems through these centres. This provides an important platform for farmers. Other platforms include farm visits (very irregular) and agricultural shows (annual). The farmers' federations also provide an interface and platform for sharing and demand articulation between farmers and service providers. The formation of local and national fora for small scale farmers also provide platforms for dialogue

d. Coordination of the NARS in Lesotho

Coordination among the NARS institutions has been one of the major problems thwarting the formal establishment of a pluralistic NARS in Lesotho. Essentially, no institution is mandated and supported to carry out full coordination role of the NARS in Lesotho.

The development of the current National Action Plan for Food Security (NAPFS) has created a National Task Force to monitor and coordinate all programmes of the NAPFS to ensure successful implementation of the programme. Formal linkages of this set-up to research institutions should be a worthwhile approach to pursue in Lesotho.

The NARS institutions may have interesting and elaborate vision and mission statements, but there is lack of the fundamental understanding among the NARS institutions regarding how they link to each other and the actual actions that will strengthen and make the entire system effective.

Plans to improve coordination of the NARS: Over the years, there have been attempts to remedy the weaknesses in the generation and dissemination of technology to farmers in Lesotho by forging linkages to strengthen especially the DAR, LAC and DFS in carrying out their mandates. In 2000, a merger between FA / NUL (NUL) and LAC (MAFS) was tried. However, within 3 years, there were claims that, the merger had created a weak linkage and control of MAFS on LAC and there was apparent focus of NUL on academic issues at the expense of extension delivery.

The weaknesses in the research output generation, dissemination and technology adoption by farmers has persisted unabated. Already, there is a proposal at advanced

stage to create the Lesotho Institute of Agricultural Development (LIAD) by consolidating DAR, LAC and DFS

More recently, under the SCARDA project of the Forum for Agricultural Research for Africa (FARA), the Faculty of Agriculture of the NUL, earmarked as a focal institution, is expected to develop its proposed Coordination Unit for Agricultural Research, Teaching and Development, (SUTRAD). Linkages between the institutional structures to be provided under this unit and other institutions of the NARS will also go a long way to elevating and improving coordination of the NARS for agricultural development in Lesotho.

During the validation workshop for this study, participants were convinced of the need to establish a functional NARS that will adequately respond to developmental needs of Lesotho. The workshop therefore formed a six-member Lesotho NARS Facilitating Committee (LNFC) (the member institutions and details of the mandate of the LNFC is provided in annex 10)

In-country linkages and research alliances: Analysis of institutional linkages showed that the nature of the relationships between NARS institutions in Lesotho range between attachment programmes to very limited levels of research collaboration. A number of institutions were of the view that the poor collaboration and linkages was due to the lack of knowledge about what research activities other institutions are engaged in.

Clusters of linkages were observed among the NARS. This could form a very good basis towards understanding and developing stronger networking to improve the general coordination and effectiveness of the NARS. Research activities need to be advertised to elicit greater collaboration among the NARS institutions.

Research needs and need for cooperative relationships: Most of the private sector institutions that constitute the demand side of the NARS, are involved in dissemination, demonstrations of proven technologies, advice or pre-testing of new technologies.

While the three most important research needs of the NGOs in aggregate terms centre more on research delivery, research management and human resources management, the needs for the core NARS institutions centred generally on research management, institutional capacity and human resource management.

e. Networking for Agricultural research, training and development

Based on self-rated performance, many of the (supply-side) NARS institutions seem to recognize that they are performing far below what is expected in their research, extension activities and in developing linkages. The establishment of linkages was rated as the weakest set of activities performed. Mean scores of 3.3, 3.0 and 2.3 were given for research, extension and linkages, respectively. Indeed, forming linkages appear to be the most difficult for the NARS institutions and has been elusive to date. Much more effort will be required to strengthen this weakness.

These may be due to institutional barriers, poor management practices within institutions but also due to human barriers such as lack of motivation, lack of confidence and competitiveness.

Research alliances across the SADC and cooperation with international research institutions: Research alliances between NARS institutions in Lesotho and other research institutions across the SADC are largely limited to a few institutions in the RSA for obvious reasons of proximity. The poor and weak internal and external linkages among the NARS in Lesotho also influence the linkages with institutions outside the country.

It will be important for ICART to also help promote linkages with other institutions in other SADC countries with similar interests with especially DAR and FA-NUL who are the core NARS institutions.

Informal internal linkages need to be strengthened as a first step towards strengthening and fostering research alliances with regional and international institutions.

Interdisciplinary Working Groups and Research Groups for specific national problem areas and themes may prove very useful for Lesotho. Working Groups on themes especially on environmental issues (such as soil and water and conservation), industrial use of technology, Food security, farming systems and sustainable livelihoods may form the needed blocks with sufficient capacity to generate and / or absorb utilize information. This will foster improved regional research alliances with other SADC institutions and position the NARS in Lesotho to benefit from the enormous knowledge flows that is available in regional and international circles.

4. Overall discussion and conclusions

The development of scientific capacities in the NARS only addresses part of the problem facing the NARS. Organisational and managerial weaknesses seriously undermine the productivity of the research system in Lesotho. The size and quality of Lesotho's NARS, albeit small, requires strong institutional support. Scientists cannot contribute their fullest potential, no matter how well trained, without strong institutional support.

Specialized institutions are required to complement the efforts of the NARS in Lesotho and, indeed many developing countries, to increase agricultural productivity. These include international agricultural research centres, regional institutes and networks, bilateral and multilateral agencies and private sector. What is required is the planning capacity to effectively utilize this assistance. Also, only national research leaders in Lesotho can ensure that the global research agenda is really in Lesotho's interest. Hence advances in agricultural production are unlikely to happen without a strong and efficient NARS.

Since 1952, when the national research institute, now DAR, was created, Lesotho's NARS has only made modest improvements in its structure and organisation. The organisation of the NARS is still poor and diffuse.

a. Management and Institutional issues

The overriding problem in Lesotho regarding the effectiveness of the NARS is the country's inability to maintain the critical mass of good caliber of professionals to effectively generate and disseminate research output for effective uptake of technologies. This has been due to high attrition rates of staff especially to the RSA. As is usually the case in many countries, high attrition rates are obviously linked to the relatively poor, uncompetitive remuneration and working conditions for staff and inadequate facilities (laboratories, equipments and research and teaching materials).

Research coordination is poor and fraught with capacity problems including; lack of relevant structure for coordination, poor research methodology and poor implementation record. Many laudable ideas are left in reports unimplemented. This is due to weak and virtually non-existent multi-disciplinary and multi-institutional collaborative research, poor systems and non-existent platforms for engaging in serious academic discourse.

Locally, there are no professional or non-professional agricultural bodies such as Agricultural Science Association, to engage civil society in many of the important issues affecting agriculture. This is an important area to improve. The FA/ NUL houses the Lesotho Journal of Agricultural Science (LJAS) and released its maiden volume in November, 2007, but with lack of backing from any professional agricultural bodies, running the journal has been difficult.

Management of agricultural Research: Aside the challenge of poor coordination of the NARS in Lesotho, the management of the research process itself (programme formulation, monitoring and evaluation and information management) constitutes the most serious threat to the establishment of any meaningful research system in the country. The serious human capacity weaknesses also questions the efficiency of the management of resources (human, financial and physical).The availability of adequate and timely information and the interaction among these processes determine effectiveness.

It is therefore important to ensure that NARS scientists are trained enough to enable them evaluate the technical feasibility and budgetary requirement of programmes, however management tools are required to facilitate sound programme formulation and budgeting.

b. Training and professional development

Training at tertiary level in agriculture is within the mandates the Faculty of Agriculture (NUL) and the Lesotho Agricultural College (LAC).

Facilities: These institutions are generally inadequately staffed with qualified personnel Facilities such as internet is not readily accessible to students and for teaching and poor learning materials. LAC for instance has no internet access at all with a poor library facility, though there is access to laboratories in DAR for academic work.

Curriculum: A review occurs every 5 years, but this needs to be combined with or preceded by stakeholder consultations and tracer studies in order to produce the required

graduate profile. Such consultations are not done due to poor leadership, coordination, commitment and funding for the consultation process. Curriculum is largely monitored through student evaluations and external examiners reports. Again this should include a stakeholder assessment. A quality assurance unit should be developed and the correct expertise should be used to plan the modalities for this.

Teaching methods: At the individual level this usually includes specialized study and assignments and at group level teaching includes, lectures, group work/discussions, demonstrations, field visits and excursions. The faculty could do with electronic learning facility, ICT, Guest lectureship programme using people from the Ministry, industry, business, Experts with international experience to provide students with the realities in Agriculture.

c. Linkages between NARS, policy makers, technology transfer system, users and external sources of knowledge

Lesotho's NARS can only be effective if NARS leaders are able to exchange information with policy makers and successfully communicate the potential of particular research programmes to agricultural development. This will stimulate increased funding. Also policy makers need to communnicate with research managers and clearly articulate national development objectives. Communication linkages and platforms for such engagements need to be stepped up in Lesotho.

The current Agricultural Resource Centres provide structures for farmer engagement with research and new technology. These need to be resourced and linked up to other institutions of the NARS apart from institutions of the Ministry of Agriculture.

The NARS can increase its efficiency and maximize its impact by making full use of available sources of knowledge and information. For a country like Lesotho with a very small NARS capacity it will be of utmost importance and beneficial to link up with other NARSs, and international research centres. The DAR needs to step up its already established linkage with ARC of Republic of South Africa, CIMMYT, ICRISAT, Information Core for Southern African Migratory Pest (ICOSAMP), SADC Plant Genetic Resources Network (SPGRC).

5. The Way forward

It may be useful to develop a **national forum for agricultural research** and **commodity based coordinating committees** or component-specific linkage mechanisms with strong representation and leadership from the National University of Lesotho. A formalized system-wide coordination body will bring about greater integration among the NARS especially with the FA-NUL. The LNFC has been charged to make this happen and ICART may help in the facilitation process.

Joint ventures with private sector, use of multi-institutional and multi-disciplinary teams for major research programmes to foster cross-border networking will be beneficial to the NARS in Lesotho

Competitive research funding approach tries to bring university from the periphery of the NARS and strengthen research collaboration across national borders, but this will depends entirely on donor funding with very little national commitment. ICART may consider facilitating support for in-country research programme funding on competitive basis.

Experiences elsewhere have shown however, that the foregoing mentioned approaches may bring about more research specialization, greater inter dependence, stronger linkages and more will be achieved with same resources This may be good for a country like Lesotho, but it requires substantial amount of mutual trust among NARS institutions and personalities and appropriate ways must be found to share research costs and recognition.

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Introduction and Background

The increasing importance of technological innovation has caused both national and donor organizations to step up their investments in agricultural research in the last decade after nearly a halt in investments during the 1980s and 1990s. During this period many African countries consolidated their agricultural research capacity into single organizations and emphasized strong central coordination and leadership.

Ongoing National Agricultural Research System (NARS) reform agenda in recent years has, however, seen a shift from centralization to decentralization. There has also been the need for agricultural research to be more outward looking, client-oriented and impact-driven. However, for the majority of African farmers, the demand for agricultural research and innovation is very diffuse and poorly articulated. Research organizations are being urged to make their knowledge and technology to be applied by resource-poor subsistence farmers in neglected areas[1]. The need for regional knowledge flows and networks has never been greater.

1.1 Introduction to the study

Agricultural development directly, addresses both temporal and spatial dimensions of economic growth. This recognition has given renewed emphasis on agricultural development in Africa in recent years. The African Union's New Partnership for African Development (AU-NEPAD) has set a goal of 6 % per annum growth in agriculture in Africa in its Comprehensive African Agricultural Development Programme (CAADP)[2]. A sustained growth of this magnitude is expected to usher Africa into an era of reduced incidence of poverty of about half the present levels as targeted by the Millennium Development Goals (MDGs).

In the Southern African Development Community (SADC), agriculture contributes 35% to the region's gross domestic product of and provides full time employment and incomes to 80% of the population of the sub-region[3]. It contributes on the average 13% of export earnings and about 66% to the total value of intra-regional trade[4]. Calls for increased strategic investments to critical areas of the agricultural sector stems from the fact that agriculture does not only directly provide desired increases in economic status and

[1] Chema, S., Gilbert, E. And Roseboom, J. (2003), A review of Key issues and recent experiences in Reforming agricultural research in Africa, ISNAR research report 24
[2] NEPAD (2002) Comprehensive Africa Agriculture Development Programme
[3] Anandajayasekeram P. and Rukuni, M. (1998), Agricultural research and poverty alleviation in Eastern and Southern Africa
[4] FANR-SADC, (2007), An introductory brochure on the Multi-country Agricultural Productivity Programme.

improved livelihoods at the places where this is most needed, but also offers the best chance of sustained and long term increases in growth within a reasonable time span.
The capacity of the Food, Agriculture and Natural Resource Directorate of the SADC secretariat to coordinate research in the sub-region is directly vested in the project for the Implementation and Coordination of Agricultural Research and Training (ICART).

The purpose of ICART is to implement a regional programme of actions which will enable the National Agricultural Research Systems (NARS) in SADC member states to enhance their cooperative and integrated national efforts towards improving incomes and livelihoods of small-holder resource-poor farmers, traders, processors and other beneficiaries in a sustainable manner.

This situation analysis for Lesotho therefore provides an input to SADC ICART's regional situation analysis on agricultural research and training for the SADC sub-region. The information gathered will form the background to the formulation of a Strategy for support to regional networks by the SADC FANR. In addition the information gathered will initiate the development of an information system on Agricultural Research and Training in the sub-region.

1.2 Background information on Agriculture in Lesotho

1.2.1 Ecology and Geography

Lesotho has a continental temperate climate with well-marked seasons of spring, summer, autumn and winter. The average temperature ranges from -2^{o} C in winter and 28^{o} C in summer. Droughts occur periodically in three out of every ten years.

There are four ecological regions[5]in Lesotho, ranging between 1,388 to 3,482 m above mean sea level (see Table 1).

1. **The Lowlands** form a narrow belt (20-50 km wide) along the western boarder accounting for 17 percent of the land area and 80 percent of the productive arable land-and and coincidentally, holds the highest population densities estimated at 71 persons per km^2. The lowlands are sub-divided into two sub-zones; The Northern and Southern lowlands, due to their distinct differences in micro-climate and soil types and present different food security zones.
   The Northern Lowlands are characterized by flat undulating topography, moderately good precipitation, red-brown deep and rich alluvial sandy loam soils, with moderate moist climate and incidences of hail storms. It is suitable for intensive cropping and livestock production. Precipitation of about 700-800 mm occurs in the northern lowlands. The Southern Lowlands are also flat and undulating but have shallow duplex acidic and marginal sandy soils and severely gullied. Moderately dry climate

[5] Source: FAOSTAT; Lesotho Food Security Policy & Strategic Guidelines

with poor precipitation and severe drought and incidences of hail storm and strong winds, potentially suitable for cereal production.

2. **The Foothills** forms a narrow strip running from the north-east to south-west adjacent to the lower mountain and supports high population densities and covers 15% of the total land area. It has gentle slopes, reddish-brown/black clay loam soils of basalt origin, cool-moist climate with good precipitation with incidences of hail storm and frost. It is characterized by mixed crops and livestock systems on fragile soils and highly susceptible to soil erosion.

3. **The Senqu River Valley** is a major grassland area supporting communities dependent on livestock in mixed farming systems. It covers 9% of total land area in the warmer part of the country with erratic and poor precipitation. It has irrigation potential and can be used for intensive cropping of high value vegetable and grain crops. Precipitation varies around 500mm in the Senqu River valley and the southern lowland districts

4. **The mountains** range accounts for the largest portion (59%) of the land area and are primarily used for summer grazing and also form unique African alpine and sub-alpine habitats of the Drakensburg range. The Mountains are sub-divided into two; the lower and upper mountains. In the Lower Mountains some mixed crop and livestock systems are possible. In the Upper Mountains small ruminants are raised. It has gentle rolling to steeply sloping topography, fragile thin basaltic soils on high mountains, rich thin alluvial soils in valleys, cold-moist climate with severe incidences of frost, snow and high chill factor. Precipitation is over 1300 mm in the northeast of the Drankensberg Mountains. Heavy frosts in the mountains regions are frequent and determine the length of the summer growing seasons.

Table 1. Ecological zones in Lesotho[6]

Description	Lowlands	Foothills	Mountains	Senqu River Valley
Area – km²	5200 (17 percent)	4488 (15 percent)	18047 (59 percent)	2753 (9 percent)
Altitude range (m)	<1800	1800 -2000	2000-3250	1000-2000
Main Crops	Maize, Wheat, Beans, Vegetables	Maize, Wheat, Peas, Fodder, Potatoes	Maize, Wheat, Peas, Potatoes	Maize, Beans, Sorghum
Vegetation	Crop stubble, reforestation on some hills, fruit trees near homesteads	Poplar and willow trees along streams and gullies, crop stubble, fruit trees near homesteads	Denuded grasslands, indigenous shrubs in some river valleys, stunted peach trees near homesteads	Denuded dry shrubs, brush, few trees in valleys
Summer grazing	Around villages and farmlands	Around villages and farmlands	High mountain cattle posts	Grasslands constraint by drought and land degradation

These variations in characteristics of the different agro-ecological zones necessitate the development of research programmes to address specific constraints and exploit the potentials of each zone.

[6] Ministry of Agriculture and Food Security, (2006) , Kingdom of Lesotho, National Action Plan for food security

1.2.2 Livelihood zones in Lesotho

The six food security zones[7] in Lesotho generally coincide with the agro-ecological zones. Small pockets of peri-urban areas around main towns in the lowlands constitute the sixth food security zone (see Figure 1).

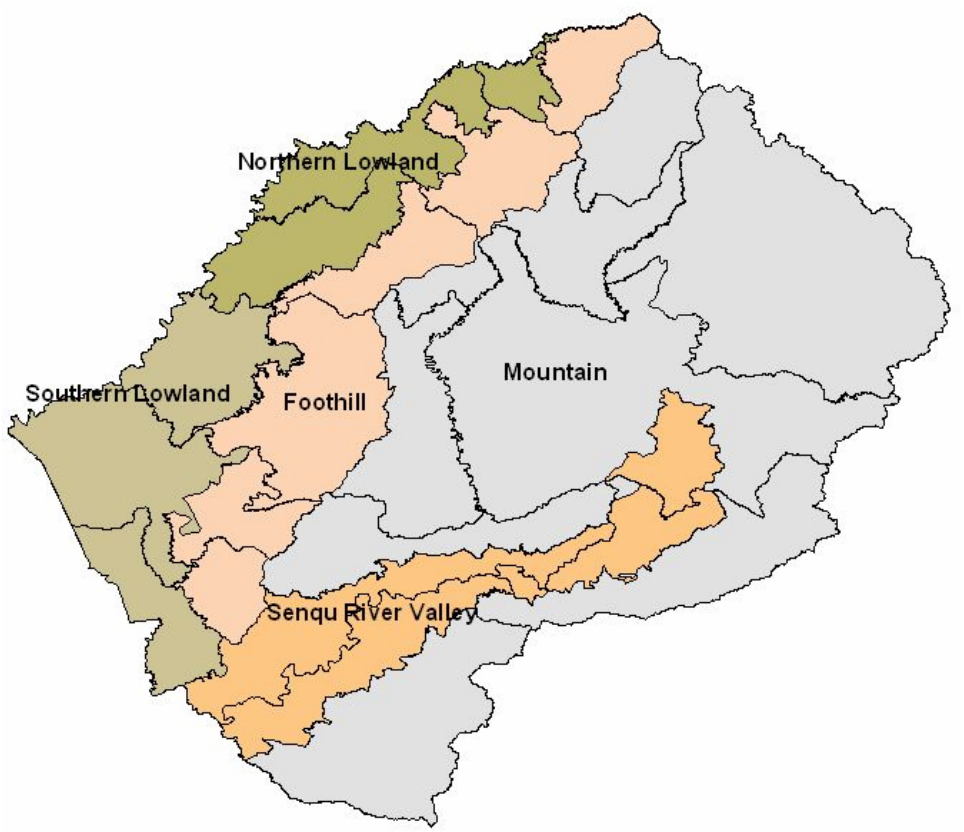


Fig. 1: Ecological and Livelihood zones in Lesotho

The **Peri-urban zone** is estimated to support about 118, 000 people. The poor depends mainly on local wage employment and trade is the single most important source of cash for the better-offs here.

The **Southern Lowlands** hold about 273, 000 people 44% of which are estimated to be poor who are highly dependent on local wage employment, are active in petty trade and often 'livestockless'. About 14% are better-off who have significant numbers of livestock.

The **Northern lowlands** occupy the most productive arable lands in Lesotho and holds about 435, 000 people of which 47% are estimated to be poor and 14% better-off. Crop

[7] Lesotho Vulnerability Assessment Committee (LVAC), (2004), Livelihood Vulnerability Assessment Report.

and livestock sales are an important source of cash income, though the better-offs gain nearly 70% of their income from jobs from elsewhere in-country or South Africa.

The **Foothills** support about 346, 000 people with livelihoods more agriculturally oriented with about 58% poor and 14% better-off, who derive as much as 75% of their food access from their own fields. Livestock holdings are high with the middle and better-off groups having large flocks of sheep and goats, exploiting natural rangelands and cop residues.

