

REPORT ON
**MULTIDISCIPLINARY
TRAINING CURRICULA
REVIEW ON EXTENSION**



**agriculture,
forestry & fisheries**

Department:
Agriculture, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA

2018

Published by:

Department of Agriculture, Forestry and Fisheries

Design and Production by:

Artboards Design Studio (Pty) Ltd

www.artboards.co.za

RP: /2018

ISBN:

CONTENTS

ABBREVIATIONS AND ACRONYMS	1
DEFINITIONS	4
1. INTRODUCTION	5
1.2 Problem Statement	7
1.3 Rationale	9
1.4 Mission Statement	8
1.5 Objectives	8
2. GENERAL OVERVIEW OF EXTENSION TRAINING	9
2.1 The current status: The Provision of AET	9
2.2 Extension related qualifications on offer at Higher Education Institutions	9
2.2.1 Curricula at Agricultural Colleges	10
2.2.2 Curricula at the University of Technology	12
2.2.3 Curricula offered at Universities	13
3. RECOMMENDATIONS	16
3.1 Ideal extension curricula mix	16
3.2 Most appropriate Extension Related Programmes	17
3.3 Recommended Modules and their objectives	18
3.4 Quality Assurance	21
3.4.1 Continuous Professional Development (CPD)	21
4. CONCLUSION	22
5. BIBLIOGRAPHY	23

LIST OF TABLES

Table 1	Agricultural Qualifications on offer at Agricultural Colleges	10
Table 2:	Role of colleges on training producers	11
Table 3:	Overview of undergraduate agricultural and extension offerings at Universities of Technology in South Africa	12
Table 4:	Overview of undergraduate agricultural and extension offerings at Universities in South Africa	13
Table 5:	Percent (%) of university curricula covering extension by qualification	15
Table 6:	Proposed type of qualification within Extension Services	0
Table 7:	The Agricultural Extension Landscape – Extension concepts, study fields and essential knowledge/skills areas	16
Table 8:	Modules and their objectives	18
Table 9:	Modular structure of the programme	20

ACRONYMS

AET	Agricultural Education and Training
AIS	Agricultural Innovation Systems
B.Tech	Bachelor of Technology
B. Agric	Bachelor of Agriculture
B.Inst.Agrar.	Bachelor of Institutional Agriculture
B.Sc. Agric	Bachelor of Science in Agriculture
CIAT	Cape Institute Agricultural Training
CPUT	Cape Peninsula University of Technology
CPD	Continuous Professional Development
DAFF	Department of Agriculture, Forestry and Fisheries
DOA	Department of Agriculture
EAS	Extension Advisory Services
ERP	Extension Recovery Plan
FAO	Food and Agricultural Organization
FAS	Farm Advisory Services
GADI	Grootfontein Agricultural Development Institute
GFRAS	Global Forum for Rural Advisory Services
GFRAS	Global Forum for Rural Advisory Services
HE	Higher Education
HC	Higher Certificate
HEQF	Higher Education Qualification Framework
N.Dip	National Diploma
NDP	National Development Plan
NMMU	Nelson Mandela Metropolitan University
NQF	National Qualification Framework
OBE	Outcome Based Education
PDAs	Provincial Departments of Agriculture
PhD	Doctor of Philosophy
SACNASP	South African Council for Natural and Scientific Professions
SASAE	South African Society for Agricultural Extension
SAQA	South African Qualifications Authority
SEPs NDP	Supervised Extension Projects
PhD	Doctor of Philosophy
SACNASP	South African Council for Natural and Scientific Professions
SASAE	South African Society for Agricultural Extension
SAQA	South African Qualifications Authority
SEPs NDP	Supervised Extension Projects
SGB	Standard Generating Body
TUT	Tshwane University of Technology
UKZN	University of KwaZulu-Natal
UFH	University of Fort Hare
UFS	University of the Free State
UNISA	University of South Africa

DEFINITION OF TERMS

Extension and Advisory Services (EAS): Is the different activities that provide the information and services needed and demanded by producers and other actors in rural settings to assist them in developing their own technical, organisational and management skills and practices so as to improve their livelihoods and well-being.