The **Mountains** are the least settled part of Lesotho and communities are more isolated for services and markets. The zone supports about 290, 000 people with the key feature of their livelihoods built around livestock keeping, accounting for 40% of the total income of the zone. Up to 60% are estimated to be poor with 16% being better-off. The poor normally receive 15% of their food needs from gifts and relief and the better-offs produce 80% of their food needs from their own crops and meat/milk products.

1.2.3 Economic and social context in Lesotho

Lesotho is a land-locked country, entirely surrounded by the Republic of South Africa (RSA). Preliminary results from the most recent census in 2006 puts Lesotho's 'De jure' population at 1.9 million with 76.3% residing in rural areas[8].

Lesotho's economy is based on limited agricultural and pastoral production, light manufacturing (textile, clothing, milling and leather), and remittances from Lesotho mine workers in RSA and more recently from royalties from exporting water to RSA through the Lesotho Highlands Water project which has increased Lesotho's FDI[9].

With only under 10% of its total land area of 30, 352 square kilometers being arable (approximately 280, 000ha), two thirds of which lie in the low land and foot hills, Lesotho produces only 30% of its food requirement[10]. Lesotho's major export commodity, wool and mohair declined from a combined value of US$12.55 million in 1999 to a wool export value of US$ 9.35 million and no mohair export in 2002[6]. The garment industry export amounted to $450 million in 2004[9].

Analysis of incidence of poverty from the 2002/2003 national poverty survey showed a 56.6 % incidence. The proportion of households that are 'ultra poor' increased from 35% to 39% in the decade 1980 - 1990[6]. There are striking variations of poverty in relation to gender, household size, livelihood patterns, access to basic services and geographic location. Lesotho has one of the highest income inequalities in the Africa.

Lesotho's rural environment has changed over the last two decades, mainly due to urhanisation, land degradation, youth unemployment, stock theft and HIV/ AIDS[11].

[8] BOS, (2007) Lesotho Housing and population census, 2006,Preliminary results
[9] World Bank, 2007, Lesotho Country Brief
[10] PRSP (Poverty Reduction Strategy Paper), 2005 Kingdom of Lesotho
[11] Turner, S. D. (2003)The Southern African Food Crisis, Lesotho: Literature review

Urbanization: About 7% of the population are currently working in South Africa. Women constitute a higher proportion of internal migration with the female and male population of Maseru-the capital- growing by 9.5% and 5.9% per annum, respectively; whilst that of Mokhotlong- a remote district- is falling by 11.3% and 6.4%, respectively for women and men[12].

Land degradation: Land is a major driver to agricultural productivity in Lesotho. About 40 million MT of soil is estimated to be lost from Lesotho's range and crop land, as estimated from the Natural Resources Inventory[13]. In 1980, total arable land was estimated at 450,000 ha, approximately 13% of the country's land area. By 1995, urban expansion and land degradation had reduced this area to about 9% of total land area[14]. Current figure is not available, but it is likely that current arable area has further reduced. Land degradation alone through soil erosion and gully formation is a major concern in agricultural production and natural resource management.

Youth unemployment: Retrenchment of mine workers in RSA has led to a reduction in remittances from 50% GNP in the 1980s to 20% of GNP in 2004[9].

***Stock theft*:** Heavy losses of livestock due to stock theft have constituted a major bane to livestock development in Lesotho. In some areas reported losses sometimes exceeded the recorded numbers slaughtered for consumption[11].

HIV / AIDS: There has been significant reduction and morbidity of Lesotho's critical manpower due to HIV/AIDS. Prevalence is estimated at 26% of adult population and 1.2% of the population was lost to the disease in 2001 alone[15]. It is estimated that it will cost about 3% of GDP to effectively fight the HIV/AIDS pandemic by 2010[8]. The average population growth rate between 1996 and 2006 is less than 1% with negative growth rates in 6 out of the 10 districts in Lesotho[6].

In spite of this environment, agriculture makes a direct contribution of 17% to Lesotho's GDP of approximately US$1 billion, and indirect contribution through linkages with manufacturing and processing is about 10%[11]. Crops hold a dominant share (50%) of Lesotho's agriculture with livestock constituting about 35% and services accounting for the rest.

1.2.4 Agriculture: Importance and practice

In general agriculture in all forms provides 85% of employment in rural areas[13]. Subsistence farming continues to be the most important economic activity in the rural areas in Lesotho. In relation to eleven categories of employment, 51% (35% of rural household heads and 16% of adult household members) of household members were found to engage in subsistence farming with current national unemployment rate at 23.2%[6].

[12] Wason, D. and Hall, D. (2003), Poverty in Lesotho 1993 to 2002 A n overview of household economic status and government policy, CPRC Working paper no. 40 ISBN 1-904049-39-7
[13] MAFS, 2006, National Action Plan for Food Security (NAPES) Ten year Plan 2007-2017
[14] MAFS - ISNAR (1995), Agricultural Research System in Lesotho
[15] UNAIDS, 2001

As described in section 1.2.2, agriculture is at the core of the livelihoods of Basotho. The crops sector contributes 70% to AGDP. The dominant staple crop in terms of planted area (50-70% of yearly cultivated area) is maize. Other major crops include sorghum, wheat, peas and beans. High value crops include potatoes, asparagus, paprika, garlic, fruits and other vegetables. Crop agriculture is dominated by low input, low output traditional rain-fed farming system with grain and pulse yields of less than one tonne per hectare.

Table 2 shows the main agricultural commodities and commodity associations operating in Lesotho as of 2007.

Table 2: List of Key National Commodity Associations in Lesotho[16]

Name	Commodity
Basotho Poultry Farmers Association	Eggs and broilers
Lentsoe-La-Lihoai	Broilers
Lesotho Horticultural Farmers' Association	Fruits and vegetables
Lesotho National Dairy Farmers Association	Milk
Lesotho National Wool and Mohair Growers Association	Wool and mohair
Sankatana Co-operative Alliance of Lesotho	Agricultural inputs
Boliba Co-operative	Agricultural credit and inputs
Lesotho Co-operative Credit Union League	Agric. Credit

Note: There are many other associations which are not national in nature but are at district, regional or local level. e.g tractor and machinery operators are at area and district level only. There are also many co-operatives which operate at district and local levels.

Livestock sub-sector contributes 30% to Agricultural Gross Domestic Product. The sub-sector consists mainly of cattle (25%), sheep (45%) and goats (30%). Other livestock kept in Lesotho include horses, donkeys, pigs and poultry. Cattle are mostly raised for subsistence livelihoods including draught power, milk, fuel (dung), and meat. The sheep are of the merino type and are raised for the sale of their wool and slaughter. The goats are of the Angora type and are raised for the sale of mohair and /or slaughtered for traditional ceremonies. Wool and mohair are the main cash generating activities for small-holder farmers in Lesotho. Lesotho currently produces about 0.3% of world wool output and 10% of world mohair output. Horses and donkeys mostly serve transportation functions in the remote areas of the country. Donkeys are used for transporting goods while horses are used for human transportation.

1.2.5 Constraints to Agricultural Production

Poor agricultural performance in Lesotho is attributed to many factors. These are of technical and socio-economic nature. Technical constraints include i) poor soil management and infertility, ii) inappropriate crop production and post-harvest management practices, iii) inappropriate crop varieties and iv) poor livestock husbandry methods. Socio-economic constraints include land tenure, inaccessibility of agricultural credit and farm inputs and inadequate marketing infrastructure.

[16] Marake, M. V. (2007), Analysis of Agricultural Technologies and Dissemination Situation in Lesotho in support of SADC MAPP preparation

Cropland is allocated to individual holdings while rangelands and other non-crop lands are managed communally. About 90 percent of the farmers are subsistence growers and cropland is dominated by low input, low output traditional rain-fed farming systems which are generally inadequate to provide food security at the household level. The high prevalence of HIV/AIDS has reduced availability of family labour which is increasingly becoming a major constraint to increased agricultural production.

Although Lesotho's water resources are considered more than adequate to sustain economic and agricultural activities they are inadequately distributed spatially and seasonally. Irrigation infrastructure is poor and the weather is often characterized with extreme weather conditions of heavy frost, heavy unexpected rain and drought[17]. This combination presents even more severe constraints on Lesotho's agricultural development.

The contribution of the livestock sub-sector to the national economy has declined over the last decade (about 7.9% GDP). For a country with only 10% of its land area being arable and approximately 75% rangelands, the performance of the livestock sub-sector, has not been commensurate.

Livestock are reared around homesteads for half of the year due to seasonal changes (onset of winter), management practices (shearing, dipping) or to minimize the risk of theft. Thus most stock have inadequate ration during long periods of the year in terms of: poor nutritive value of fodder and forage. Farmers have no tradition of fodder husbandry on arable land or conserving fodder as silage or hay. This leads to insufficient dry matter intake for livestock. Though in some remote areas, rangelands are under-grazed due to remoteness, most village pasture areas support high stocking rates and are severely degraded.

Livestock productivity is low in terms of off-take and animal fibre. This is mainly due to poor animal health and husbandry, low conception rates, weak lambing and kidding, weaning and retarded growth. Veterinary clinics are insufficiently equipped to diagnose the causes of mortality or morbidity.

The effects of customary tenure arrangement for arable land are perceived to constitute a constraint to agricultural productivity and growth because it fails to give farmers adequate security and confidence to invest. The government's strategy is to facilitate the gradual evolution of commercial farming through market-led mechanisms supported by land reform. However, Basotho farmers themselves do suggest that such insecurities do not exist in arable tenure and that the problem is more of farmers just not having the means to invest. It is, therefore, conceivable that land reforms may not transform Lesotho's prospect for food security[18].

The existing fragmented patterns of small arable land holdings makes good sense in terms of risk aversion and equitable distribution of land, but there are strongly held views

[17] World Bank, 2007 Kingdom of Lesotho Managing Government Finances for Growth and Poverty Reduction no. 36359-LS
[18] Adams, M and Turner, S. 2005, Integrating land tenure issues into Lesotho's food security policy

by officials of the Ministry of Agriculture and Food Security for the consolidation of these holdings to larger blocks to make it amenable to mechanized farming and other inputs for higher yields[15].

Given the severe limitations to accessing arable land (less than one ha of arable land per rural family[19]), and high degradation of much of Lesotho rangeland, increased agricultural productivity rests on improved soil management, the use of improved seeds and breeds of livestock, added value of agricultural products and increased efficiency in all agricultural processes across the entire value chain, improved marketing systems and strengthened institutional and human resources and capacities.

1.2.6 Challenges for Lesotho's Agricultural Research System

Agricultural Research faces huge challenges in Lesotho and it imperative that actions are taken to remedy previous under-achievements, ineffectiveness and low impact of agricultural research. This is almost a right for all Basotho.

Agricultural research is weak in Lesotho. There are no institutional or functional linkages between research, extension, crops, livestock services, and private sector organisations. This has resulted in gaps in technology packages promoted for rain-fed agricultural production systems. There is no coherent strategy or on-going programme to appraise production constraints in order formulate research agenda directed at solving these problems, collaborate with farmers to carry out farmer-managed research or fine-tune technologies for transfer and dissemination and research facilities are inadequate[13]

Agricultural research priority setting, partnership building, research performance indicators, monitoring and evaluation, resource mobilization, negotiation, scaling-up and scaling-out innovations and technologies leveraging science to influence policy, have been identified as key areas for effective research management in Lesotho. Researchers' inability to engage effectively with communities is routed in poor communication of agricultural research outcomes, poor agricultural project management and weak agricultural value chains and their management[20]

1.3 Terms of Reference and Approach

This study is an appraisal of the agricultural research and training systems in Lesotho (see Annex 1for the TOR)

1.3.1 Study Approach and process

Process

This study is the third phase of a 4-phase regional- wide analysis of National Agricultural

[19] MAFS, 2003 Agricultural Sector Strategy Document

[20] Annor-Frempong, I. E. (2007), Strengthening Capacity of Agricultural Research and Development in Africa: Lesotho Scoping Study.

Research Systems (NARS). The first two phases involved desk reviews and brief country visits to appraise the situation of the NARS at the sub-regional level.

This phase involves a more in-depth country level analysis.

Data collection methods included desk review, the use of structured questionnaires and unstructured interviews with key informants. A total of 14 institutions of the NARS were contacted and about 10 key informants interviewed.

Structured questionnaires were used to provide new data or an update to a number of data variables on human resource, staff structure, budgetary allocations to sections and/or programmes and in-country linkages.

A national workshop was held to validate the first draft of the situation analysis report and contextualise in-country and regional level research alliances and networking. The workshop discussions and group work output on in-country and regional level research alliances and networking provided further material for the sections on research alliances and networking of the report.

Analysis

The analysis of the current status of the NARS was guided by the process put forward by Collion[21] and Dagg and Eyzaguiree [22].

This included four steps;

- Linking the stated mission and actual activities of the NARS,
- Assessing the consistency between goals and objectives of the research system and those of national economic development,
- The assessment of the organisational structure of the system, various mechanisms, organisational devices and linkages and
- The level and complementarity between resources.

These helped to address critical factors for an effective NARS, including; interactions between national development policy and national agricultural research, formulation of research policy, priority setting and long-term planning, structure and organisation of research systems, NARS linkages with policy makers, NARS linkages with clients and farmers, NARS linkages to sources of global knowledge and technology, programme formulation and budgeting and monitoring and evaluation mechanisms.

The analysis of NARS programmes, research alliances and networking was done within the confines of the following five domains delineated in the TOR;

- agricultural economics, policies, trade analysis;
- production-to-consumption chains, for example agri-business and agro-processing;
- social issues in agriculture (for example land rights, food security, migrations,

[21] Collion, M. (1989), Strategic planning for National Agricultural Research Systems: An overview, ISNAR

[22] Dagg, M and Eyzaguirre, P. B. (1989) Amethodological framework for ISNAR reviews of National Agricultural Research Systems ISNAR Working paper no. 23.

impact of health on agriculture, rural credit, extension and education, social capital, farmers' organisations);
- biodiversity in agriculture (for example variety selection and breeding, and biotechnologies);
- farming systems (including mechanisation; risk management; pest and disease management; input use; innovative systems that lead to improved productivity per unit of labour, water and land; and the relationship between land and water use, agriculture & the environment).

This report also draws from a number of key country-level studies and reports including; reports from the first two phases, Lesotho SCARDA scoping study report (2007), Lesotho SADC MAPP report (2007) and the BCA report of NARS institutions in Lesotho (2007).

1. 4 Concept of the NARS

Innovation systems perspectives on agricultural research and technological change are becoming a popular approach to studying how knowledge and technology are generated disseminated and utilized. This approach represents a significant change from conventional linear approach to research and development by providing the framework for analyzing relationships among heterogeneous agents and institutions and technological and institutional opportunities[23].

The concept of a National Agricultural Research and Development System emerged in a number of developing and intermediate countries in the early 90's in order to adapt the prevailing paradigms and institutional set ups in agricultural research, to the emerging needs for a more efficient dissemination and adoption of research findings[24].

The NARS concept is a soft system and an analytical concept for which no watertight definition exists despite it having been in existence for some 30 years[1]. A NARS is essentially a conglomerate of agencies and actors involved in conducting national agricultural research. It is recognized as an organized system mobilizing the contribution of stakeholders in agriculture. Thus a wider definition of the National Agricultural Research System (NARS) is adopted in this study to encompass all institutions public or private devoting full time or partially of their activities to agricultural research and committed to a national research agenda[25].

In many countries there is still the tendency to equate the NARS with the dominant national agricultural research institute or organization. The concept of a more pluralistic NARS is only gradually being accepted by key players in agricultural research[1]. The current shift towards privatization, decentralization and competitiveness since the late 90s has now made the public sector monopoly of the NARI an obsolete institutional model

[23] Speilman, D. J, 2006 Innovations systems perspectives on developing-country agriculture. A critical review
[24] SADC NARS Situation analysis Briefing meeting, Johannesburg, SA
[25] FAO, Impact of foreign assistance on institutional development of national agricultural research systems. http://www.fao/docrep/005/y4349e/y4349e05.htm accessed: 26.11.07

for building the NARS capacity. The challenge now is finding ways to capture the potential of alternative suppliers to bring more resources into formal research system and identifying how to exploit the complementarities among various participants to develop a well-articulated research system[26].

Categorizations of the NARS

Categorizations of the NARS include, government, semi-public, academic, research institutes, private and supranational research agencies.

- research institutions (public, private and professional)
- universities and Professional Training institutions
- extension organizations
- farmers' organizations
- private companies and their organizations
- Non-Governmental Organisations (NGO) and Civil Society Organisations (CSO)

In September 2007, through the SCARDA project, stakeholders in Southern Africa further adopted the concept for the region, in order to support the promotion of the innovation systems which will mobilize all relevant stakeholders in the design, implementation and evaluation of research and development in agriculture.

The participating institutions into the NARS should include policy, supply side, demand side, intermediary side and capacity building institutions that are linked to agricultural research output generation, delivery and utilization. The following categories and definitions are used[20]:

1. Policy institutions: Institutions that provide policy guidance to training and research. The policies give strategic direction to national priority areas in development efforts to which the NARS must contribute meaningfully.
2. Demand side institutions: Ultimate beneficiaries who utilize research output. These institutions also determine priority research and nature of impact expected.
3. Supply side institutions: Research institutions that generate research output.
4. Intermediary institutions: Institutions that facilitate or enhance translation of research output (knowledge and technology). Depending on the situation, they can play the roles of the demand side, supply side or advocates of both.
5. Capacity building institutions: Institutions that build capacity for capacity building.

Functions of the NARS

A NARS operates for the development and the use of research by the stakeholders, governed by participatory bodies, funded by governments and stakeholders. A NARS

[26] Byerlee, D. and Alex, G. E. (1998), Strengthening National Agricultural Research Systems: Policy issues and Good practice, Environmentally and Socially sustainable Development: Rural Development

plans research and development programs, evaluating the outputs of those programs and supervises the development of international cooperation. The main function of the NARS that ensures effectiveness of the system includes;

1. Governance functions such as; administrative and decision making processes, budget allocation and management, management of resources (experimental stations network, supplies and procurement procedures), personnel policies.
2. Research functions such as research policy and resource allocation, programme formulation, programme implementation, monitoring and evaluation, research coordination and linkages with extension and other stakeholders of the NARS

1.5 Organisation of this Report

The report is presented in five chapters. This chapter briefly presents background information on agriculture in Lesotho. It introduces the NARS concept and its linkage to rural and agricultural development in Lesotho and describes the methodological approach of the study.

The second chapter reports the findings of the study, giving an overview and statistics of the various institutions and stakeholders in the National Agricultural System (NARS) in Lesotho

This is followed in chapters 3 and 4 by an analysis of the coordination of the institutions involved in agricultural research to establish the formal existence of the NARS in Lesotho and research linkages and alliances. The last chapter presents an overall discussion of the NARS and draws out key areas for attention under the ICART programme to improve the efficiency of the NARS through relevant support for in-country and regional network systems in Lesotho and in the SADC as a whole.

The structure and organisation of research systems deal with the institutional arrangements and mechanisms for mobilizing human, physical and financial resources and information at all levels of the research system. It thus includes the size of the research system, the number and types of the research institutes, their responsibilities and mandates, the systems communication and collaboration patterns and the internal organisation of research within individual institutes and experimental stations.

This chapter describes the institutional framework for the NARS in Lesotho and presents key statistics on the NARS, based on the findings of this study.

2.1 Overview of the NARS Institutions in Lesotho and their mandates

2.1.1 A historical perspective of the NARS in Lesotho

Agricultural research systems are context specific and historically determined. They reflect many years of evolution, during which they adapted, as best as possible, to changing circumstances and demands. Box 1 presents a historical evolution of the NARS in Lesotho[27], [28].

2.1.2 Current institutions of the NARS in Lesotho

The current structure of the NARS in Lesotho is still a simple one with one main national agricultural research institution (NARI) and one faculty of agriculture. There are however, a host of Non-governmental Organisations (NGO) and other private sector organizations that are involved in, at limited levels, research and dissemination or demand varying levels of research services. Lesotho is still grappling with difficulties in harnessing the potential of all these institutions to benefit the majority of its resource-poor farmers.

This section is structured according to the categorization presented in chapter 1; viz, public institutions (policy, research and dissemination), Academic (research and training), private, international institutions. Table 3 is presented in the same structure.

[27] Beintema, N. M.,Pardey, P. G. and Roseboom, J. Statistical Brief on the National Agricultural Research System of Lesotho (1995) Statistical B rief No. 18: Lesotho ISNAR INDICATOR SERIES PROJECT: PHASE II: p2-4

[28] Annor-Frempong, I.E., Odenya, W.O and Ntakasane, (2007). Proceedings of the RUFORUM Biennial Conference, Malawi

Box 1: Historical Account of the NARS in Lesotho:

Agricultural research in Lesotho began with the establishment of the Agricultural Research Station in Maseru as a section within the Crops Division of the Ministry of Agriculture, Cooperatives, and Marketing (MACM) in 1952. To encompass the various agro-ecological zones within Lesotho, experiment stations were established later at Machache, Matsieng, Mafeteng, Tsakholo, Teyateyaneng, Leribe, and Mokhotlong. The initial focus of research at these experiment stations was on testing imported agricultural technologies and assessing their suitability for the commercial production systems in Lesotho. Prior to independence in 1966, most of the agricultural research was conducted by expatriate researchers. Currently over 80% of researchers are nationals. Research was mainly carried out as donor-funded projects for which the Government of Lesotho paid the salaries of the local staff but made only minimal contributions to the local operating costs. Prior to 1979 local research appears to have had little impact on agricultural production and conservation endeavors due in large part to a failure to focus on the key problems facing the majority of farmers in Lesotho and the generally poor state of the country's agricultural research infrastructure (Namane 1991).