Advisory Services: The term 'Advisory Services' is used interchangeably with extension and is very much part of extension. It refers to services provided by subject matter specialists, private organisations or firms to support producers. It is commonly practiced where agriculture, forestry and fisheries enterprises are highly commercialised.

Agricultural Innovation Systems: An innovation system is defined as a network of organisations, enterprises and individuals focused on bringing new products, processes and forms of organisations into economic use, together with the institutions and policies that affect their behaviour and performance.

Capacity Development: Is the ability of people, organisations and society as a whole to manage their affairs successfully and "capacity development" as the process whereby people, organisations and society all together unleash, strengthen, create, adapt, and maintain capacity over time.

Capacity Development: Is the ability of people, organisations and society as a whole to manage their affairs successfully and "capacity development" as the process whereby people, organisations and society all together unleash, strengthen, create, adapt, and maintain capacity over time.

Continuous Professional Development: Can be defined as the systematic maintenance, improvement and broadening of knowledge and skills and the development of personal qualities necessary for the execution of professional and technical duties throughout a person's professional scientific careers.

Efficiency: A measure of how economically resources/inputs (funds, expertise, time, etc.) are converted, i.e., are the objectives being achieved economically by the development intervention? How big is the efficiency or utilisation ratio of the resources used?

Effectiveness: An aggregate measure of (or judgment about) the merit or worth of an activity, i.e., the extent to which an intervention has attained, or is expected to attain, its major relevant objectives efficiently in a sustainable fashion and with a positive institutional development impact.

Food Security: Food security is a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.

Government: This refers to the national Department of Agriculture, Forestry and Fisheries, Provincial Departments of Agriculture, Local Government and State-owned enterprises.

Stakeholders: The private sector, development partners and interested and/or affected parties in as far as it applies to agriculture, forestry and fisheries.

Sustainability: The continuation of benefits from an intervention: The probability of continued long-term benefits. The resilience to risk of the net benefit flows over time (i.e., are the positive effects or impacts sustainable).

INTRODUCTION

The training of Extension Practitioners in South Africa has shown many cracks which resulted in erosion of the image of Extension Practitioners. It is without doubt that effort needs to be taken in order to address the situation. While it is noted that the legislative mandate to review curriculum in training in South Africa is the prerogative of the Department of Higher Education and Training that need to understand that as consumers of the curriculum DAFF and its partners in the provinces cannot keep quiet and do nothing, but has to influence the process in a more positive way. This report seeks to provide desk top analysis of the circumstances that pertain to extension training and qualifications. It begins with the background, which include the rationale for this intervention. It also outlines what seems to be the challenge or problem. It goes on to provide an exposition of the current training offered by different institutions of higher learning, as well as the agricultural colleges. The report culminates with a recommended proposed curricula combination desired to uplift the Extension Practitioners.

1.1 Background

The National Development Plan (NDP: 2011) states that agriculture is the primary activity in rural areas that has a potential to create close to 1 million jobs by 2030. It further recommends improved and extended skills development and training in the agricultural sector. This includes the training of a new cadre of Extension Practitioners that can respond effectively to the needs of smallholder producers and processors and contribute to their successful integration into the full value chain. The NDP envisions South Africa's rural communities having greater opportunities to participate fully in the economic, social, and political life of the country.

Extension services must therefore respond to a wide set of local, national and global pressures to the agriculture, forestry and fishery sectors across the value chain. Extension is part of a wide range of services needed to help producers and processors acquire relevant knowledge and skills to increase and sustain the productivity and competitiveness of their enterprises.

In response to the above challenges, DAFF developed the Agricultural Education and Training Strategy (AET: 2005) aimed to improve agricultural production through rendering quality agricultural education and training services. Among the challenges faced by AET in South Africa are (a) formal training and education is very poorly controlled, both in terms of curriculum content and qualifications of educators and also (b) there has not been an appropriate response in formal education and training curriculum content to address the required improvement in areas such as marketing, management and other practical skills

DAFF also developed the Norms and Standards for Extension and Advisory Services in agriculture (2005) to, inter alia, improve the efficiency, relevance and cost effectiveness of publicly funded agricultural extension and advisory services. This was followed by the development of the National Framework for Extension Recovery Plan (ERP: 2011) to revitalise the state of extension and advisory services. Amongst its key focus areas is the re-skilling and reorientation of Extension Practitioners in South Africa. It emphasises the importance of enhancing skills and knowledge of the current crop of extension personnel through training, capacity building and qualifications. The National Framework for Extension and Advisory Support Programmes (2014) states that collaboration with tertiary institutions should be intensified to ensure that the newly registered unit standards qualifications in extension are incorporated into the curricula of those institutions. It states that extensionists should affiliate with professional body. This would be a way of displaying commitment into upholding the standards of professionalism.