In 1979 the Agricultural Experiment Station in Maseru and the 11 substations administered by this station were brought together as the Agricultural Research Division (ARD) under the Deputy Permanent Secretary Technical (DPS Technical). In 1981MACMwas restructured into two departments; the Department of Technical Services (DTS) and the Department of Extension and Development (DED). This latter department was renamed the Department of Field Services (DFS) in 1985. DTS took charge of the technical departments which included livestock, crops, research, conservation, and the Lesotho Agricultural College (LAC). DED was responsible for disseminating information, extending technologies to farmers, and managing the District Agricultural Officers.

In 1985 MACM was reorganized into five departments —administration, technical services (including ARD), crop services, livestock services, and field services— and was again restructured in 1987. This time the Department of Technical Services was divided into a Department of Economics and Marketing, which mainly had an advisory role to the minister, and a Department of Conservation and Forestry, while ARD was attached to DFS. In the late 1970s the focus of agricultural research increasingly shifted from testing imported technologies for use on cash-crop farms towards an on-farm research mode of operation. This shift in focus coincided with the initiation of a Farming Systems Research (FSR) project, which was set up in 1979 with substantial financial assistance from USAID. The initial objective of the FSR project was to establish a Farming Systems Research Unit within ARD. In the years that followed this objective was broadened to strengthening ARD's entire research program. During the course of the FSR project, three research stations were established at Nyakosoba, Siloe, and Mokhotlong. The FSR project ended in 1986 and was followed by the Lesotho Agricultural Production and Institutional Support (LAPIS) project.

The LAPIS project consisted of a research component at ARD, a training component at the Lesotho Agricultural College (LAC), and a production component under DFS/Extension of MACM, which worked closely with the Department of Crops Services and to a lesser extent with the Department of Livestock Services. The three components together sought to identify and develop agricultural practices to increase agricultural production and enhance the employment prospects for small-scale farmers. The LAPIS project took a different approach from the FSR project because of the high rate of failure of experiments launched during the latter project. More emphasis was given to on-station work and institutional building than to the establishment of prototype areas as under the FSR project. The production component of the LAPIS project focused mainly on vegetables, small-scale irrigation systems, fruit trees, and range management. The project ended in March 1993. From 1979 to 1993 most of ARD's capital investments (such as buildings and a modest amount of equipment including tractors and other vehicles needed for field research) were funded by USAID. Also the Food and Agriculture Organization (FAO) supported ARD financially during the late 1970s and throughout the 1980s.

Currently,the GoL provides the main source of funding to agricultural research.Within GoL's 10 year plan of national action plan for food security (NAPFS)2007-2017, top priority is placed on restructuring of DAR to lead in changing the way research problems are identified, conduct of research and results disseminated. Improvement of facilities is given second priority.

Forestry research was initiated with the establishment of the Forestry Research Section (FRS). This section was formed in 1979 when an expatriate researcher was assigned to the Lesotho Woodlot Project (LWP). LWP was founded six years earlier to serve as the Central Forest Authority and was administered by the Forestry Department of MACM. Research focused on species and provenance trials, fertilizer application, nursery research, forestry inventory, monitoring pests and diseases, and some seed collection. LWP ended in 1987. Its activities were continued by a newly established Division of Forestry. A National Tree Seed Centre was established by the Division of Forestry in 1988.

Diploma level education in the agricultural sciences is provided by the Lesotho Agricultural College (LAC). LAC was established in 1955. Its programs are authorized by the National University of Lesotho (NUL), but the college is administratively and financially controlled by MACM. NUL was established in 1945 as the Pius XII College. In 1964 it became a campus of the newly established University of Basutholand, Bechuanaland, and Swaziland (UBBS). After independence of the three countries in 1966 the university was renamed the University of Botswana, Lesotho, and Swaziland (UBLS). UBLS was funded equally by the three governments, but had little presence in Botswana or Swaziland during 1964-70. The main campus of UBLS at this time, the Roma campus, was in Lesotho. In the early 1970s two additional campuses were established, one in Botswana at Gaborone, the other in Swaziland at Kwaluseni. In 1975 the Government of Lesotho detached the Roma campus from UBLS and established the National University of Lesotho (NUL). Because the Faculty of Agriculture for UBLS was located at Kwaluseni in Swaziland, NUL created its own Faculty of Agriculture which became operational in 1991."

The number of research studies at the FA-NUL has increased steadily over the last decade. In the late 1990's to early 2000's GoL's decision of a merger and subsequent de-merger of the Faculty of Agriculture to the Agriculture College created some disturbances, instability and funding issues that affected programmes and facilities and may have led to the few research studies during the period of 1998 to 2002. A sharp increase in research was seen in 2007 due to the development of new specialization programmes in the faculty of Agriculture, which had before 2003, only run a general Agriculture programme.

Table 3 shows a list of registered Institutions of the NARS and their mandates.

Table 3: Institutions in agricultural research and training in Lesotho

Institutions	Mandate	Contact Person	Contact Address	Telephone	Facsimile	Website
PUBLIC INSTITUTIONS (POLICY)						
Ministry of Agriculture and Food Security (MAFS)	Facilitate food production from both livestock and crops.Provide policy direction for research and development	Tankiso Mofilikoane (Chief Information Officer) Email: minagric@leo.co.ls	P. O. Box 24 Maseru 100	+266 22316407	+266 22310186	www.lesotho.gov.ls/agric/
Ministry of Forestry and Land Reclamation (MFLR)	Afforestation, soil & water conservation, range management, prevent land degradation	Mrs. M. N. Mota (Principal Secretary)	P O Box 92 Maseru, Thaba Bosiu Building, Industrial Area	+266 2232 2741		
Department of Science and Technology (DST)	Development of Science and Technology Policies and coordinate policy implementation	Mrs. A. B. Williams (Director)	P/Bag A23 Maseru 100 9th Floor Tower Building	+266 313632 (office) +266 58772662 (mobile)	+266 22310054	
PUBLIC INSTITUTIONS (RESEARCH AND DISSEMINATION)						
Department of Agricultural Research (DAR)	To generate, adapt and transfer agricultural technologies and knowledge	Dr. M. Ranthamane (Director) mmranthamane@yahoo.co.uk	P.O.Box 829, Maseru, 100 Lesotho Lesotho Agricultural College campus	+266 22312395	+266 22310362	
Department of Livestock Services (DLS)	Adaptive research, Provide technical backstopping to extension services	Dr. M. Molomo (Director) Marosi_molomo@yahoo.com	PB A82, Maseru 100 Moshoeshoe II, Maseru	+266 22324843 (mobile) +266 62000922	+266 22311500	
Department of Crops	Adaptive research, Provide technical	Mrs M.Mothokho	P O Box 24,	+266 22324827	+266 310517	

Services (MAFS)	backstopping to extension services	(Director)	Maseru 100			
Department of Field Services (MAFS)	Dissenination of agricultural technologies	Mrs. L.V. Hanyane (Director) afs@leo.co.ls	PO Box 24, Maser 100	+266 22323225 (Office) +266 58852330 (Mobile)	+266 310353	
ACADEMIC INSTITUTIONS (RESEARCH AND TRAINING)						
Faculty of Agriculture (NUL)	Training, Research & community service	Dr. W. O. Odenya (Dean)	P O Roma 180, Roma, Lesotho	(Office)+266 22340601 (mobile) + 266 58855569 wo.odenya@nul.ls	+266 22340000	www.nul.ls
Institute of Southern African Studies (NUL)	Research and community service	M. Mapatla (Acting Director)	P O Roma 180, Roma, Lesotho	+266 22340247	+266 22340000	www.nul.ls
Lesotho Agricultural College (MAFS)	Training	Tunda Matsaba (Principal)	P/B A4 Maseru 100, Lesotho Agric, College	+266 22315220 (office) +266 588 70601 (mobile)	+266 22310249	
Leritholi Polytechnic	Training		PO Box 16, Maseru 100			
PRIVATE INSTITUTIONS						
Lesotho Council of NGOs (LCN)	Provide support services to NGOs	Mr. S. Motsamai (Director)	P/Bag A445 Maseru 100	+266 22317205 (office) saabatam@lecongo.org.ls	+266 22310412	www.lecongo.org.ls
Rural Self Help Development Association (RSDA)	Rural development	Mrs. Mampho Thulo	P O Box 0523, Maseru West 105, Lesotho	+266 22311279 (Office) +266 58843517 (mobile) rsda@lesoff.co.	+266 22310456	

				za		
Serumula Development Association (SDA)	Support, advocate for, promote and implement programmes of sustainable Agriculture and Rural Development		88 P.O. Box 708, Qoqolosing Road, Maseru West	(+266) 22317875 Info@serumula.org.ls	(+266) 22317875	
Appropriate Technology Services (ATS)		Sekoja Phakisi	P.O. Box 686, Maseru, 100, Lesotho	(09266)22334439	(09266)22330055	
Gardening for Rural Organization and Well-Being (GROW)	Promote activities in Land Management/Soil Conservation	Karren Storen (Managing Director)	P.O. Box 54, Mokhotlong 500, Lesotho	(+266)-22920205/	(+266)-22920326	
Transformation Resource Centre	Community mobilization and empowerment, lobbying, advocacy, civic education	Ms M. Ntsoelikane trc@trc.org,ls	PO Box 1388 Maseru, 100 1 Oaktree Gardens, Qoaling rd. Old Europa	+266 314463 Mobile: +266 58864475	+266 322791	www.trc.org.ls

Source: Structured questionnaires (SADC-ICART Situation analysis of the NARS in Lesotho, 2008)

2.2 Public Institutions of the NARS in Lesotho

2.2.1 Policy institutions

Policy institutions provide guidance to training and research. The policies give strategic direction to national priority areas in development efforts to which the NARS contribute meaningfully. In Lesotho two main ministries are directly relevant; The Ministries of Agriculture and Food Security (MAFS) and the Ministry of Education. The Ministry of Forestry and Land Reclamation and the Department of Science and Technology of the Ministry of Communication also provide some limited policy direction for agricultural research in Lesotho.

The Ministry of Agriculture and Food Security has the mandate to facilitate food production from both livestock and crops. It has seven departments; Department of Crop Services (DCS), Department of Livestock Services (DLS), Department of Planning and Policy Analysis (DPPA), Department of Field Services (DFS), Department of Agricultural Research (DAR) and the Lesotho Agricultural College (LAC) and Department of Human Resources (DHR). For brevity of this report, the current organogram for the Ministries of Agriculture and Food Security, Forestry and Land Reclamation are given in Annexes 7, 8 and 9. Several efforts to secure audience with the relevant personnel at the Ministry of Education and access policy documents on the direction for tertiary agricultural training in Lesotho proved futile, during the study period. Hence the analysis in this report relates more on the policy direction from the

Ministries of Agriculture and Food Security, Forestry and Land Reclamation and Communication, Science and Technology.

2.2.1.1 Agricultural Research Policy Environment

The environment and policy for conducting research are given in the following documents; The Vision 2020 of 2004, the Lesotho Poverty Reduction Strategy Paper of 2005, the Agricultural Sector Strategy of 2003 and the Lesotho Food Security Policy of 2005.

The **vision 2020** provides the overall policy framework for research conducted by the NARS in Lesotho. The Government of Lesotho (GOL) identifies and understands that agricultural research is a fundamental strategic action to the attainment of three key aspects of its vision 2020. In the Vision 2020 document an efficient and strengthened NARS is specifically identified to constitute critical aspects of the following goals; a) strengthening development of management capacity, b) achieving a well established technology and c) a well developed resource base. In pursuance of these goals, the GoL considers the NARS institutions to be major actors and are expected to be at the fore front of government's implementation efforts[29].

The **Agricultural Sector Strategy** (ASS) identifies research as one of the key government services. It explains that government policy is to be involved in research where public goods are concerned, and spells out principles for the conduct of research and explain the need to coordinate closely with users of research, see annexes for summary of policy (ASS pages 170-175).

The Agricultural Sector Strategy (ASS) explains that training opportunities to improve the capacity and quality of research staff together with increases in remuneration are the two key strategies being adopted by the ministry to remedy the weaknesses in the Department of Agricultural Research (DAR). The Agricultural Sector Strategy calls for new ways of identifying research needs and research projects and methods of carrying out research[30].

The policy clarifies the need for new approaches to identifying research needs and work plans as well as methods for conducting research and disseminating results. This includes problem identification, needs assessment, research project planning and implementation monitoring and evaluation. The specific changes include; developing work plans, research implementation, dissemination of research results, monitoring of impact.

The **Agricultural extension policy** identifies the strengthening of the Unified Extension System (UES) and supports its implementation nationwide. Priority is also put on formal training activities through Farmer Training Centres (FTC). The extension policy deals with areas such as outsourcing, privatization, networking and building of efficient communications channels and proper coordination between and within all levels [20],

[29] Government of Lesotho (2004) Lesotho Vision 2020
[30] MAFS (2003) Agriculture Sector Strategy

2.2.1.2 Linkage between Agricultural Policy and Research/Training programmes

The vision and mission statements of majority of the NARS institutions do recognize the key elements of the national vision and the key ASS goals. During the SCARDA scoping study, heads of the NARS institutions were asked to rate key elements such as 1) poverty reduction, 2) environmental sustainability, 3) HIV/AIDS and gender as espoused in the policy and strategy documents of the MAFS. The same trend was seen in this study. The results are shown in Table 4.

Table 4: The Importance* of Development issues among key NARS institutions

Institutions	Poverty reduction	Gender (involvement of women)	Environmental sustainability	HIV / AIDS	Community Development
Faculty of Agriculture (NUL)	**4**	**4**	**4**	**4**	**4**
Institute of Southern African Studies (NUL)	**4**	**4**	**3**	**2**	**3**
Department of Research (MAFS)	**4**	**2**	**4**	**4**	**4**
Lesotho Agricultural college (MAFS)	**2**	**1**	**3**	**4**	**3**
Department of Livestock Services (MAFS)	**4**	**2**	**4**	**2**	**4**
Department of Field Services (MAFS)	**4**	**1**	**4**	**4**	**4**
Lesotho Council of NGOs (LCN)	**4**	**4**	**4**	**4**	**4**
Agriculture, Environment & Natural Resource Commission (AENR)	**3**	**3**	**4**	**4**	**4**
Rural Self-help Development Association (RSDA)	**4**	**4**	**4**	**4**	**4**
Overall Mean Rating	**3.6**	**2.8**	**3.8**	**3.5**	**3.8**

Source: compiled from structured questionnaire (ICART Situation analysis, 2008 and SCARDA Scoping study in Lesotho, 2007)
*Rating on a 5-ponit scale: 0= not applicable 4=very highly important.

The ratings given to all the key elements ranged from ‘very high to highly important’. The results may thus, indicate that research and development activities of the NARS

attempt to align to these key aspects and the tenets of the agricultural policies and strategies, though actual activities on the ground may not be as effective and supportive of agricultural policies and strategies.

2.2.1.3 Strategic plans and priority setting processes

Majority of the NARS institutions now have strategic plans or are in the process of completing one. Many of the institutions reported that research priority setting processes started with consultations with farmers and demand-side institutions and some stakeholder consultations for identifying priorities for training, though tracer studies were not mentioned (Table 5)

Table 5: Priority setting processes of NARS institutions in Lesotho

Institution	Availability of Strategic Plans	Priority Setting process
Ministry of Agriculture and Food Security	**Yes**	**Needs assessment with stakeholders**
Ministry of Forestry and Land Reclamation	**Yes**	**Needs assessment with stakeholders**
Department of Science and Technology	**No**	**Stakeholder assessment**
Department of Agricultural Research (MAFS)	**Yes**	**Consultation with farmers, Performance management system**
Department of Livestock Services (MAFS)	**Yes**	**No response**
Department of Field Services (MAFS)	**Yes**	**No response**
Faculty of Agriculture (NUL)	**Yes**	**Consultation with MAFS & NGOs, Review of MAFS annual reports** **For training; consultation with stakeholders & department/Faculty reviews**
Lesotho Agricultural College (MAFS)	**Yes**	**For training: Stakeholder consultation**
Lesotho Council of NGOs (LCN)	**No**	**No response**
Rural Self Help Development Association (RSDA)	**No**	**Baseline surveys and needs assessments**

Source: Structured questionnaires (SADC-ICART Situation analysis of the NARS in Lesotho, 2008)

2.2.2 Profiles of the public institutions of the NARS in Lesotho

2.2.2.1 Policy institutions

1. Ministry of Agriculture and Food Security (MAFS)

Vision
By 2006, we, the ministry of Agriculture and food Security will have empowered our clientele to make informed decisions and access necessary resources for sustainable agricultural production and food availability.

Mission
We, the Ministry of Agriculture and Food Security, are committed to provision of dynamic and pro-active leadership in participatory development and implementation of policies and programs with farmers, provision of expert advisory agricultural services to the farming community and agro-businesses leading to sustainable agriculture for the achievement of food security.

Ministerial Functional Values:
The following are the ministry's cherished values which will guide the ministerial operations and service delivery in pursuit of the ministerial vision, mission and objectives.

- Quality Service
- Client/ Customer-Satisfaction
- Professionalism and Discipline
- Dedication/ Commitment to work
- Creativity / Innovation
- Excellence
- Results and Results-Orientedness
- Passion
- Respect, Patience and Humility
- Effective Communication

2. Ministry of Forestry and Land Reclamation (MFLR)

Mission
To provide the overall capacity for an environmentally safe and economically viable agricultural production that ensures food security to the satisfaction of producers, consumers and suppliers, based on an enabling environment ensured by coordinated efforts of all sector players.

Background Information
Although forestry cover in Lesotho is small, ambitions are high to begin to reforest Lesotho to help provide sustainable livelihoods and environmental conservation for Lesotho.

The Department of Forestry is the main driver to support civil society in achieving the national goals in Forestry. An evolution in approaches to forestry has occurred since independence 1966 and lessons have been learned which have influenced government's new approach. As such the government, through the Department of Forestry has begun planning for its new National Forestry Programme for the next ten years. The Government is committed to working through all civil society players, NGOs, CBOs and the Private Sector to promote new forestry livelihoods and environmental conservation in Lesotho. Much of the information provided on these web-pages has been provided by the Department of Forestry for the support of civil society forestry initiatives in Lesotho

2.2.2.2 Research Institutions

Department of Agricultural Research (DAR)

Vision

National agricultural research organisation adequately resourced and capable of efficiently generating sustainable solutions to critical agricultural problems related to food security and poverty , and usable information and agro-technologies to support sustainable, productive and profitable farming and overall agricultural development.

Mission

National agricultural research organisation committed to the application of agricultural science and developing, adapting and transferring environmentally safe and economically agro-technologies to the farming community and agro-industry, through strong linkages with education, extension and industry.

Overall objective (GOAL).

Specific objectives of department of agricultural research (DAR) express the requirements for the realisation of the vision through achievement of the mission statement, and at the same time, to lay down the parameters for achieving in the strategic plan encompassed by the programmes. These are:

-to test and adapt crop varieties, animal breeds, crop and livestock production and management practices, natural resource management practices, and post-harvest management practices that enhance the productivity of the natural resource base and biodiversity

-to test and adapt technological packages for intensification of production of basic grains and vegetables in the most productive lands

-to introduce farm practices that enhance increase farm cash income and lower unit costs of production.

-to introduce new high value, high yielding, pest/disease tolerant/low pH tolerant, and cold/drought tolerant crop varieties.

-to provide technological inputs and production practices that enhance reduction in labour intensity and bring about effective use of agrochemicals, farm equipment (machinery, implements and hand tools) and improvement of farm structures and the timing of farm operations

-to transfer appropriate technologies, relevant scientific knowledge and information, and services (laboratory, library etc), to all stake holders for sustainable agricultural development.

Key performance areas

1. Agronomy research
2. Horticulture research
3. Plant protection research
4. Seed Development
5. Plant Genetic Resources research
6. Livestock research.
7. Natural Resource management research
8. Agricultural Engineering research
9. Food Technology and Nutrition research
10. Research in Extension coordination.
11. Institutional administration and management.

Current Organisational structure. (see the organizational chart in annex 6)

The function organisational structure of the DAR currently comprises eight technical research programmes namely agricultural engineering, agronomy, farming systems, food technology, horticulture, livestock, natural resource management, and plant protection (see Annex 3 for list of research managers and scientists).

Table 6 : Current Research Station Network

Agro-ecological zone	Research Station	Location
Lowlands	Maseru (head quarters)	Maseru
Southern Lowlands	Regional Station Sub-station	Siloe Ts'akholo
Northern Lowlands	Regional station Sub-station1 Sub-station 2	Mahobong Tsifa-li-Mali Sakoane
Foothills	Regional station Sub-station	Nyakosoba Machache
Mountains	Regional station Sub-station 1 Sub-station 2	Thaba Tseka Mokhotlong Lekubane

2.3 Academic institutions of the NARS in Lesotho

In Lesotho, important academic institutions involved in agricultural research and / or training include; the Faculty of Agriculture (FA / NUL) of the National University of Lesotho (NUL), Institute of Southern African Studies (ISAS) of the NUL (the ISAS is a multi-disciplinary institute but also deals with agricultural research), Lesotho Agricultural College (LAC) of the MAFS, Lerotholi Polytechnic Institute (LPI), with focus on civil engineering and domestic/agricultural water resources and Lesotho College of Education

(LCE) that train primary and secondary school teachers in agriculture and natural resources management.

2.3.1 Profiles of Institutions delivering high level training

2.3.1.1 The National University of Lesotho

The National University of Lesotho (NUL) is the only university in Lesotho. Its **Faculty of Agriculture (FA)** at the NUL) was started in 1991.

Institutional Overview
The curriculum lays strong emphasis on agricultural production, coupled with agribusiness and management. It is so designed that a wide spectrum of courses is studied to provide a broad background of in-depth theoretical knowledge and practical skills necessary for a sound understanding of general agricultural practices.

The training programme is thus broad-based, practical, functional and sufficiently flexible to make it relevant to the needs of Lesotho and the wider environment not only in the core agricultural sector, but also in other sectors of the economy.

Objectives
The Objectives of The Faculty of Agriculture include the following:

- Production of graduates at (degree and sub-degree levels) who should be able to accomplish the following:

- Effectively engage in agricultural production research, education and extension services that would provide relevant and appropriate solutions to agricultural and development problems and improve agricultural productivity in the nation and beyond.

- Profitably put their acquired knowledge and skill into operation by establishing and managing their own farms and other agro-allied enterprises, thereby becoming self-employing, as well as generating employment for other people.

- Undertake graduate and postgraduate training in their chosen field of Agriculture anywhere in the world; so as to be better equipped to serve the national as well as international agricultural needs.

- Localisation of training at various degree levels, thereby conserving badly needed foreign exchange hitherto expended on overseas training.

- Serving as an effective instrument for the implementation of the policies of Government in all areas of Agriculture and other facets of the economy, thereby contributing effectively towards overall national development

Basic Regulations
The Degree/Duration of the Degree and Sub-Degree Programmes

The Faculty of Agriculture awards a B.Sc. (Agric) Degree, followed by a B.Sc. (Agric) Honours and M.Sc. degrees. The B. Sc. (Agric.) degree programme has a duration of three years after completion of the Common First Year (Science) of the National University of Lesotho or its recognized equivalent, while the B.Sc. (Agric.) Honours programme has a duration of one year after the B.Sc. (Agric) degree of the National University of Lesotho or its recognized equivalent. M. Sc. degree is by course work and thesis and the duration is 2 years. Details on the M. Sc. programmes could be obtained from the Faculty Postgraduate Handbook. The duration for Diploma programmes is 3 years and the Certificate programmes in Agriculture and Agric. Mechanization are of 3 and 2 years duration respectively.

Minimum Admission Requirements

a. B.Sc. (Agric.) Degree Programme
i) In order to be considered for admission into the B.Sc. (Agric.) Degree Programme, prospective candidates must normally possess at least one on the following categories of qualifications

a) Pass (50%) in Biology and Chemistry obtained from the final examinations of the Common First Year (Science) courses offered by the Faculty of Science, National University of Lesotho, Plus an overall mean of at least 50% (D) in this examination. Passes in Mathematics and Physics will be an added advantage.

b) Overall CREDIT PASS in Diploma in Agriculture/Agricultural Education obtained from the Lesotho Agricultural College/National University of Lesotho or from an institution recognized by the National University of Lesotho.

c) Any other qualification that may be approved by the Senate of the National University of Lesotho.

ii) Irrespective of the category of qualification possessed, all candidates must meet the English Language Requirement of the National University of Lesotho either at the time of entry into the Faculty or before proceeding to Year III or Year IV of the B. Sc. (Agric.) Programme (300 - or 400 - Level) for students whose entry qualification is the Common First year or Diploma, respectively.

b. B.Sc- (Agric.) Honours Degree Programmes.
In order to be considered for admission into the B.Sc. (Agric.) Honours Degree Programmes, candidates must have achieved a minimum of a pass in lower Second Class Division at the B.Sc. (Agric.) Degree Examinations of the National University of Lesotho, or be in possession of an equivalent qualification acceptable to the National University of Lesotho.

Organisational Structure
The current administrative and professional layers of leadership are; Dean, Deputy Dean,

Head of Department, Tutor, Assistant Registrar; Professor, Associate Professor, senior lecturer, Lecturer, technicians. The leaders selected by popular vote from academic staff with virtually no experience in management. There is a Research Coordinator, but no systematic way of coordinating faculty-wide research with other stakeholders of the NARS exists.

A Coordination **Unit for Agricultural Teaching, Research and Development** is underway and earmarked for implementation under the FARA SACRDA programme. The unit will serve as a fulcrum and lead in addressing critical emerging areas for improving research management, academic leadership, implementation and coordination of the FA / NUL's programmes, offer support towards developing effective teaching skills and research methodology skills and practice among staff, forge strategic partnerships to strengthen FA / NUL capacity to effectively deliver on its mandate of teaching, research and community service (outreach).

2.3.1.2 Institute of Southern African Studies (ISAS)

The institute of southern African studies serves as one of the principal centers for identifying, initiating, promoting, and coordinating interdisciplinary, academic and policy-oriented research. Its area of interest is the southern African region-Lesotho, Angola, Malawi, Mauritius, Namibia, Mozambique, south Africa, Swaziland, Tanzania, Zambia and Zimbabwe. This region is tied together by historic, cultural, political, and economic forces which have far-reaching implications for all who live in it. It is the aim of the ISAS to study such forces and make them comprehensible to those decision-makers who deal with the developmental affairs of southern Africa.

Owing to its multi-disciplinarity, the institute has stakes in many institutions of the NARS in Lesotho. It has in recent years extended its activities and is one institution that is earmarked to collaborate with the FA / NUL and Institute of Education to advance the pivotal role that SUTRAD will play within the NARS to avoid duplication of efforts.

Mission
To initiate, promote, coordinate and conduct basic, applied and participatory research with particular emphasis to national development needs in a regional context.

Objectives
- To undertake multidisciplinary research (policy and development)
- To plan, encourage and carry out polity-related and development-oriented research.
- To collaborate a network with other universities, government, communities, institutes and scholars in the region as well as interested organisation elsewhere with similar objectives.
- To provide consultancy services.
- To publicize and disseminate research output.
- To harness information and communication technology for social-economic development.

The ISAS is composed of two divisions:

a. Research division

Mainly focuses on regional and national and national development needs including issues of rural development: agriculture, human rights, regional security and conflict resolution. The division has recently developed into the following fields: environment, social development, health, gender and urban development

Its objectives are:

1. develop a dynamic research agenda taking the constantly changing situation in the region into account:
2. try to further improve and expand the scope and quality of research projects;
3. develop methodologies that empower poor disadvantaged people to take development into their own hands;
4. attract more commissioned and consultancy in areas of the institutes competence;
5. involve more students in research activities;
6. train junior academic staff to identify research topics write proposals and execute research programmes relevant to the country's and the region's development nedds;
7. continue to facilitate research for the teaching staff of NUL;
8. develop an effective financial management plan to work towards achieving greater financial self-sufficiency;
9. to launch a post-graduate programme.

b. Documentation and Publications division.

1. continue to collect documents relevant to the institute's area of interest;
2. build up electronic databases;
3. train readers in the use of databases;
4. make documents available to researches and the general public;
5. market ISAS publications;
6. further enhance the publications programme;
7. access local organisation in developing documentation centers;
8. to launch a post-graduate programme.

2.3.1.3 Lesotho Agricultural College(LAC)

The Lesotho Agricultural College was established in 1964. In 2000, the college was merged with the Faculty of Agriculture at the National University and demerged in 2003.

There are two campuses, one in Maseru and the other one 100 Km North of the capital. The college is responsible for training extension staff at either certificate level (two years)or diploma level (three years) in agriculture, agricultural mechanization, home economics, forestry and natural resources management.

Currently, the LAC is due to embark on a comprehensive re-capitalisation process[31]. All these developments are expected to cause an increase of the man power base of the supply side of the NARS in Lesotho.

2.3.1.4 Lerotholi Polytechnic

The Lerotholi Polytechnic is an autonomous institution under the general direction of a governing council. It is a principal science and technology institution with special mandate of training and developing Lesotho's technical, commercial and vocational skills. It is a tertiary level institution providing market-based competencies with multi-level and multi-disciplinary outputs and seen as the country's future university of technology.

2.3 Structure of the NARS in Lesotho

This section describes the sources of funding, budgetary allocation, structure and quality of staff of the NARS in Lesotho

2.4.1 Sources of Funding and budgetary allocation of core NARS institutions in Lesotho

Table 7: Sources of Funding and budgetary allocation of core NARS institutions in Lesotho

Institutions	Main Sources of Funding	Other sources of Funding	Sections/ programmes	Budgetary allocation (Maloti)	% share	% of AGDP*
Department of Agricultural Research (MAFS)	**Government**	**SANReMP, FAO, Other int. organisations**	**a)Research Admin** **b) Livestock research** **c) Crops research** **d) Natural resource magt** **TOTAL**	**3, 339, 220** **204, 330** **802, 110** **657, 340** **7, 958, 980**	**42%** **2.6%** **10.1%** **8.3%**	**0.67%**
Department of Science and Technology	**Government**	**International organisations**	**a) Policy and Development** **b)Rentals and overheads** **c) Salaries & allowances** **d) Projects** **e) Policy implementation** **TOTAL**	**70, 000** **900, 000** **1, 200, 000** **30, 000** **1, 200, 000** **3, 400,000**	**2.0%** **26.5%** **35.3%** **0.88%** **35.3%**	

[31] Lesotho Agricultural College Strategic plan 2006 - 2010

Faculty of Agriculture (NUL)	**Government**	**Kellog Foundation, IFAD, DFID**	**a) Admin (Deans office)**	**702,562**	**10%**	
			b) Ag. Econs, Extn. & Rural sociology	**1,322,111**	**18.9%**	
			c) Animal Sci.	**2,023.125**	**28.9%**	
			d) Crop Sci.	**1,523,291**	**21.8%%**	
			e) Soil Sci.	**1,112,209**	**15.9%**	
			f) Home Econs	**318,514**	**4.6%**	
			TOTAL	**7,000,812**		**0.59%**

Source: Structured questionnaires (SADC-ICART Situation analysis of the NARS in Lesotho, 2008)* GDP is estimated at $1bn (about 7 bn Maloti) with agriculture contributing 17% to GDP, agriculture's share is about 1.19 bn Maloti

2.4.2 Staff structure for NARS institutions in Agricultural Research and Training

The manpower base for agricultural research and training in Lesotho is small. However, for a country whose natural resource endowments are few, the development of her human resources can significantly make up for the lack in other resources. From this perspective, the development of Lesotho's agricultural scientists is critical to the successful attainment of her vision 2020.

2.4.2.1 Quality of staff

Table 8 shows the profiles of staff in agricultural research and training in the supply side of NARS. Out of the total of 320 staff, 73(23% of staff) are in research, 80 (25% of staff) are involved with training at diploma or higher qualifications and the rest in administration at various levels. This includes double-counting staff who are involved with both teaching and research.

Table 8: The quality of Staff in agricultural research and training in Lesotho

Institutions	Area	PhD	Masters	Bacelors	Others*	Totals
Faculty of Agriculture (NUL)	**Research & Training**	**19**	**11**	**1**	**0**	**31**
	Admin.	**0**	**4**	**5**	**1**	**10**
Institute of Southern African Studies (NUL)	**Research**	**1**	**2**	**4**	**0**	**7**
	Admin.	**3**	**1**	**1**	**0**	**5**
Department of Research (MAFS)	**Research**	**1**	**10**	**20**	**4**	**35**
	Admin.	**1**	**0**	**3**	**4**	**8**
Lesotho Agricultural College (MAFS)	**Teaching**	**2**	**17**	**21**	**9**	**49**

	Admin.				**175**	**175**
	Totals	**27 (8.4%)**	**45 (14.1%)**	**55 (17.2%)**	**193 (60.3%)**	**320**

Staff in agricultural extension and subject Matter Specialists

Department of Livestock Services (MAFS)	**Technical**		**1**	**2**	**1**	**4**
	Admin.		**1**	**1**	**0**	**2**
Department of Field Services (MAFS)	**Technical**		**2**	**13**	**11**	**26**
	Admin.		**2**	**14**	**0**	**16**
Totals			**6**	**30**	**12**	**48**

Source: Structured questionnaires (SADC-ICART Situation analysis of the NARS in Lesotho, 2008 and SCARDA Scoping study in Lesotho, 2007) * diploma and certificate holders

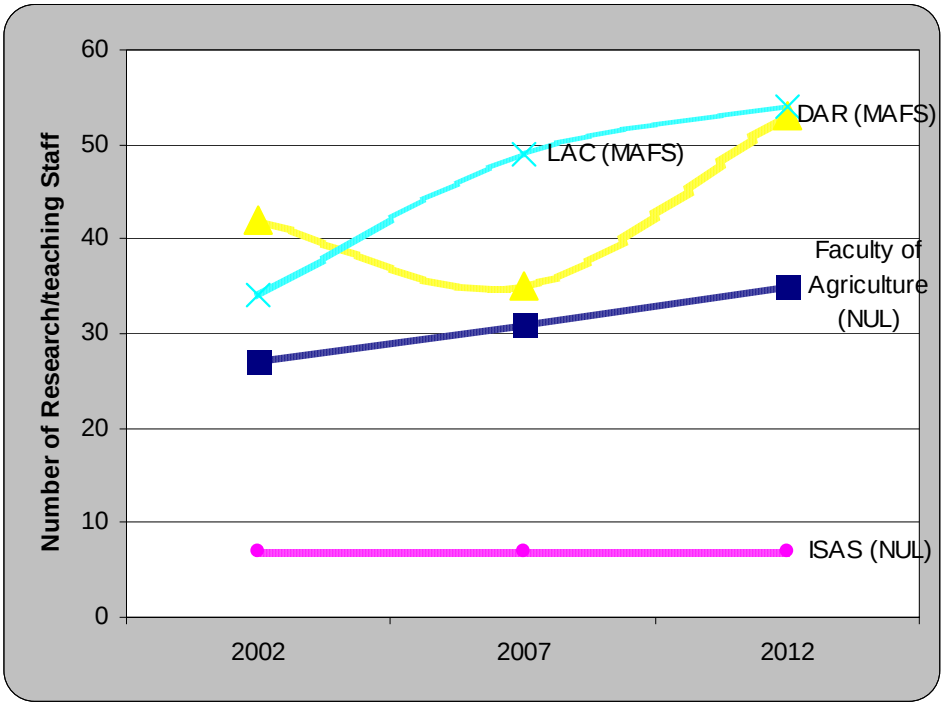


Fig 2. Trends in staff numbers in Agricultural Research and training in Lesotho

Source: Structured questionnaires (SCARDA Scoping study in Lesotho, 2007)

In relation to academic qualifications, majority (60.3%) have sub-degree qualifications. About 14 % have Masters degrees and only eight percent hold Doctoral degrees (Table 8).

With nearly 80% of about 2 million Basotho being agricultural population and ignoring private agricultural researchers, the agricultural population to researcher ratio for Lesotho stands at about 22, 000[20]. This is clearly within the range of the agriculture population researcher ratios estimated for African developing countries of 2, 500 to 50,000 by the Inter Academy Council in 2004[2]. The expected changes in staff strength are shown in Fig 2.

2.4.2.2 Age and Gender Distribution of Staff in Agricultural Research and Training

The ***age distribution*** of the supply side institutions of the NARS shows an important strength. A significant number of the staff appears to be in the younger age bracket (below 35 years) (Fig. 3). A good and timely staff retention plan, capacity building policy and development planned to be implemented without delay can take advantage of this strength. This could be strategic in rolling out a successful NARS programmes to provide the much needed push for the agriculture sector.

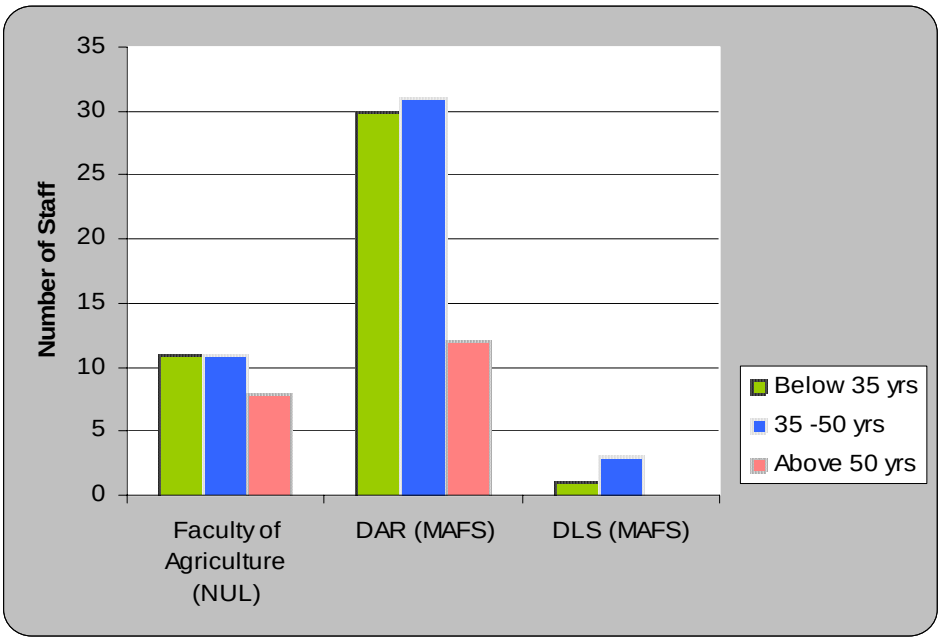


Fig 3: Age distribution of Staff in Agricultural Research and Training in Lesotho

Source: Structured questionnaire (SCARDA Scoping study in Lesotho, 2007)

Unlike many developing countries, Lesotho seems not to have serious ***gender*** imbalances in the staff of many institutions. The NARS institutions are no exception, there are slightly more females than males (Fig. 4).

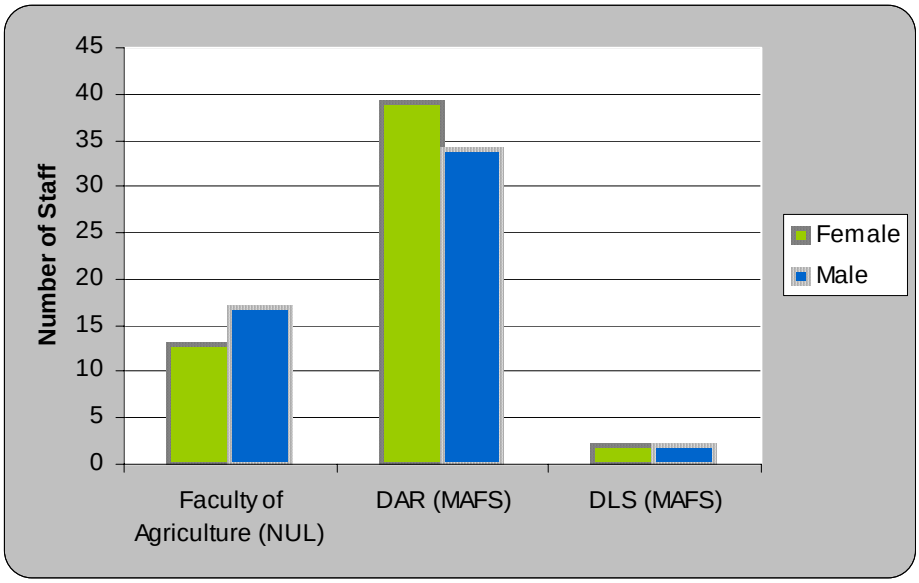


Fig 4: Gender distribution of Staff in Agricultural Research and Training in Lesotho

Source: Structured questionnaire (SCARDA Scoping study in Lesotho, 2007) *DLS was not considered as a supply side institution in this study, it was added merely for comparison

Again this strength should be factored into developing strategies for strengthening the NARS to impact on gender inequities in other sectors of the economy, human and civil rights.

2.5 Research and training Programmes of the NARS in Lesotho

An effective NARS should have direct positive impact on development at national level. This can only happen if research and training programmes are aligned with developmental goals and programmes.

2.5.1 Past and ongoing development programmes

Agricultural development programmes, many of which had research components, have had mixed outcome relative to their intended outputs.

Table 9 shows selected past and on-going agricultural activities and /or programmes in Lesotho.