Other initiatives to improve the image of extension were undertaken where DAFF commissioned a study on the feasibility of establishing a professional body/council for the registration of Extension Practitioners in the country. The South African Council for Natural Scientific Professions (SACNASP) was identified as a suitable regulatory body to register Extension Practitioners to establish, direct, sustain and ensure a high level of professionalism and ethical conduct. SACNASP is the legislated regulatory body for natural science practitioners in South Africa. The Natural Scientific Professions Act No. 27 of 2003 as amended to include Extension Science as a field of practice, was approved by the Minister of Science and Technology on 3 December, 2013 and gazetted on 24 January, 2014.

In recent years much has been done on strengthening Extension and Advisory support to rural communities, but less is known about how to build the needed capacities within Extension and Advisory Services (EAS). By recognising the fact that this is not just about individual roles and capacities but also about organisational and systems levels, the Global Forum for Rural Advisory Services Forum (GFRAS: 2012) developed a paper called the 'New Extensionist' aimed at filling the knowledge gap by articulating a new vision for EAS within the Agricultural Innovation System (AIS). The urge behind the development of the 'New Extensionist' comes from the increasing realisation that the existing EAS need new capacities to respond effectively to the new challenges in agricultural development such as declining water availability, increasing soil degradation and changing and uncertain climate and markets. Many started questioning EAS relevance and competence to deal with the above contemporary challenges (GFRAS: 2012).

DAFF is mandated to create the circumstances in which the Extension Services respond effectively to the new challenges facing agriculture development in the country. The lack of multidisciplinary approach in extension curricula has affected the whole extension service. This resulted in agrarian transformation programmes not achieving the desired progress and, where technical progress has been made such as in land transfers and restitution, post-transformation issues have often presented new problems and challenges that impede real transformation. Communities settled under land reform initiatives are often ill-equipped to work the land or use it optimally. Communities, to who state forests have been transferred to, also lack support services and face numerous problems that exclude them from effective participation in the forestry sector. Similar issues of access and post-access operational capacity are also found in the fishery sector.

This report responds to the recommendation by the NDP of training a new cadre of agricultural extension; the guiding principles of the Norms and Standards for Extension and Advisory Services and other initiatives by DAFF to transform the sector through (1) Human and Social Capital Development aimed at building the capacity of producers and processors, covering problem solving, ownership and sustainability of the clients and (2) Sound governance; which ensures competent Extension Practitioners with clear planning, implementation, monitoring, evaluation and financial accountability procedures. Therefore, this necessitates the review of the current training curricula for extension in order to enable Extension Practitioners to respond effectively to the needs of smallholder producers and sector transformation. The focus of this report is on reviewing and recommending appropriate curricula for future extension services in the country. The curricula reform should therefore be seen as a contribution towards resolving the identified problem, which is highlighted in the next section.

1.2 Problem Statement

The education and training curriculum for extension is currently inadequate to address the new competencies required for comprehensive producer development. It lacks a multidisciplinary approach to training that capacitate current and future Extension Practitioners with the relevant and diverse knowledge and tools to deal with and address the wider rural livelihood context of extension support. Extension faces major challenges in the areas of relevance, efficiency, accountability and sustainability. The contributing factors are diverse, ranging from sociocultural and economic in nature such as dependency, changing economy and natural phenomenon, such as climatic variability or climate resilient production practices scenarios in South Africa. In addition, the need for appropriate agricultural technologies, as well as the need for innovative approaches to respond to rising food prices, food and nutrition security, poverty eradication, diversifying market demands, export opportunities and environmental concerns, is posing a new set of challenges to technology dissemination systems.