The main constraints, which explains the poor performance of past programmes have been summarized to include[13]:

- Poor inter-ministerial /departmental coordination. Inter-ministerial and inter-departmental coordination has been difficult to establish and maintain. Key decision committees have been affected by constant changes in the staff representing their departments, resulting in critical lack of continuity;

Table 9. Selected past and on-going agricultural development projects and programmes[13]

Project / programme	Objective (s)	Location	Responsible institutions / (Budget)
Sustainable Agriculture & Natural Resource Management	Improved household food security in the landless & small households	Mafeteng, Mohale's Hoek & Quthing	MAFS & IFAD (US$12 million estimated)
South-South Cooperation	Enable delivery of technical assistance from advanced countries to specific countries in SPFS	National Level	MAFS, FAO, Indian govt. (US$500,000)
Special Programme for Food Secuirty	Increase crop & livestock production	10 selected areas	MAFS & FAO
Agricultural Policy & Capacity Building Project (APCBP)	Raise the capacity of MAFS to identify, assess, implement & pursue effective policies & advice to the rural poor	MAFS, Head office, Maseru	MAFS & several donors (US$250, 000)
Sustainable Agricultural Development Programme for the Mountain Areas (SADPMA)	Improve the food security & nutritional status of the rural poor in the mountain districts	Mokhotlong, Qacha's Nek & Thaba-Tseka districts	MAFS (M2.5 m) IFAD (M15m)
Livestock Registration Marketing & Information System Project	Secure livestock ownership, production & marketing through modern & operational livestock registration & marketing system; Produce livestock information systems	National level to cover all livestock owners	Farmers, MAFS & EDF (US$71, 000)
Livestock recovery through Agriculture Programme	Improve capacity of vulnerable rural households to cope with shocks & stress	Five districts	DFIA, MAFS (£3m pledged)
Irrigation Projects	Increase productivity of the estimated arable 300 000 ha productive to enhance household food security	National in selected high potential areas	Farmers, MAFS, several donors (Canada –US$66, 000; Local Govt-US$180,000, India US$66,000)
Increased Food Production KR2	Supply machinery & inputs for agricultural production	National level	Farmers, MAFS, Japan (US$1.7 m – Japan)

- Lack of skills within the civil service to implement demand-led, market oriented development, which is the focus of the Government and development partners;

- Poor implementation of agricultural activities. While agriculture plays a key role in the livelihoods of the rural communities, most programmes with livestock improvement components have been poorly implemented implemented.

- Poor linkage between the headquarters (Maseru) and the field, which results in poor supervision of programme implementation by field offices and contracted service providers.
- Lack of programme ownership. Public sector staff often regards projects as belonging to the donors. The situation has recently been exacerbated with the hiring of NGOs as service providers;

Based on lessons learnt from past failures, a ten-year National Action Plan for Food Security (NAPFS) has been developed. NAPFS is a multi-sectoral initiative prepared by the Ministry of Agriculture and Food Security in consultation with a number of government agencies and civil society (also see annexes). This plan comprises of five main programmes, which are intended to complement each other in achieving the goals of the food security policy. The programmes include;

- Commercial and household food security
- Natural resource management
- Safety nets and social protection
- Food supply stability and national availability
- NAPFS support structures

It is important that the NARS institutions align research and training programmes to these developmental goals and programmes, and take advantage of some of the structures for the NAPFS.

2.4.2 Priority Agricultural Research / Training Areas among the NARS in Lesotho

Table 10: Current and Emerging Areas in Agricultural Research in Lesotho

Institution	Current agricultural research / development areas in order of priority	Emerging agricultural research / development areas in order of priority
Faculty of Agriculture (NUL)	1) Characterisation of indigenous livestock / crops in Lesotho towards development of selection indices 2) Erosion & its impact on soil fertility 3) Participatory Afforestation & management 4) Gender and sustainable rural livelihoods 5) Water economics and management 6) Food security and HIV / AIDS	1) Characterisation of farmers towards development of a taxonomy for policy and research targeting 2) Diversification options for sustainable livelihood of the poor 3) Conservation farming/organic farming 4) Crop water requirements 5) Development of cage fish farming 6) Trans-boundary water issues 7) Comparative studies of farming systems (Mixed-

	7) Agricultural industrial use of probiotics	cropping e.g. Machobane system versus mono-cropping) 8)Effect of climate change on agricultural production
Institute of Southern African Studies (NUL)	1) Rural Development and Agriculture 2) Human right 3) Regional security and conflict resolution	1) Environment and social development 2) Health, Gender and Urban studies
Department of Agricultural Research (MAFS)	1) Screening new varieties for adaptability 2) Investigation of high value crops 3) Trials on conservation agriculture 4) Seed Development 5) Management of Dairy goats 6) Management of Likoekoes 7) Germplasm (plant) conservation 8) Development of Food composition Database 9) Development of appropriate farm machinery equipment 10) Trials on alien and invasive weeds	1) Screening new varieties for adaptability 2) Technical officers, animal scientists 3) Trials on conservation agriculture 4) Seed Development 5) Management of Dairy goats 6) Development of Food composition Database
Lesotho Agricultural College (LAC)	1) Forestry	1) Irrigation engineering
Department of Livestock Services	1) Notifiable Avian Influenza 2) Sheep scab 3) Rabies 4) Classical swine Fever 5)Foot and Mouth Disease 6) Tuberclosis 7)Brucellosis 8)Sanitary & Phyto-sanitary issues 9)African Horse Sickness 10) Infertility	1) Notifiable Avian Influenza 2)Classical swine Fever 3)Sheep scab 4)Foot and Mouth Disease 5) Sanitary & Phyto-sanitary issues 6)Rabies 7)Aquaculture development
Department of Field services	1) Milk goats 2) Poultry (likoekoes) 3)Fodder production 4)Conservation Agriculture 5)Seed production (basic aspects)	1)Sheep scab control 2)Likoekoe feeding and nutrition 3) Soil Fertility (pH mappings) 4)Cover crops 5)Internal parasite for sheep and goats 6)Irrigation systems

Department of Crop Services	1) Block farming 2)Irrigation Crop Production 3) High value crops production 4) Conservation farming	1) Block farming 2)Irrigation Crop Production 3) High value crops production 4) Conservation farming
Lesotho Council of NGOs	1) Forestry 2) Food Security	
Rural Self-help Development Association	1) Conservation Agriculture 2) Dual purpose chickens	

Source: Structured questionnaire (SCARDA Scoping study in Lesotho, 2007 and SADC-ICRAT Situation analysis of the NARS in Lesotho, 2008) * Areas in order of priority.

2.5 Private NARS Institutions

A significant number of private institutions of the NARS exist in Lesotho. However, many demand research instead of supplying research services (see Annexes for the list of NGOs in Lesotho). Care International and World Vision also do some limited amount of research especially for the Ministry of Forestry and Land Reclamation.

NGOs range from large highly organized and nearly commercial NGOs such as Lesotho National Wool and Mohair Growers Association (LNWMGA) to smaller and less organized ones including pig farmers and poultry farmers associations. Majority are registered members of the Lesotho Council of NGOs (LCN). The LCN has currently 120 members with 77 paid-up by the time of visit. A significant number of the farmers' organizations have become defunct for reasons of lack of accountability, lack of leadership and commitment.LCN members comprise of international NGOs (World Vision, RSDA), local NGOs (LNWMGA) and a number of farmers' organisations.

Whilst majority of farmers' association tend to be livestock associations, a number of farmer federations involving crop farmers have also been formed in the recent past through sustained activities by some NGOs in Lesotho. RSDA has contributed in the development of these federations that are often grouped around common interests and farming systems (e. g. organic farming, block farming).

2.5.1 Profiles of private NARS institutions in Lesotho

2.5.1.1 Lesotho council of NGOs (LCN).

LCN is an ambrella organisation for NGOs in Lesotho, it was established in May 1990 with the objective of providing supportive services to the NGO community the council implements this through networking and leadership training and development, information dissemination, capacity building, coordination, advocacy and representation when dealing with the government and international community.

Mission statement
The primary mission of the council is to stimulate, promote and build capacity with Lesotho NGOs so that, they are stable, democratic, transparent, skilled, empowered, sustainable and responsive to their beneficiaries needs and those of the voiceless and marginalised.

Vision
LCN vision is for Lesotho to develop with vibrant civil society organisations who network and worked towards sustainable management of natural resources, socio-economic development and social justice for all.

LCN Programmes
The programs are designed on the needs of member NGOs. Some of the programmes are umbrella programmes and others are linked to some tof the commissions objectives.

Commissions
Lesotho council of Non-governmental organisations (LCN) is organised into sectoral commissions for effective coordination and management of member programmes. The main objective of establishing the commissions is to group NGOs with similar programmes/objectives together in order to share experiences and coordinate civil society advocacy and programming in Lesotho. The commissions are constituted as follows:

<u>Agriculture, Environment and Natural Resource Commission</u>
The Agriculture, Environment and Natural Resource Commission (AENRC) is a group of member NGOs committed to sustainable agriculture, food security, sustainable livelihoods and conservation of the natural environment in Lesotho. Some of the member organisations have a specific remit of agriculture and natural resource management, but the majority are NGOs that see the work of the commission as a way of assisting their membership and clients out of poverty. The programme is aimed at assisting member NGOs in sustainable agriculture and land management, environmental justice issues, environmental awareness, use and management of natural resources and sustainable development in Lesotho.

- It is focused on building the capacity of member NGOs to consider and tackle environmental and agricultural projects
- To represent the NGO sector on environmental issues of national interest
- To inform and train NGOs on environmental and agricultural issues, international agreements, environmental law and other pertinent issues pertaining to agriculture, forestry, land reclamation and environmental management and planning.
- To enable NGOs to work in partnership with each other, the Government, international organisations and private sector to influence wide scale change on the ground and informing national policy.
- Yearly Action Planning with all members of AENR Commission to guide future work aspirations.

Networking and Advocacy: LCNs AENR Commission is represented on a number of governmental committees to enable the voice of NGOs to be heard at national level. It is also intended that through this networking, the communities that member NGOs work with will be better informed on issues that effect their lives and a channel in which they can lobby the government for more appropriate policies and plans concerning agriculture and the environment. The commission also advocates and lobby for the full enactment of Lesotho's Environment Act 2001 to enable the full protection and planning for the environment in Lesotho.

AENR Commission are involved in the following Governmental Committees;

- Lesotho Biodiversity Support Programme
- Lesotho Sustainable Development Technical Committee
- Lesotho Forestry Steering Committee
- COWMAN – Commission on Waste Management
- Padelia – SADC Environmental Law Project in Lesotho
- Lesotho National Wetlands Management Programme
- Lesotho Scaling Up Food Security Task Force
- CEDAMA – Committee on Environmental Data Management

Environmental Impact Assessment Review Committee on most major Industrial Developments in Lesotho.

Current Programme Areas: a) Food Security - Livelihoods Recovery through Agriculture Project This project began in 2003 and was supported through CARE International. The programme 'trained NGO trainers' to train others in Household Gardening and Conservation Farming Practices. A system called 'Action Learning Cycle' was trained that helps individuals at community level to identify their local resources and constraints to enable them to create and maintain their household gardens.

Support to the NGO Trainers was offered throughout the project through sharing and support meetings where trainees could discuss problems, successes and failures in the project and overcome obstacles together. The programme reached over 800 people and assisted them to set up household gardens to help achieve household food security.

NGO Scaling Up Food Security for Vulnerable Households: After the success of the LRAP Project a new programme has been devised that uses the methodology of training NGO trainers similarly to the LRAP Project mentioned above. The programme has been extended to include water harvesting, preservation and storage, seed multiplication and tree production, land reclamation, biodiversity conservation and marketing as well as household gardening. The programme is aimed at specifically working with vulnerable households in Lesotho through targeted NGOs. It is designed in-line with the Lesotho Food Security Policy (April, 2005) and funding is currently being sought for this major programme working with 14 NGOs.

b. Forestry Livelihoods and Land Reclamation Programme - Forestry Baseline Information Project

Forestry Baseline Information Project: The Forestry Baseline Information Project is funded by the Food and Agriculture Organisation (FAO) and is a partnership project between FAO, The Ministry of Forestry and Land Reclamation and Lesotho Council of NGOs. LCN have been assisted by two of its member NGOs as researchers in the project, Rural Self-Help Development Association and Boseele Association. The projects remit is to collect national information on NGOs, CBOs and Private Sector organisations working in forestry in Lesotho. The information collected will inform the Governments new 'National Forestry Programme' and will be placed on an on-line data-base that will essentially provide a civil society 'Whos Who in Forestry in Lesotho

LCN are developing projects related to increasing the potential for forestry livelihoods in Lesotho. Many of the AENR Commission members are seeking to develop projects in the following areas;

- Income generation from growth of forest and fruit trees
- Honey Production
- Land reclamation through tree planting

The commission is working with the Ministry of Forestry and Land Reclamation to develop projects working with NGOs to train NGO trainers in these areas of interest

Environmental Justice

Lesotho has many environmental and environmental health problems related to industrial practices, lack of environmental protection through the law, land tenure issues and poor waste management.

Currently in Lesotho there is a relatively low ability of NGOs to tackle these issues due to a lack of technical understanding and training.

The Environmental Justice Programme seeks to build capacity in NGOs to respond to, lobby against and monitor some of the major environmental justice issues in Lesotho.

The programme has a working group of 6 NGO's who have recognised 7 pertinent areas for Lesotho in terms of Environmental Justice – mining & quarrying, land tenure, textile industry, conservation, environmental law, water issues – dams, pollution & access, waste management.

Civil Society Support Programme

The key project objective is to support the development of a dynamic and sustainable civil society engagement in monitoring and shaping the implementation of the Poverty Reduction Strategy (PRS). The project aims to improve civil society effectiveness in engaging state policies and also in influencing poverty programmes through policy analysis and public participation. This work originates from the key developmental policies, namely the Lesotho National Vision 2020, the Poverty Reduction Strategy Paper and the Millennium Development Goals. The expected output is an enhanced civil society organisational development and institutional capacity in evidence-based advocacy, poverty monitoring and evaluation on key issues.

Information Dissemination Programme
The main objective of the programme is to ensure that there is sharing of information within and beyond the NGOs as well as communicating effectively with the public. The activities for this programme are mainly focused on documentation, capacity building and publicity;

- NGO Web
- Media Workshops
- Updating website
- Press releases

Human Rights Monitoring:
The purpose of the Democracy and Human Rights Programme of the Lesotho Council of is to coordinate, network and build the capacity of member NGOs in a view to consolidate democracy and promote human rights. This is done to enhance and improve the effectiveness and efficiency of the NGOs.

Democratic and Elections Management
The objective is to contribute to the enhancement of democracy, good governance and management of elections in Lesotho through training and coordination of member NGOs.

2.5.1.2 Rural Self-help Development Association.

Registered in Lesotho as a non government oragnisation since 1991 the Rural Self Help Development Association (RSDA) exists to irradicate extreme hunger and improve the livelihoods of rural basotho by supporting sustainable agriculture, facilitating self-help and enabling rural communities to become sustainable.

RSDA works with 71 small scale farming groups schools and support groups off people living with HIVAIDS (more than 3500 farming households and 6000 school children organised into three federations in Berea, Mafeteng and Mohale's hoek district).

RSDA provides technical support to these communities through its professional project officers and rural based field officers and is highly regarded for its innovative activities, including promoting the Machobene farming system, permaculture, water-harvesting, seed security, HIVAIDS strategies conservation farming, chicken hatchery and work in the dairy sector.

Protecting/improving food and nutrition security of orphans and HIV/AIDS affected children
Orphans and children affect by HIV/AIDS in the Mafeteng district have benefited from an FAO sponsored project to protect, to improve their food and nutrition security.

The short term project saw 1072 households and three primary schools (with 1288 pupils) undergo training, receive seeds and begin vegetable gardens.

Parents of students at each of the schools were also involved in the school gardens to encourage similar gardens to be created at home and slso for security and ensure the gardens were maintained during school breaks.

Local farmers and teachers from the school were given training in permaculture and nutrition and taking of field trips to Lesotho based farms were permaculture is used. These farmers and teachers then because mentors to other community members and pupils/parents.

Topics covers in the training included permaculture's ethical and ecological principles, plot designs, soil fertility enhancement, pest management, water harvesting and seed collection.

Another aspect of the project also saw 375 households in Mafeteng successfully raise dual purpose chickens for their own consumption and for sale to other community members. A total of 2256 chickens were distributed to 375, households, each receiving 6 chicks.

2.5.1.3 Serumula Development Association

Serumula is a National NGO, a service provider and a business development service facilitatator. We deliver and promote cost effective and attractive business services to the rural people, mainly to address job creation, environmental restoration, self-help vs dependency syndrome and the spread of HIV/AIDS.

We advocate for employment of integrated approaches to rural development, fusing business principles with rural development initiatives in persuit of self-reliance of rural communities. To this end we work in partnership with other development organisations and business enterprises in Sustainable Agriculture and Rural development either as clients, direct partners or associates.

Serumula is an NGO that concentrates mainly on resource management sector. The emphasis is on projects and processes that promise sustainability, marketability and adaptability to local conditions.

Vision
The vision of Serumula is to achieve improved and sustainable livelihoods of rural people in Lesotho and the mission is to support, advocate for, promote and implement programmes of sustainable Agriculture and Rural Development.

The main areas of work being developed and implemented by Serumula are:

- Project management and process development in close cooperation with SMEs, NGOs, communities and farmer associations. Economic and social viability and aspects of sustainability and social justice are key principles.

- The Machobane Farming System as a promising concept for resource poor small-scale farmers (intercropping, soil restoration, self-help, willingness). Currently, Serumula is focussing on three aspects: production training, marketing of surpluses and introduction of bookkeeping with model farmers. Close cooperation with MADF, RSDA and GROW.
- Low Cost Drip Irrigation and other forms of affordable micro-irrigation. The basic idea is to develop and market devises based on marketing studies and driven by market forces.

Research
The projects anchor primarily on community needs and in turn are informed by overarching national policies such as Poverty Reduction Strategy, Food Security Policy, etc which aim at:

- Poverty Alleviation - Employment Creation - Income Generation and - Household food security.

The focus of the projects is two pronged (economic and social), based on potential economic and social drivers for specific operational sites.

2.5.1.4 .Appropriate Technology Services

ATS researches appropriate technologies for use and dissemination throughout Lesotho.

Vision
Our vision is to see Lesotho break through future economic success, through the development of technology appropriate to the application, thereby achieving optimal economic standards throughout the country. In practical terms, one of the ways we aim to work towards this is by training entrepreneurs to make products which:

- Have been proven to sell well at profit.
- Help sustain future of Lesotho because they satisfy our set criterion

The Mafeteng district is one of driest in Lesotho suffering three drought affected years in every ten years. During the project the district received little rain and some households had to contend pests and hail when it did rain.

Although, more than a 1000 household registered to take part in the project there were many other households and schools for neighbouring villages also interested in getting involved.

2.5.2 Channels of Demand articulation by farmers and communities[20]

Systematic and organized channels for demands articulation by farmers and their organizations are not common in Lesotho as is the case in many developing countries. A few channels for demand articulation exist, though these tend to be diffuse and are less frequently accessible to farmers. In general the majority of farmers, being less assertive, find it difficult to bring out their real problems and tend to be led or buy in to what their more elite colleagues or extension agents (both public and private) are selling (i.e. technologies they want to sell).

1. Informal farmer-to-farmer routes: Farmers cumulatively build their knowledge over years. They tend to get new ideas and innovations through other elite Farmers. For example, a number of farmers in Lesotho are in contact with other farmers especially in RSA. Through this source, they build their own ideas about new technologies and may articulate their demand for research on specific queries individually or collectively channel it through their national committees or sub-committees to the Department of Field services, Crops Services, Livestock Services who may in turn pass these on to DAR or to FA / NUL (NUL), NGOs.

2. Formal irregular routes: Needs assessment studies that sometimes precede community projects and programmes also provide opportunities for farmers to articulate their demand. The DFS sometimes engages farmers in action learning cycles in order to develop Community Action Plans. During such sessions farmers are taken through the prioritization of their problems and demand.

3. Public Structures for contact: There are, in total, 67 Agricultural Resource Centres (ARC) across Lesotho, about an average of 7 in each of Lesotho's 10 districts. The centres provide technical support to farmers. In like manner, farmers have some access to channel their problems through these centres. This provides a platform for farmers. Other platforms include farm visits (very irregular) and agricultural shows (annual). The farmers' federations also provide an interface and platform for sharing and demand articulation between farmers and service providers. The formation of local and national fora for small scale farmers also provide platforms for dialogue

2.5.3 Weaknesses and strengths of farmer – service provider interface

Lack of linkages between and within institutions often compromises the quality of facilitation by especially public extension staff.

One of the underlying root causes of this poor interface between farmers and service providers is fact that majority of farmers are poor. They just do not have the energy and time to put in the necessary effort. For the large majority, the importance and value of linkages are not easy to see. This permeates the entire system from farmers to the technical people. Seeing the bigger picture and the strength of collective action has so far been elusive. Poor organisational capacity, poor leadership, moving beyond structures and ideas to implementation, combining strengths of different institutions and translating these to community development are the missing ingredients.

Agricultural training has also not met the needs of the demand side of the NARS in Lesotho. A number of critical skills are missing in agriculture graduates.

"Graduates are narrow in the technical areas, but what is worse is the fact that they lack critical thinking and their analytical and application skill are poor, they are too ignorant of the realities of agriculture in their own country, they find it difficult to accept that they can be taught by the farmer and that the farmer knows more, they lack the practical, multi-disciplinary skills and the soft skills to deal with farmers." (Annor-Frempong, 2007)

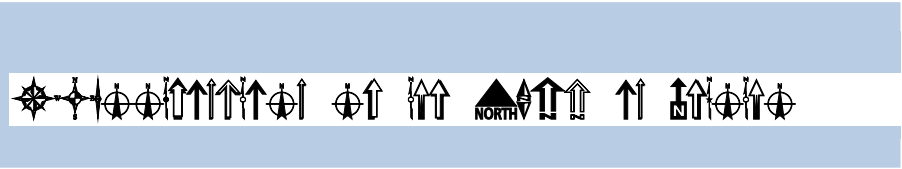
The underlying problems here was ascribed partly to 1) the societal value system of placing premium on academic degrees but with poor differential reward system for excellence and 2) structure and overemphasis of our training curriculum on 'vertical learning' at the expense of 'horizontal learning'

Three critical needs emerge;

1) Difficulty in building and sustaining farmer groups

2) Difficulty in engaging partnerships involving farmers

3) Weak and few platforms for demand articulation and accessibility of supply side institutions.



The weaknesses and ineffectiveness of the NARS in Lesotho are mainly due to the difficulty in maintaining the critical mass of well qualified research and extension personnel. There is generally poor of coordination of the NARS due to lack of leadership and sometimes technical expertise.

3.1 Coordination of the NARS

Coordination among the NARS institutions has been one of the major problems thwarting the formal establishment of a pluralistic NARS in Lesotho. Essentially, no institution is mandated and supported to carry out full coordination role of the NARS in Lesotho.

The development of the current Nation Action Plan for Food Security (NAPFS) has created a national Task Force to monitor and coordinate all programmes of the NAPFS to ensure successful implementation of the programme. Formal linkages of this set up to research institutions should be a worthwhile approach to pursue in Lesotho.

3.1.1 Institutional Structures for coordination

The NARS institutions may have interesting and elaborate vision and mission statements, but there is lack of the fundamental understanding among the NARS institutions regarding how they link to each other and the actual actions that will strengthen and make the entire system effective.

There should be the understanding that no one single NARS institution is more important or secondary. The difference should be seen more in the roles each play, these roles need to complement each other and combine meaningfully towards a shared goal and vision.

It is also important to understand that institutions need not be shut within the confines of mandates alone or restricted by structural brick walls. The rules, processes and strategies that bring about the well being of Basotho, or a healthy and food secure nation clearly transcend structural walls of the buildings that house different departments and 'institutions'.

3.1.1.1 Plans to improve coordination of the NARS

Over the years, there have been attempts to remedy the weaknesses in the generation and dissemination of technology to farmers in Lesotho by forging linkages to strengthen especially the DAR, LAC and DFS in carrying out their mandates. In 2000, a merger between FA / NUL (NUL) and LAC (MAFS) was tried. However, within 3 years, there

were claims that, the merger had created a weak linkage and control of MAFS on LAC and there was apparent focus of NUL on academic issues at the expense of extension delivery. The combination of these two factors within the 3 years had already led to poor quality of the graduates. This led to policy decision to de-merge the LAC from NUL in 2003 and re-absorb LAC into MAFS.

The weaknesses in the research output generation, dissemination and technology adoption by farmers has persisted unabated. Already, there is a proposal at advanced stage to create the Lesotho Institute of Agricultural Development (LIAD) by consolidating DAR, LAC and DFS[32], as an autonomous institution. It is important to mention that this idea of creating an autonomous LIAD, had been put forward together with other viable options as far back as 2001 during the strategic plan workshop of the then MOCLR during the World Bank funded Agricultural Policy and Capacity Building Project (APCBP)[33]. The other options included; 1) the elevated DAR joining other departments of the MAFS, i.e. DAR as a division under DFS, DAR as a department alongside DFS, or as a special entity at equal administrative level; 2) a NUL option that included DAR as a semi-autonomous part of the National institute of Agricultural Education with research under NUL or as a semi-autonomous body such as ISAS within the NUL.

More recently, under the SCARDA project of the Forum for Agricultural Research for Africa (FARA), the Faculty of Agriculture of the NUL is earmarked to develop its proposed coordination unit for agricultural research, teaching and development, (SUTRAD). Linkages between the institutional structures to be provided under this unit and other institutions of the NARS will also go a long way to elevating coordination of the NARS for agricultural development in Lesotho.

During the validation workshop for this study, participants acknowledged the need to establish a functional NARS that will adequately respond to developmental needs of Lesotho. The workshop formed a six-member Lesotho NARS Facilitating Committee (LNFC) see Annex 10 for workshop report.

In order to dispel the widely entrenched perception in Lesotho, of equating the only NARI (the Department of Agricultural Research DAR) to the NARS, participants who (Directors and representatives of majority of the NARS institutions in Lesotho) elected the FA-NUL to chair the Lesotho NARS Facilitating Committee (LNFC) to steer establishment of a NARS Coordinating Body for a functional NARS in Lesotho.

3.2 Relationship between stakeholders of the NARS in Lesotho

No systematic form of structure exists between demand, intermediary institutions and supply-side NARS institutions. However some intra- and inter-relationships occur

[32] MAFS, (2004) Report on the establishment of Lesotho Institute if Agricultural Development (LIAD)
[33] Phororo, D. R., and Ntsane, C. (2001) MOACLR / APCBP Final report on developing a Strategic plan for the National Agricultural Research Orgainsation

between them. These interactions occur in the form of meetings, conferences, workshops and personal contacts.

These linkages are weak because of lack of coordination, low frequency of contact, lack of commitment and not having a shared vision. Fig 5 exhibits institutional relationships based on the rating of the perceived strength of linkage between different institutions on 100mm line scales. Clearly, with the exception of a few significant relationships between DAR, FA- NUL, DST with NGOs like RSDA, Serumula, CARE international and World vision, there is a general fragmented relationship between the core NARS institutions with intermediary institutions of the NARS. All the intermediary institutions contacted in this study appear to have average to good relationship with farmers.

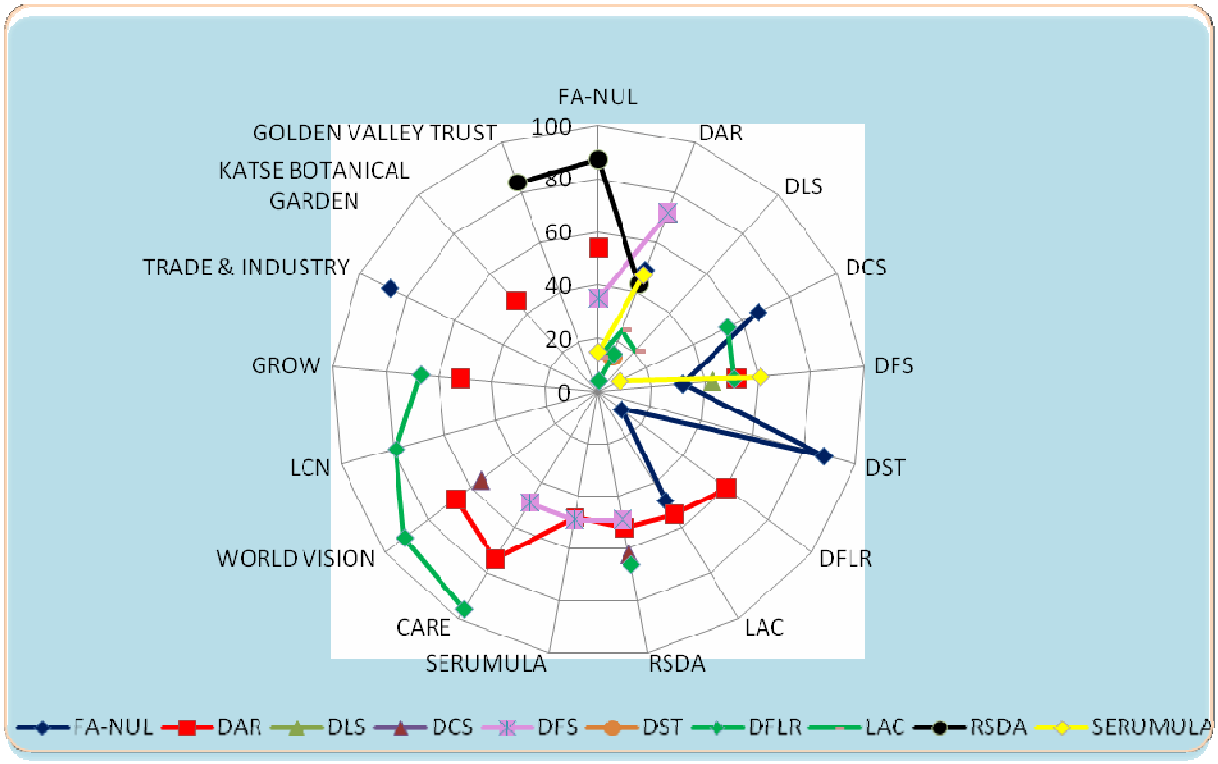


Fig. 5 Relationships[1] between NARS institutions in Lesotho ([1]strength of relationship rated on a 100mm line scale)

The nature of the relationships range between attachment programmes to very limited levels of research collaboration. A number of institutions were of the view that poor collaboration and linkages was due not knowing what research activities other institutions are engaged in.

The clusters of linkages observed among the NARS (Fig 5) could form a very good basis towards understanding and developing a stronger networking to improve the general coordination and effectiveness of the NARS. Research activities need to be advertised to elicit greater collaboration among the NARS institutions.

3.3 Research needs and needs for cooperative relationships

Most of the private sector institutions that constitute the demand side of the NARS, are involved in dissemination, demonstrations of proven technologies, advice or pre-testing of new technologies. Figures 6 and 7 show the research needs of a few NGOs and core NARS institutions in Lesotho.

While the three most important research needs of the NGOs in aggregate terms centre more on research delivery, research management and human resources management, the needs for the core NARS institutions centred generally on research management, institutional capacity and human resource management.

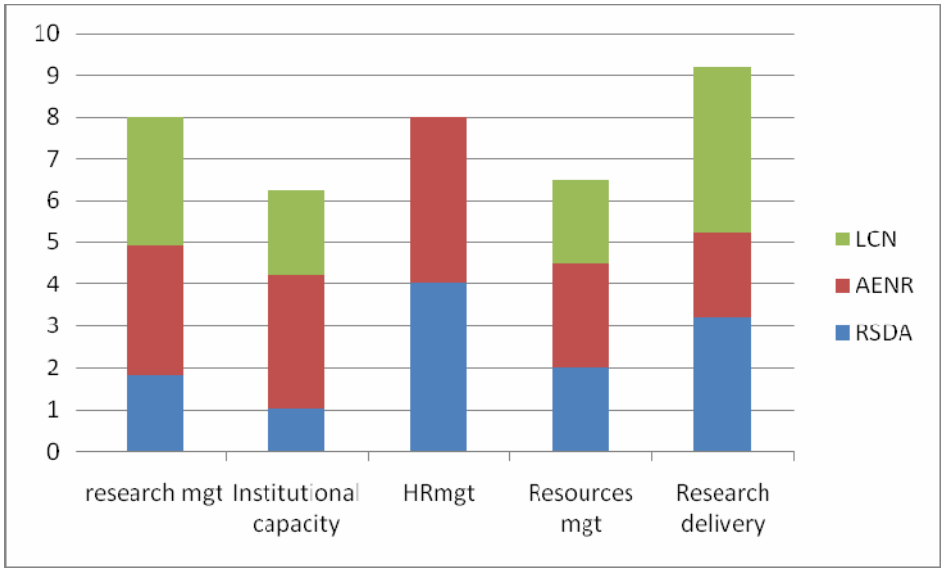


Fig. 6: Research needs among private NARS institutions

Source: Structured questionnaire (SADC-ICART Situation analysis of the NARS in Lesotho, 2008)

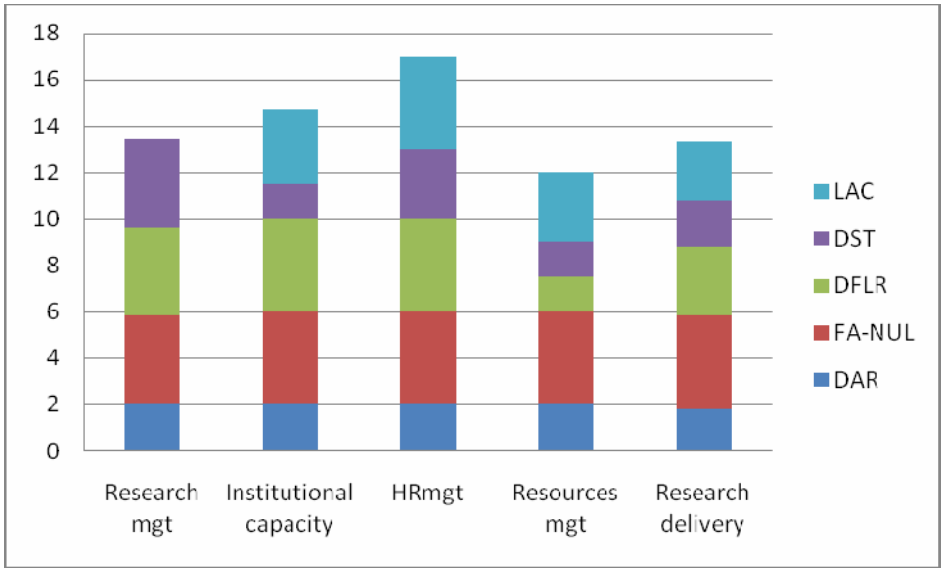
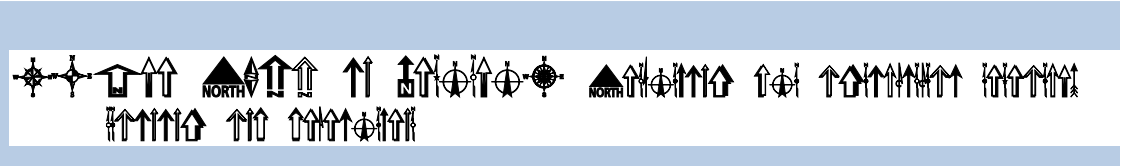


Fig. 7: Research needs among core public NARS institutions

Source: Structured questionnaire (SADC-ICART Situation analysis of the NARS in Lesotho, 2008) rating done on a 5-point scale of 0 -4



The development of partnerships leads to creation of synergies and complementarities in agricultural development. The importance of partnerships is fully recognized and accepted by many stakeholders in the NARS, however in real terms, its value is difficult to see. This is because for many, the real value of partnerships can only be perceived in the long term, and does not appear meaningful to different people who work towards different time horizons.

4.1 In-country research alliances among the NARS in Lesotho

The linkages between the different institutions of the NARS in Lesotho are very few and weak. Table 11 shows that very few of the NARS institutions have good linkages, if any. Apart from the FA/NUL, DAR and DFS majority of the NARS institutions hardly have any linkages at present.

Table 11: Institutional partnerships and membership of research networks

Institution	Partnership / Network	Names of Partners/ members	Programme	Funding
DAR	Serumula World Vision	Leholoane	Land and Water development Seed development	
FA / NUL (NUL)	Dept. Sci. & Technol (RSA) Dept. Sci. & Technol (RSA) Dept. of Research Horticulture Farmers Association University of Florida RSDA MAFS		Tissue culture Research Tissue culture Research Animal and Forage HIV/AIDS & Food security Student Attachment Student Attachment	$117, 000 (DFID) $528,000 (National Research Foundation) $150,000 (IFAD) $520,000 (Kellogs foundation) NUL NUL

ISAS (NUL)	ACP Cooperation		Publications	CTA
LAC	None			
DLS	DAR FA / NUL (NUL) Lesotho National Wool and Mohair Growers Association		Disease investigation Student Attachment	NUL
DFS	GROW SEND-A-COW SERUMULA RSDA PELUM KELLOG FOUNDATION FA / NUL (NUL)		Machobane System Keyhole plots Horticultural development Small-holder dairy/chickens & Block Farming Keyhole plots Breeding Rams Improvement Student Attachment	NUL
DCS	DAR FA / NUL (NUL)		(only a weak linkage) Collaborative research on adoption of Technologies	
AENR	FA / NUL (NUL) MAFS			

Source: Structured questionnaire (SADC-ICART Situation analysis of the NARS in Lesotho, 2008 and Lesotho SCARDA Scoping study, 2007)

Based on self-rated performance, many of the (supply-side) NARS institutions seem to recognize that they are performing far below what is expected in their research, extension activities and in developing linkages. The establishment of linkages was rated as the weakest set of activities performed. Table 12 shows mean scores of 3.3, 3.0 and 2.3 were given for research, extension and linkages, respectively. In deed forming linkages appear to be the most difficult for the NARS institutions and has been elusive to date. Much more effort will be required to strengthen this weakness.

The study identified three main priority areas in agricultural research and development. These were on;

1. Environmental issues especially on soil and water and conservation. This is expected given the importance of land and water issues in Lesotho

2. Technical issues and industrial use of technology.

3. Food security, farming systems and sustainable livelihoods.

Multi-disciplinarity therefore seems to be the key requirement in majority of the areas. This is an approach that needs to be fostered among the NARS in Lesotho.

Table 12: Self-rated Performance* for research and extension linkages NARS institutions

Institutions	Research activities	Extension activities	Linkages
Faculty of Agriculture (NUL)	**3**	**3**	**2**
Institute of Southern African Studies (NUL)	**4**	**-**	**3**
Department of Research (MAFS)	**3**	**3**	**3**
Lesotho Agricultural College (MAFS)	**-**	**3**	**1**
Mean performance score	**3.3**	**3**	**2..2**

Source: Structured questionnaire (SADC –ICART Situation analysis of the NARS in Lesotho, 2008 and SCARDA Scoping study in Lesotho, 2007)* Rating on a 5-ponit scale: 1= very poor 5= excellent by Directors of the respective institutions

Generally, some structures and plans exist among the NARS in Lesotho for partnerships, however these are very weak. As alluded to in the previous chapter, partnerships and linkages constitute the weakest set of activities in the agricultural innovation system that confront all the NARS institutions in Lesotho. These may be due to institutional barriers, poor management practices within institutions but also due to human barriers such as lack of motivation, lack of confidence and competitiveness.

The critical needs of the NARS in Lesotho are many but useful partnerships and linkages may constitute the underpinnings of developing mechanisms to surmount some of the key problem areas in the research-technology-uptake continuum.

4.2 Research Alliances and Cooperation with regional international research institutions

Research alliances between NARS institutions in Lesotho and other research institutions across the SADC are largely limited to a few institutions in the RSA for obvious reasons of proximity (Table 13). The poor and weak internal and external linkages among the NARS in Lesotho also influence the linkages with institutions outside the country.

It will be important for ICART to also help promote linkages with other institutions in other SADC countries with similar interests with especially DAR and FA-NUL who are the core NARS institutions.

Table 13: Some External linkages and research alliances for the NARS in Lesotho

Institution	Regional institutions sharing linkages	International institutions sharing linkages
FA-NUL	ILRI, Universities (University of Free State, Kwazulu Natal, Mandella Metropolitan, Forthare)	FAO, Universities (South Florida, Tennessee, Toronto, Ithaca Community College
DAR	ARC in RSA	FAO, CIAT, CYMMIT, University of Tennesse
MFLR	-	FAO, GTZ, UNDP
Serumula	-	FAO, CSIR

Source: Workshop Group work (SADC-ICART Situation analysis of the NARS in Lesotho, 2008)

Informal internal linkages need to be strengthened as a first step towards strengthening and fostering research alliances with regional and international institutions.

Interdisciplinary Working Groups and Research Groups for specific national problem areas and themes may prove very useful for Lesotho. Working Groups on themes especially on environmental issues (such as soil and water and conservation), industrial use of technology, Food security, farming systems and sustainable livelihoods may form the needed blocks with sufficient capacity to generate and / or absorb utilize information. This will foster improved regional research alliances with other SADC institutions and position the NARS in Lesotho to benefit from the enormous knowledge flows that is available in regional and international circles.

4.3 Development of new partnerships: Opportunities and constraints

The quote below captured the mood and views about partnerships among the NARS in Lesotho during an earlier study[20].

'Partnership is about going the extra mile, making the necessary management changes to accommodate different institutional norms, rules and processes. It is about foresight and making sense of today's realities against the expectations of different time horizons, it is about finding the time in a rocketing world and allocating scarce resources to make investments in uncharted waters not exactly under one's control.' Annor-Frempong, 2007

For many institutions the time and effort required to establish viable institutional partnerships is not worthwhile. There is the general difficulty of appreciating the dividends. The few attempts have been fraught with mistrust or lack of shared goals and priorities.

2.5.2 Opportunities and Constraints

Some institutions acknowledge that, the culture of sharing knowledge and experiences that exist within some institutions (especially at the FA-NUL and the availability of communication facilities could form a spring board to develop new partnerships.

For many institutions of the NARS in Lesotho, institutional capacity for efficient research support is poor and was rated as one of the highest needs (Table 14).