In 2014, DAFF developed a National Extension and Advisory Services Policy aimed at addressing a number of challenges facing extension and advisory services in South Africa. One of the key problem areas highlighted in the policy is the limitation in the extension education system and narrow service focus. Efficient and effective extension and advisory services can broker and facilitate information sharing and skills development in support of agricultural, forestry and fisheries' development, especially for smallholder entrepreneurs. In its current form, public extension services cannot facilitate the accelerated capacity development of a range of producers that is desired to address challenges of rural and economic growth, food and nutrition insecurity, inequality and unemployment. National extension services in the country is plagued with a number of structural and counterproductive challenges that limit the efficiency and effectiveness of efforts and investments in the development of smallholder producers in particular.

Extension and advisory services lack a developmental and systems approach, where practitioners have a holistic view and understand the total value chain and linkages. Moreover, a major part of the extension and advisory services administered by DAFF is focused on agriculture, therefore the need to broaden the current scope towards a wider focus on Extension Practitioners with stronger emphasis on a societal-wide sustainable economic development initiative. Some of the areas may include serving the new client from land beneficiaries, new Extension Practitioners, etc.

1.3 Rationale

The extension service must respond to a wide set of local, national and global production and market pressures across value chains. It is part of a wide range of services needed to help producers acquire relevant knowledge and skills to increase and sustain the productivity and competitiveness of their enterprises. This justifies the need for appropriate and innovative technologies that respond to environmental and socioeconomic challenges in support of diverse rural livelihood initiatives. One of the intervention measures of the National Extension and Advisory Policy is to promote a Commodity Value Chain Development Approach. The challenge facing smallholder producers is how to gain greater access to markets, enhance their value chain position and to increase their value-addition (improve quality, increase efficiency) for competitiveness, improved incomes and reducing poverty. Value chains and diversified livelihoods are no longer simply dependent upon what one produces, but also how production fits within competitive chains in the market system. Extension services provide information, skills and technologies to improve producer livelihoods and strengthen linkages within the commodity value chain.

The focus of extension has largely been the transfer of technology to improve productivity. While transfer of technology is very relevant to the developing world, extension must also play a wider role to enhance the skills and knowledge for production and processing, facilitating access to markets and trade and work with producers for natural resource management. Although extension services are traditionally focused on production aspects, the policy asserts a serious shift towards a value chain approach. As such, Extension Practitioners have an important role to play in promoting agricultural development, including the value chain approach to agricultural development, among others. This calls for developing the capacity of the Extension Practitioners in order to extend effective and efficient support to producers.

This report presents an opportunity for Extension Practitioners to focus more on supporting producers on diverse rural livelihood initiatives based on a wider understanding of the overall development context and socioeconomic objectives. This justifies a multidisciplinary approach to training that capacitates current and future Extension Practitioners with the relevant and diverse knowledge and tools. In the context of South Africa's unique agricultural sector, the shift towards servicing previously disadvantaged groups of producers, namely subsistence and smallholder farmers, plus the need to ensure household and national food security and create jobs, justifies the need to invest in an AET curriculum review and upgrade.

1.4 Mission Statement

The mission of the departmental strategic plan is to “advance food security and agrarian transformation in the agricultural sector through innovative, inclusive and sustainable policies and programmes.” (DAFF: 2014/15–2016/17). The National Extension and Advisory Service Policy aims to facilitate the establishment of effective and efficient extension and advisory services to ensure knowledge transfer and skills development. The curriculum review is therefore imperative and responds to the ever-changing needs of the producers.

1.5 Objectives

The main aim of this report is to review, evaluate and recommend core competencies and curricula for extension.