Other important constraints included human resources, funding and simple lack of motivation for leadership to spend time to forge new partnerships. Many of which are not sustained.

Table 14: Rating* of Need for institutional capacity for efficient research support among the core NARS institutions

Elements of institutional capacity for research support	DAR	FA-NUL	DFLR	DST	LAC
Networking and systems skills	2	3	4	4	na
Communications, internet connectivity,	3	4	4	2	4
Computer, networks, software	2	4	4	2	4
Access to up to date scientific literature	2	4	4	2	3
Laboratory, field and office facilities	2	4	4	na	3
Transport: vehicles, maintenance and running costs	1	4	4	1	2

Source: Structured questionnaires (SADC-ICART Situation analysis of the NARS in Lesotho, 2008) * rating done on a 5-point rating from 0 (not applicable) to 4(very high need)

Chapter 5

OVERALL DISCUSSION AND CONCLUSIONS

This chapter presents an overall discussion of the current situation of the NARS in Lesotho and draws out key areas for attention under the ICART programme to improve the efficiency of the NARS through the relevant support for in-country and regional network systems.

Four broad categories of exogenous trends have been identified to affect the development of agricultural research systems; changes in the political and socioeconomic context, changes in the demand for agricultural research services, changes in research technologies and changes in institutional context.

The NARS in Lesotho is very small, employing less than 100 FTE agricultural researchers (specifically, about 50 FTE agricultural researchers; refer to table 8) with a liberal estimation of Agricultural population to Researcher ratio of about 22,000. For such a small NARS, the impact of research programmes on higher national developmental goals will require a highly organized and efficient system. This underpins the importance of strengthening the organizational structures, improving research alliances and development of partnerships to provide the needed support for the NARS in delivering on their mandates. The policy context, structure and organisation of the NARS and the management of agricultural research are the key critical factors in building an effective NARS.

5.1 Policy context of agricultural research

Lesotho's agricultural resource base is eroding at an unacceptable pace. This places enormous challenges on scientists and policy makers in their quest to finding significant increases in agricultural production, while conserving the environment and stimulating the economy. However, Lesotho's national development goals places agriculture at the centre stage of its developmental agenda and policy articulates the relevance of agricultural research as the chief goal of poverty reduction in Lesotho.

A number of the NARS institutions have attempted to align their strategic plans and activities, however, the implementation of these activities have been incoherent and diffuse so far. The only national agricultural research institution, the DAR of the Ministry of Agriculture and Food Security, is in the process of finalizing the formulation of the country's agricultural research policy and strategy, hence may be presumptuous to draw conclusions on its alignment to its programmes.

Even though many of the NARS institutions reported to engage in significant extents of stakeholder consultation, priority setting processes, they have often failed to deal with the priorities of the majority resource-poor farmers.

Resource allocation to actual research activities is grossly inadequate. Current government budgetary allocation to Lesotho's 50 FTE researchers, mainly from DAR and FA-NUL, including salaries of researchers, constitute only 1.3% of the contribution that agriculture's puts into the total GDP (refer to Table 6).

Given the inefficiencies in resource management, it is conceivable that direct budgetary allocation for actual research activities is extremely small. Budgetary support is therefore and not at all commensurate with the contribution and impact expected from agricultural research towards improving productivity and subsequent reduction in poverty.

The foregoing facts about Lesotho's NARS make the need to improve the organisation and management of the agricultural research system crucial determinants underlying the ability of research to solve developmental problems.

5.2 Structure and organisation of the agricultural research system

The development of scientific capacities in the NARS only addresses part of the problem facing the NARS. Organisational and managerial weaknesses seriously undermine the productivity of the research system in Lesotho. The size and quality of Lesotho's NARS, albeit small, requires strong institutional support. Scientists cannot contribute their fullest potential, no matter how well trained, without strong institutional support.

Specialized institutions are required to complement the efforts of the NARS in Lesotho and, indeed many developing countries, to increase agricultural productivity. These include international agricultural research centres, regional institutes and networks, bilateral and multilateral agencies and private sector. What is required is the planning capacity to effectively utilize this assistance. Also, only national research leaders in Lesotho can ensure that the global research agenda is really in Lesotho's interest. Hence advances in agricultural production are unlikely to happen without a strong and efficient NARS.

Since 1952, when the national research institute, now DAR, was created, Lesotho's NARS has only made modest improvements in its structure and organisation. The organisation of the NARS is still poor and diffuse.

5.2.1 Management and Institutional issues

The overriding problem in Lesotho regarding the effectiveness of the NARS is the country's inability to maintain the critical mass of good caliber of professionals to effectively generate and disseminate research output for effective uptake of technologies. This has been due to high attrition rates of staff especially to the RSA. As is usually the case in many countries, high attrition rates are obviously linked to the relatively poor,

uncompetitive remuneration and working conditions for staff and inadequate facilities (laboratories, equipments and research and teaching materials).

Research coordination is poor and fraught with capacity problems including; lack of relevant structure for coordination, poor research methodology and poor implementation record. Many laudable ideas are left in reports unimplemented. This is due to weak and virtually non-existent multi-disciplinary and multi-institutional collaborative research, poor systems and non-existent platforms for engaging in serious academic discourse.

Locally, there are no professional or non-professional agricultural bodies such as Agricultural Science Association, to engage civil society in many of the important issues affecting agriculture. This is an important area to improve. The FA/ NUL houses the Lesotho Journal of Agricultural Science (LJAS) and released its maiden volume in November, 2007, but with lack of backing from any professional agricultural bodies, running the journal has been difficult.

Management of agricultural Research: Aside the challenge of poor coordination of the NARS in Lesotho, the management of the research process itself (programme formulation, monitoring and evaluation and information management) constitutes the most serious threat to the establishment of any meaningful research system in the country. The serious human capacity weaknesses also questions the efficiency of the management of resources (human, financial and physical).The availability of adequate and timely information and the interaction among these processes determine effectiveness.

It is therefore important to ensure that NARS scientists are trained enough to enable them evaluate the technical feasibility and budgetary requirement of programmes, however management tools are required to facilitate sound programme formulation and budgeting.

5.2.2 Training and professional development

Training at tertiary level in agriculture is within the mandates the Faculty of Agriculture (NUL) and the Lesotho Agricultural College (LAC).

Facilities: These institutions are generally inadequately staffed with qualified personnel Facilities such as internet is not readily accessible to students and for teaching and poor learning materials. LAC for instance has no internet access at all with a poor library facility, though there is access to laboratories in DAR for academic work.

Curriculum: A review occurs every 5 years, but this needs to be combined with or preceded by stakeholder consultations and tracer studies in order to produce the required graduate profile. Such consultations are not done due to poor leadership, coordination, commitment and funding for the consultation process. Curriculum is largely monitored through student evaluations and external examiners reports. Again this should include a stakeholder assessment. A quality assurance unit should be developed and the correct expertise should be used to plan the modalities for this.

Teaching methods: At the individual level this usually includes specialized study and assignments and at group level teaching includes, lectures, group work/discussions, demonstrations, field visits and excursions. The faculty could do with electronic learning facility, ICT, Guest lectureship programme using people from the Ministry, industry, business, Experts with international experience to provide students with the realities in Agriculture.

5.2.3 Linkages between NARS, policy makers, technology transfer system, users and external sources of knowledge

Lesotho's NARS can only be effective if NARS leaders are able to exchange information with policy makers and successfully communicate the potential of particular research programmes to agricultural development. This will stimulate increased funding. Also policy makers need to communnicate with research managers and clearly articulate national development objectives. Communication linkages and platforms for such engagements need to be stepped up in Lesotho.

The current Agricultural Resource Centres provide structures for farmer engagement with research and new technology. These need to be resourced and linked up to other institutions of the NARS apart from institutions of the Ministry of Agriculture.

The NARS can increase its efficiency and maximize its impact by making full use of available sources of knowledge and information. For a country like Lesotho with a very small NARS capacity it will be of utmost importance and beneficial to link up with other NARSs, and international research centres. The DAR needs to step up its already established linkage with ARC of Republic of South Africa, CIMMYT, ICRISAT, Information Core for Southern African Migratory Pest (ICOSAMP), SADC Plant Genetic Resources Network (SPGRC).

A note on the Way forward

It may be useful to develop a **national forum for agricultural research** and **commodity based coordinating committees** or component-specific linkage mechanisms with strong representation and leadership from the National University of Lesotho. A formalized system-wide coordination body will bring about greater integration among the NARS especially with the FA-NUL. The LNFC has been charged to make this happen and ICART may help in the facilitation process.

Joint ventures with private sector, use of multi-institutional and multi-disciplinary teams for major research programmes to foster cross-border networking will be beneficial to the NARS in Lesotho

Competitive research funding approach tries to bring university from the periphery of the NARS and strengthen research collaboration across national borders, but this will depends entirely on donor funding with very little national commitment. ICART may consider facilitating support for in-country research programme funding on competitive basis.

Experiences elsewhere have shown however, that the foregoing mentioned approaches may bring about more research specialization, greater inter dependence, stronger linkages and more will be achieved with same resources This may be good for a country like Lesotho, but it requires substantial amount of mutual trust among NARS institutions and personalities and appropriate ways must be found to share research costs and recognition.

ANNEXES

ANNEX 1.

Terms of Reference

Specifically, Phase 3 of the consultancy will consist of gathering information, through a mixture of desk research and interviews on the following 12 issues:-

1 Assessing with the relevant Ministries the policies for research and training in agriculture
2 Identify relevant private sector organizations and their research needs
3 Establish the list of registered institutions/ organizations delivering agricultural research
4 Establish the list of registered Institutions/organizations delivering high level training and in service professional training in agriculture
5 Assess with the Ministries the formal existence of NARS and the monitoring mechanisms, the contribution of research stakeholders
6 Provide charts indicating institutional structures
7 Documenting the working methodologies for research / the NARS
8 Identify actual and potential demand for cooperative relationships between research & training institutions and the farmers' organizations & private sector
9 Document and appraise in-country research alliances

10 Describe & contextualise research alliances (& the programmes they address) across the SADC region
11 Describe & contextualise cooperation with foreign/ international research institutions
12 Identify the needs for research alliances and networks

ANNEX 2
Institutions and persons contacted

Institutions visited	Person(s) contacted
Ministry of Agriculture and Food Security (MAFS)	Mr. M. G. Sekoto (Principal Secretary)
Directorate of Research (MAFS)	Dr. Matla Ranthamane. (Director) ICART Focal point
Lesotho Agricultural College (LAC)	Mr. T. Matsaba (Principal)
Department of Field Services (MAFS)	Mrs. Hanyane (Director)
Department of Livestock Services (MAFS)	Dr. Molomo (Director)
Department of Crops Services (MAFS)	Mrs. Mokhothu (Director)
Ministry of Forestry and Land Reclamation	Mr. Maille (Deputy Principal Secretary)
Ministry of Communications, Science and Technology Department of Science and Technology	Mrs. M. B. Williams (Director) Ms Funeka Manyala (person contacted)
National University of Lesotho (NUL) Faculty of Agriculture, National University of Lesotho	 Dr. W. Odenya (Dean)
Lesotho Council of NGOs (LCN) Agriculture, Environment and Natural Resource Commission (AENR)	 Mr. Mothusi (Commissioner)
Rural Self-help Development Association (RSDA)	Mrs Mampho Thulo (Director)
Transformation Resource Centre	Mr. Mothusi (Director)
Serumula Development Association	Lebese Leholoane (Director)

ANNEX 3.
Questionnaire

(ICART) SADC-FANR – SITUATION ANALYSIS OF THE NARS IN LESOTHO – Questionnaire

Background to this study

The purpose of ICART is to implement a regional programme of actions which will enable the National Agricultural Research Systems (NARS) in SADC member states to enhance their cooperative and integrated national efforts towards improving incomes and livelihoods of small-holder resource-poor farmers, traders, processors and other beneficiaries in a sustainable manner.

This situation analysis for Lesotho provides an input to SADC ICART's regional situation analysis on agricultural research and training for the SADC sub-region. The information gathered will form the background to the formulation of a Strategy for support to regional networks for the SADC FANR. In addition the information will initiate the development of an information system on Agricultural Research and Training in the sub-region.

1. Name of Organization …….

2. Full contact address ……

- Physical address
- Postal address
- Email
- Telephone:
- (Office)
- Mobile
- Fax
- Website address:_____

3. Name of Director/ Head of Organization.....

Name of a contact person:_____

4. Mandate of organisation.

_____

_____

_____

_____

5. Funding

a) Major funding mechanism ----------
---

b) Other funding mechanisms

.....

.....

.....

c) Budget allocation per year .....

d) Budget allocation to different programmes/sections

1.....

2.....

3.....

4.....

5.....

6.....

7.....

6. Does your Institution have a strategic plan that addresses Agricultural Research or agricultural training?

YES or NO (please circle)

7. How are research priorities or curriculum needs identified?

Research

Training curriculum

7a. Current agricultural research and development Programmes in food production and food security (including livestock, fisheries and forestry). Please list in order of priority your ten most important areas/activities and indicate the five activities which are the most significant *emerging* areas in your work.

Current: Current/emerging

(i) ...../.....
(ii) ...../.....
(iii) ...../.....
(iv) ...../.....
(v) ...../.....
(vi) ...../.....
(vii) ...../.....
(viii)...../.....
(ix) ...../.....
(x) ...../.....

7b. How did you arrive at these priorities? Please describe process.

.....

.....
.....

.....

7c. In the research and development activities of your Institution how would you rate the importance of the following issues?

Issue	*Very high*	*High*	*Medium*	*Low*	*Not applicable*
Poverty reduction					
Gender (involvement of women)					
Environmental sustainability					
HIV/AIDS					
Community development					

8. How would you assess the level of the research needs for your institution.

	Very	*ig*	*ed*	*o*	*o*

	high	*h*	.	*w*	*t a p pl*
Agricultural scientific research management					
Developing a research strategy and conducting problem definition for specific topics					
Formulating projects and writing project proposals					
M & E –Delivering on activities, schedules and milestones for individual projects including socio-economics and impact assessment					
Management skills in project execution					
Analyzing data and interpreting the results (includes stats & research methods)					
Networking and systems skills					
Institutional capacities for efficient research support					
Communications, internet connectivity,					
Computer, networks, software					
Access to up to date scientific literature					
Laboratory, field and office facilities					
Transport: vehicles, maintenance and running costs					
Human resources management					
Human resources strategy and career development					
Resources management for efficient research support					
Financial management (Drawing up contracts, cash flow, accounting, financial reporting for individual projects, etc)					
Managing the infrastructure of the organization as a whole (maintenance of facilities, equipment and resources)					
Agricultural research delivery					
Systems and personal mastery skills (soft skills)					
Knowledge management skills					
Packaging of research results suitable for effective dissemination					
Dissemination to farmers, extensionists, politicians, public, peers					
Other needs (please give details)					

9. Please indicate overall numbers of staff (full time equivalent) carrying out:

	Gender	Bachelor	Masters	PhD	Others*	Establishment[a]
Research	Female					
	Male					
Administration	Female					
	Male					
Total						

*- Please specify: _____

a- Number at full complement of staff (posts)

10. Please provide a list of research staff (research managers and scientists) and their positions. (may add on extra sheets)

_____

_____

_____

_____

_____

_____

11. Please provide a list of MAJOR research publications in the last 5 years (may add on extra sheets)

_____

_____

_____

_____

_____

_____

12. Please indicate overall age of staff carrying out:

	Gender	<35 yr	35-50 yr	>50 yr
Research	Female			
	Male			
Administration	Female			
	Male			
Total				

13. Please give details of the Institution's partnerships and membership of research networks:

Partnership or network name (if applicable)	*Names of partners/members*	*Activity*	*Funding (amount and source)*

14. What are your needs for partnership, collaboration / cooperative relationships?

---

15. What are the main opportunities and constraints to the development of new partnerships or joining networks? (in order of priority)

Opportunities:

1-……

2-……

3-…… ……

4-……..

5-……..

Constraints:
1-……..
2-…….
3-…… ……
4-……
5-……..

16. How do you rate the performance of your research activities or role in research activities in Lesotho?

very poor_____
Poor _____
Moderate_____
Good_____
Excellent_____

17. Mention the nature of your role in research activities

_____

_____

_____

_____

18. How do you rate the linkages between your research (generation) and dissemination (extension)?

very poor_____
Poor _____
Moderate_____
Good_____
Excellent_____

19. Rate the strength of your linkage with other organisations of the National Agricultural Research System (by marking the strength of the relationship of your organisation with each organisation on the 100mm line scale given below).

EXAMPLE: Rating an organisation with moderate relationship will be done as follows;

Name of Organisation: Directorate of Agricultural Research

No linkage _____|_____ excellent linkage

Please **specify the nature of the linkage**/relationship

Collaborative study on pasture management, partner in conducting/ recipient of in-service training, partner in running attachment programme, or collaboration in specific research dissemination effort

---

1. Name of Organisation:.....

No linkage _____ excellent linkage

Please **specify the nature of the linkage**/relationship

2. Name of Organisation:.....

No linkage _____ excellent linkage

Please **specify the nature of the linkage**/relationship

3. Name of Organisation:.....

No linkage _____ excellent linkage

Please **specify the nature of the linkage**/relationship

4. Name of Organisation:.....

No linkage _____ excellent linkage

Please **specify the nature of the linkage**/relationship

5. Name of Organisation:.....

No linkage _____ excellent linkage

Please **specify the nature of the linkage**/relationship

6. Name of Organisation:.....

No linkage _____ excellent linkage

Please **specify the nature of the linkage**/relationship

(If you have more than 6 organisations to rate, you may rate more than one organisation on one line scale)

THANKS VERY MUCH FOR YOUR HELP

ANNEX 4.
List of Research Managers and Scientists in Lesotho

Department of Agricultural Research (DAR) Ministry of Agriculture and Food Security

Director	Dr. M. M. Ranthamane
Research managers	
Agronomy section	L. Bereng (Head)
Programme/Activity	Officer-in-Charge
Sorghum & Maize	K. Likotsi
Oilseeds & Wheat	T. Tseuoa
Legumes	L.Bereng
Horticulture section	M. Lekota (Head)
Programmes / Activities	
Orchards	M. Lekota
Floriculture & Landscape	M. Morahanye
Vegetables & Root crops	Sekete
Livestock section	M. Ramashamole (Head)
Programmes / Activities	
Animal nutrition	L. 'Mochoa
Forages	M. Ramashamole
Animal Breeding & Health	Vacant
Plant Genetic Resources section	S. Naha (Head)
Programmes/Activities	
Multiplication & Characterisation	M. Mohloboli (M.Sc.)
Conservation, Collection & Agro-Forestry	S. Naha (M. Sc.)
Documentation & Information Systems	M. Motloli (M. Sc.)
Research & Extension Coordination	M. Phalatsi (Head)
Programmes /Activities	
Sociology	R. Pelane
Ecomonics & Marketing	T. Khoalenyane

Biometrics	Vacant
Plant Protection section	P. Masupha (Head)
Programmes/Activities	
Entomology	L. Nteletsane (M. Sc) on study leave
Pathology	Vacant
Weeds	P. Masupha (M. Sc.)
Food Technology & Nutrition section	M. Khaketla (Head)
Programmes/Activities	
Nutrition	M. Lephole (M. Sc)
Food Science	M. Khaketla
Post Harvest (secondary)	Vacant
Agricultural Engineering section	L. Russell (Head)
Programmes/ Activities	
Farm Machinery	L. Russell
Irrigation	Vacant
Post Harvest (primary)	Thai
Renewable Energy	Vacant
Farm Structures	L. Russell
Seed Development section	E. Tjelele (Head)
Programmes/Activities	
Seed Production	E. Tjelele (M.Sc.)
Seed Processing	M. Selikane
Seed Management	Vacant
Soil and Water Conservation	

Faculty of Agriculture, National University of Lesotho

Faculty Research Management

Dean	Dr. W.O. Odenya
Heads of Department (4)	
Tutors (3)	
Research coordinator (1)	

On-going research programmes:

Faculty-wide Research programme

Food security and HIV / AIDS

Departmental programmes (Animal Science)

Characterisation of Livestock keepers for policy and Research Targeting
Academic Programmes
Diploma in Animal Health
Bachelor of Science Agriculture (general)
Bachelor of Science Agriculture (animal science)
Bachelor of Science Agriculture (crop science)
Bachelor of Science Agriculture (soil science)
Bachelor of Science Agriculture (agric economics)
Bachelor of Science Agriculture (agric extension)
Bachelor of Science Home Economics
Master of Science (Animal science)
Master of Science (Crop science)
Master of Science (Soil science)
Master of Science (Agric economics & rural sociology)

Research Scientists

Animal Science	Dr. G. M. Adoko (Head)
I. Okello-Uma PhD	Professor
W. O. Odenya PhD	Senior Lecturer
G. M. Adoko	Lecturer
L. G. Pheko	Lecturer
S. Molapo	Lecturer
L. M. Mphiti-Shakhane PhD	Lecturer
P. Matebesi	Assistant Lecturer
N. Kuluelie	Assistant Lecturer

Crop science	Dr. A. M. Kena (Head)
J. Mohammed PhD	Associate Professor
A. K. Ansari PhD	Associate Professor
L. Nteso PhD	Lecturer
A. M. Kena PhD	Lecturer
M. Motoboli	Lecturer
S. Sekoli	Lecturer
G. Lebaka	Lecturer
T. Lebese	Lecturer

Soil Science & Resource Conservation	Dr. M. V. Marake (Head)
M. V. Marake PhD	Senior Lecturer
S. F. Molete PhD	Lecturer
P.A. Molumeli PhD	Lecturer

B. Mapeshoane	Lecturer

Economics & Rural sociology Dr. M. Matete (Head)

M. Matete PhD	Senior Lecturer
N. Mokitimi PhD	Senior Lecturer
P. Mukoane	Lecturer
M. Bohloa	Lecturer
J. Obuh	Lecturer

Home Economics Prof. M. Keregero (Head)

M. Keregero PhD	Associate Professor
M. Motobori	Lecturer
M. Nkuhbutlane	Lecturer

Laboratory instructors/Technicians

P. Ntakasane	Laboratory instructor
M. Lepheane	Senior Technician
P. Mohapi	Technician

Department of Science and Technology, Ministry of Communications, Science and Technology

A.M.Williams	Director
T. Ntho	Senior Research Officer (SRO)
L. Thamae	SRO
F. Manyala	Research Officer (RO)
T. Saka	RO
M.Nkhi	RO
T. Ramalesane	Assistant Research Officer (ARO)
T. Bolila	ARO
S. Mokoasti	ARO
T. Tsokosti	ARO

ANNEX 5

List of NGOs in Lesotho.

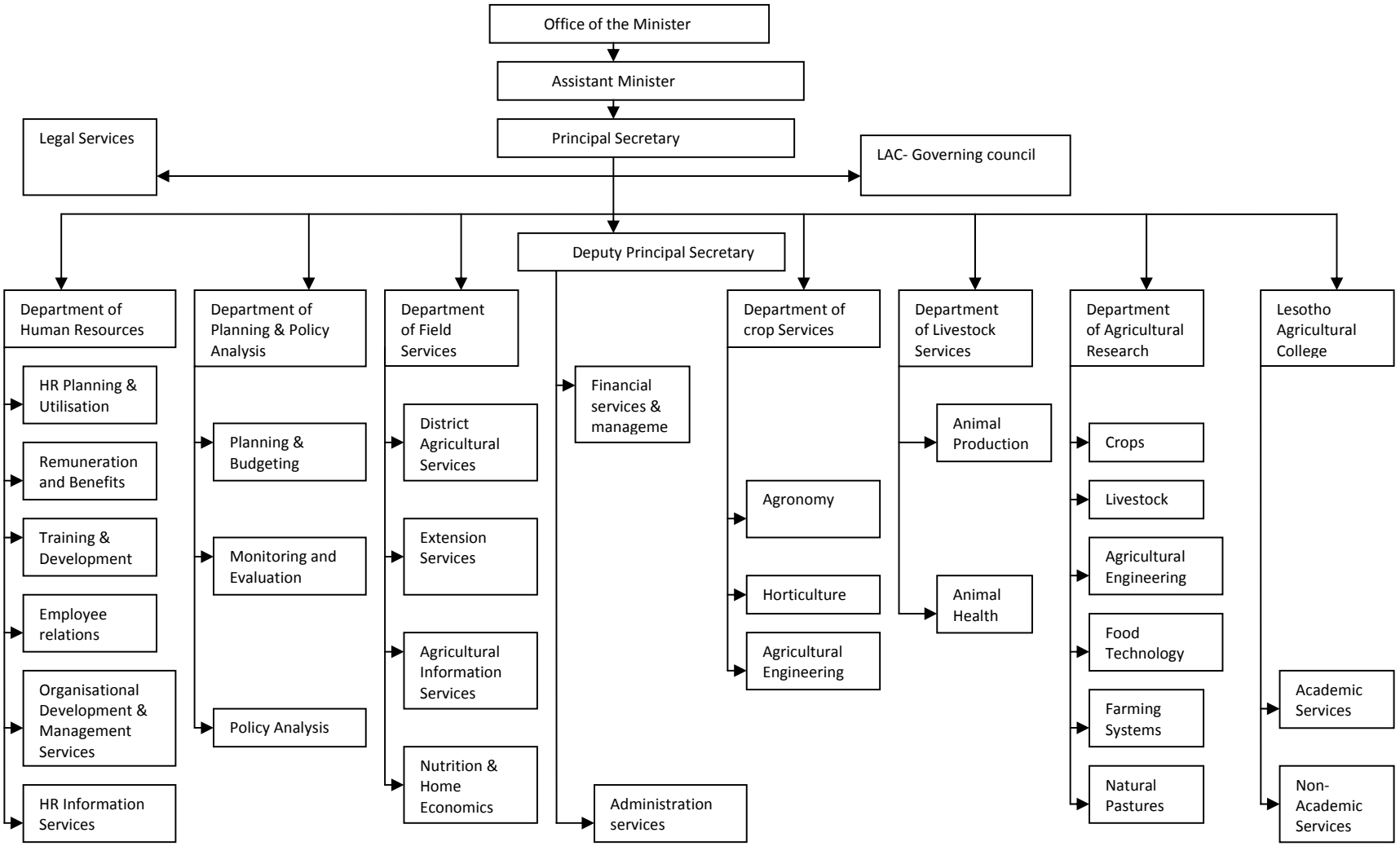
Name	Contact
Anti Drug Abuse association of Lesotho	22331806
Basic Law Program	22314986
Basotho Mine Worker's Labour co-Operatives	
Basotho People Initiative	58911594
Basotho Poultry Farmers Association	63100744
Believers Seed and Youth	22501638
Berea Agricultural Group	22331812
Highlands church solidarity	62847908
Hokomela Bana	22314281
Justive Peace	22312750
Blue cross Lesotho	22326260
Boiteko womens's Association	22326260
Bosele Association	58739271
Centre for empowerment and social Analysis	58000748
Community Legal Resource	22323768
Construction and Allied Workers union	22323559
Development for the Peace	22314463
Easy Connection community Organisation	63049548
Federation of women Lawyers	22325466
Foundation for Hope development organisation	58841326
Khatang Tema Baisukuli	58023030
Leribe Forestry Association	58039133
Lesotho Allied workers Union	58765556
Lesotho Wholesalers catering and Allied Workers union	58960323
Lesotho Association of Non-formal Education	22315003
Lesotho Association of Teachers	22317463
Lesotho catholic Bishop Conference	22312750
Lesotho Clothing and Allied Workers union	22324296
Lesotho Durham Link	27005998
Lesotho Girl Guide Association	22324987
Lesotho Home Makers Association	22315754
Lesotho Manufacturers Association	58717118
Lesotho Media Women Association	22325317

Lesotho Council of Men	22324743
Lesotho Council of Women	22325482
Lesotho National Olympic	22321333
Lesotho National Wool and Mohair Growers Association	22317284
Lesotho Opportunities Industrial Centre	22313119
Lesotho Plant Parenthood Association	22313645
Lesotho Pre-day care Association	2700368
Student Christian Movement	22311002
Lesotho Red Cross Association	22313911
Lesotho Save the Children	22322559
Lesotho Society for the Mentally Handicapped	22320407
Lesotho Teacher Trade Union	22322774
Lesotho Trade union congress	22321624
Lesotho Women's Institute	22325482
Lesotho Young Christian Students	58843629
Lesotho Youth Federation	5897175
MalesaonaMulti Purpose Cooperative	63024029
Maseru Senior citizens Association	22311414
Mateli/Tajane Community development trust	58788705
Monna ka Khomo	58774137
NGO Coalition	22312905
Paballong Trust	22320941
Patroit Vision in Action	22326353
Positive Action Society	22321671
Prison Fellowship Lesotho	22315527
Rachel's Children Home	6306278
Rhahang Banna le Basali	22950434
Rural Self-help Association	22311279
Sakana La Nkope HIV Support Group	22310005
Selibeng Women's Association	63008869
Skillshare International	22314202
SA Exminer and Allied Workers	63080563
SOS Children Village	22316265
Taemane ea Sechaba	22316979
Technologies for Economic Development	22317795
Thaba Bosiu Centre for Blue cross	27003169
Transformation Resource Centre	22314463
Women in Business	223111669
Women and Law in Southern Africa	22313123
World Vision International	22317311
Young Women Christian Association	22313476

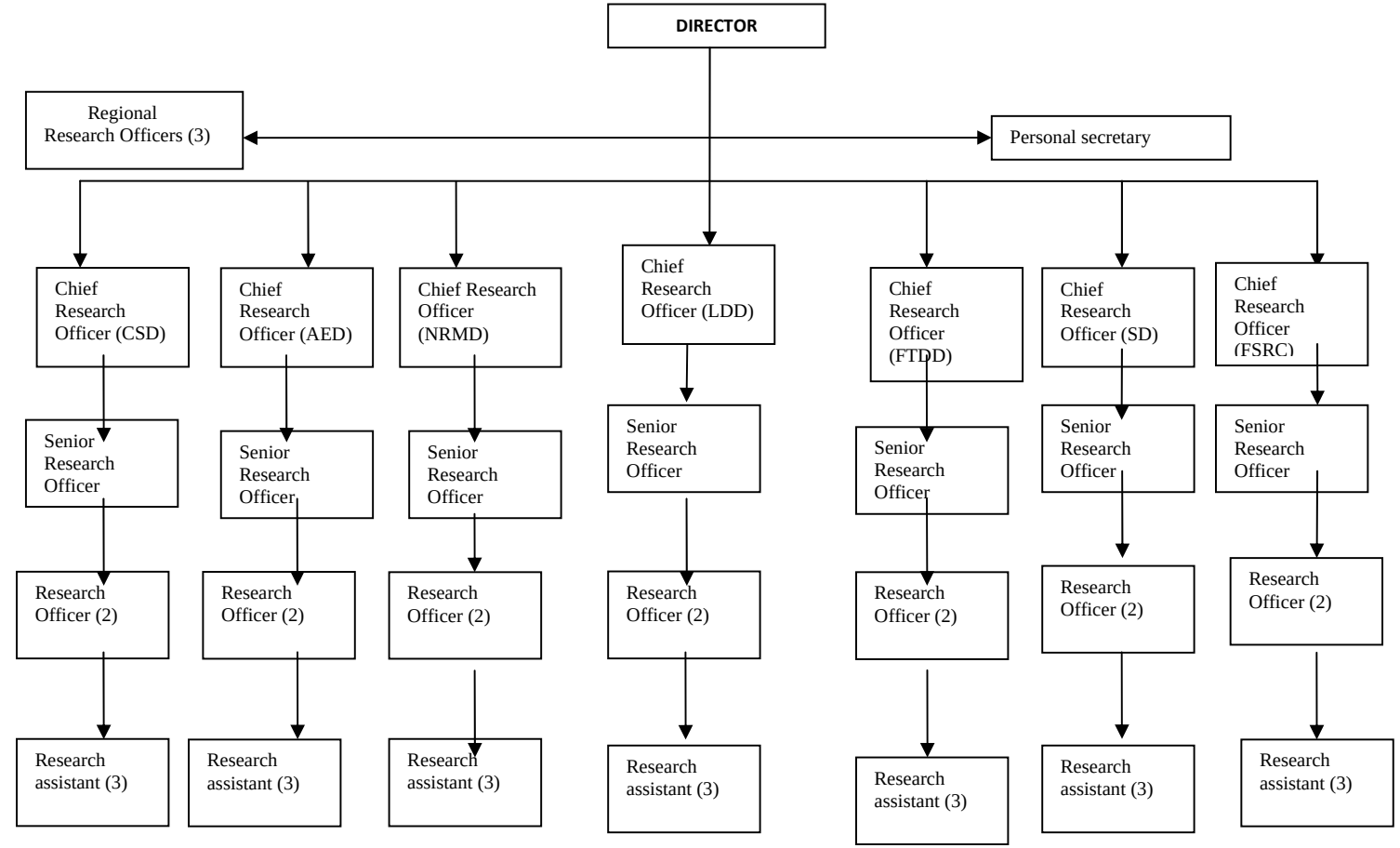
ANNEX 6
Policy documents
(Documents separately sent to SADC secretariat)

1. Agricultural Sector Strategy
2. Food Security policy
3. National Action Plan for Food Security (2007 - 2017)
4. Forestry strategic Plan
5. National Forestry programmes vol. I and II

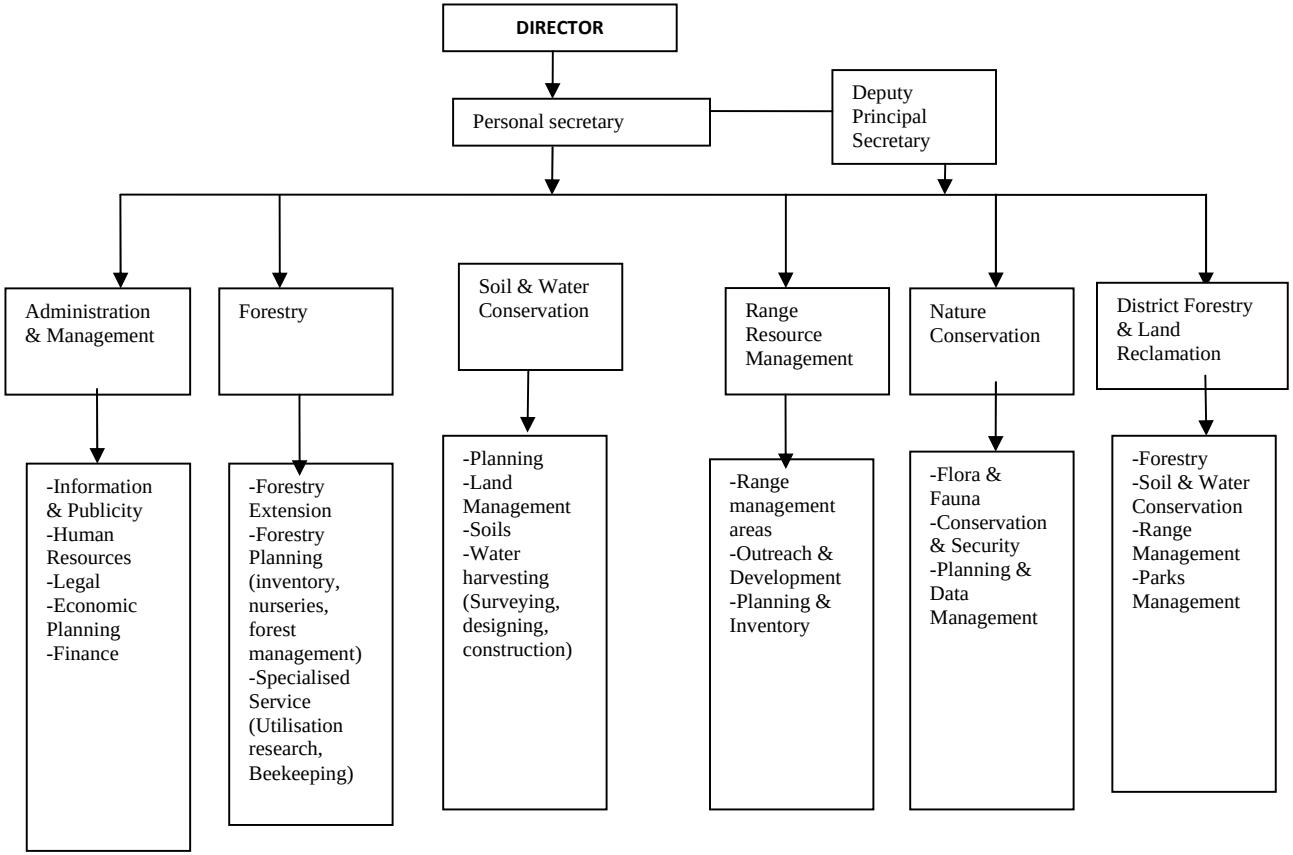
ANNEX 7: MINISTRY OF AGRICULURE AND FOOD SECURITY-



ANNEX 8 DEPARTMENT OF AGRICULTURAL RESEARCH (MAFS) Proposed staffing structure. (Currently only 3 chiefs are fielded)



ANNEX 9: Ministry of Forestry and Land Reclamation: Organisational structure



ANNEX 10
VALIDATION WORKSHOP: FACILITATOR'S REPORT

The Situation Analysis of the National Agricultural Research System (NARS) in Lesotho
Blue Mountain Inn, TY,
22/01/08 TO 23/01/08.

Facilitator's Report

Introduction: The SADC - FANR Implementation and Co ordination of Agricultural Research and Training (ICART) held a workshop on **"The Situation Analysis of the National Agricultural Research System (NARS) in Lesotho"** on the stated dates above**.**

The facilitation activity began with a planning session by the Consultant, Dr. Irene Annor-Frempong, Director of Department of Agricultural Research, Dr. Matla Ranthamane and the Facilitator. A skeletal program was made by the Consultant and was briefly discussed. A tentative programme was made by the Director and the Facilitator prior to the workshop. A report from the Consultant arrived and copies were made for participants. The evening prior to the workshop final touches were discussed and relevant logistical issues were done. Registration Form and Evaluation Form were designed, typed and printed. The workshop started as planned, though slightly behind the scheduled time.

There were 17 organizations invited to this workshop, however only eight organizations turned up and nine (9) participants from those eight organizations came from Training institutions (two), Research institutions (three), Extension service (three) and private sector (Non - Governmental Organisations) one. The Acting ICART Project Coordinator Mr. Krishan Bheenick also provided a useful service in the deliberations.

The director of Agricultural Research gave a welcome address as well as to open the workshop. ICART's representative presented the objectives and aims of ICART after the opening address. The ICART Lesotho Consultant then gave her report on "The Situation Analysis of the National Agricultural Research System in Lesotho". After the Consultant's presentation, the participants discussed the report. . The discussions were useful to the report as they would strengthen the final report. Questions were asked, comments made and clarifications made.

The participants were further grouped into two groups to discuss the topics that were given on the programme. These questions were:

a) Research Needs/On - going Research programmes
b) Co - ordination and Monitoring and Evaluation mechanisms of the NARS in Lesotho.
c) Networks and Research Alliances.

The three topics were given initially assuming there would be 17 participants and thus would be divided into three groups to discuss the three topics. There were guiding topics to these questions to be discussed by these groups. These guiding topics included (but not restricted to): a) Research Needs

- ❖ Articulation of the research needs
- ❖ Improving feedback from research users
- ❖ Program formulation and priority setting in research agenda

b) Co ordination and M&E mechanisms in the NARS in Lesotho.

- ❖ Structures that will enhance Co ordination and M&E
- ❖ The role of information in the co ordination and M&E
- ❖ The role of policy making in the coordination and M&E.

The two groups were expected to discuss in their groups the topic of Networking and Research Alliances as well as the ones given above as the Networking and Research Alliances were initially intended to be a topic for a third group assuming all 17 invitees would turn up to the workshop. So, the two groups were asked to include that topic as well. The two groups made their presentations on that first day of the workshop. Questions were asked, comments made and clarifications made.

The following day, 23/01/08 started with an overview of previous day's work by the facilitator, then remarks on the consultant report which was presented on the previous day were made and then general discussions followed. During the general discussions, the activity that took some time in the discussions was how to form a NARS in Lesotho. Finally an agreement was reached whereby it was agreed that a facilitation committee or team made up of the NUL (Faculty of Agriculture) as convener of meetings and the Director of Agricultural Research as the main spearheader but behind the convener from NUL-Faculty of Agriculture as the key members of that committee.. The committee/team would be expected to facilitate in the formation of a body that would function as a National Agricultural Research System in Lesotho.

The Committee was composed as follows:

- NUL - Faculty of Agriculture (Convener)
- Department of Agricultural Research
- Lesotho Non - Governmental Organization (LCN)
- Department of Science and Technology (DST)
- Department of Field Services (DFS)
- Ministry of Forestry and Land Reclamation (MFLR)

Terms of References (TORs) or Expectations

- Establish and document mechanisms of necessary for the establishment of the sustainable NARS.
- Establish and document mechanisms of enhancing linkages among local stakeholders.
- Facilitate the establishment of the coordinating body of NARS
- Consult with relevant stakeholders to brief them of this workshop and of the concept of NARS.

The Evaluation forms were filled and the participants answered as thus:

Participants were from:

- Training,
- Extension,
- Research and,
- Private organization (NGO).

Current understanding of new NARS concept

- All said it was greatly improved.

Four out six said "**The workshop enhanced their appreciation of the role their institutions in NARS "**

The things that they appreciated were:

- NARS concept;
- General agenda;
- Presentations;
- Linkages of Research units;
- Need to establish networking;
- Friendly discussions
- That NARS is not NARI.

Things they would like to have as follow-up on:

- Forming sustainable NARS;
- NARS facilitating body;
- progress report;
- Final report from Consultant;

On Facilitators work: five participants said “good work”, and one said “very good work”.

I greatly thank the Director of Agricultural Research for the opportunity accorded me, I thank the Consultant and the Acting ICART project coordinator for their good team work and for bearing with me in my weaknesses where I did not do a good job. I hope they will give me another chance next time and I think I will do much better then.

Thank you.

Faithfully

Tlali Jobo. (Facilitator)

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