Other strategic objectives are to:

- Transform and align the core competencies of Extension Practitioners towards the comprehensive development agenda
- Implement and promote the value chain approach for integrated and holistic support services
- Establish a professional, accessible, reliable, relevant and accountable extensionist that is results oriented

GENERAL OVERVIEW OF EXTENSION TRAINING

2.1 The current status: The Provision of AET

Agriculture as a subject has been removed from the curriculum at Primary School level. It could be included indirectly through the Outcomes Based Education (OBE) system. Major obstacles lie ahead of the provision of quality AET services, with the root cause owing to the exclusion of agriculture as a subject at primary school level. In addition, lack of awareness on the crucial role played by agriculture, limited human resource trained and qualified to teach agriculture, as well as poor access to basic supporting teaching materials and equipment. AET at secondary school level that equates to National Qualifications Authority (NQF) levels 2-4 was found to perform poorly. High schools that offer Agricultural Science as a subject are mostly ill equipped, both in terms of qualified teachers and the relevant equipment to conduct efficient practical training. This is particularly true in the previously disadvantaged areas of the country (DAFF AET strategy, 2008).

At tertiary level, delivery is far better resourced. In most cases, Colleges of Agriculture offer AET in practical agricultural production within broad categories of crops and livestock production systems – with some colleges specialising in major commodities that are unique or more prevalent to their respective agricultural ecological zones. Components of agricultural extension make up a considerable proportion of the curricula and learners obtain recognised diplomas after several years of study. Evaluation of enrolment trends at Colleges of Agriculture deduce that extension programmes receive below average student numbers, consequently shifting focus from educating Extension Practitioners to training producers.

Similarly, at Universities of Technology, AET follows a more practical approach to education and training, though not as extensive as that of Colleges of Agriculture. However, with the introduction of the B.Tech degree, Universities of Technology are increasing their theoretical components and moving towards agricultural science—with the primary focus still on crop and livestock production. Universities offer a very broad and diversified range of agricultural sciences that cut across the whole agricultural commodity value chain. They also offer curricula on a variety of associated disciplines including Agricultural Engineering, Agricultural Management, Agricultural Economics, Soil Science, Food Security, Agricultural Extension, Community Resource Management, Bio-Resources, as well as some specialities including Viticulture, Hydroponics, Forestry, Range and Wildlife Management. Learning is driven more towards Agricultural Science than Agricultural Practice. Further key drivers such as globalisation and international competition are driving significant transformation in agricultural curricula worldwide.

2.2 Extension related qualifications on offer at Higher Education Institutions

This section focusses on the presented study commissioned on the evaluation of AET curricula at South African tertiary institutions. The offerings at Higher Education Institutions are Diplomas and B.Techs (from colleges and universities of technology) and B. Agric, B.Sc. Agric and B. Agric Honours (offered at traditional universities). The subsections that follow provide details on the offerings organised by Higher Education (HE) Institutions in South Africa, i.e.:

- Colleges of Agriculture
- Universities of Technology
- Traditional universities.

Colleges tend to be very practical whereas universities of technology tend to have a stronger mix of theory and practice and traditional universities tend to be more theoretical in their learning content.

2.2.1 Curricula at Agricultural Colleges

Eight of the eleven agricultural colleges in South Africa offer a three-year Diploma (N.Dip) at NQF level 06. The two-year Higher Certificate is being phased out as it does not conform to the new Higher Education Qualification Framework (HEQF). It should be noted that the agricultural colleges (including those not offering formal qualifications) are all endowed with working farms which provide the learning space for practical agricultural training. The size of the farms and the quality of the infrastructure vary. Each college has its technical specialisation and college farms are constituted accordingly. Together, these eleven colleges offer six different qualifications (National Diplomas), mainly in production and farm management. Of these, five include agricultural extension in their curricula while six do not. Table 1 summarises the offerings at all Colleges of Agriculture in South Africa. It also shows whether extension is included in the curriculum and, if so, what percentage of the qualification covers extension.

Table 1: Agricultural Qualifications on offer at Agricultural Colleges

Institution	Undergraduate Agricultural Offerings	Extension in the curriculum (% of N.Dip Curriculum)
Cape Institute Agricultural Training (CIAT)	N.Dip/B. Agric (Stellenbosch)	Yes (12,5%)
Cedara	N.Dip (see UKZN for B. Agric)	No
Fort Cox	N.Dip	Yes (4%)
Glen	N.Dip	Yes (7%)
Grootfontein	N.Dip	Yes (3%)
Owen Sithole (OSCA)	N.Dip	Yes (6%)
Potchefstroom	N.Dip	No
Madzivhandila	N.Dip	No
Taung	N.Dip	No
Tompi Seleka	N.Dip	No
Tsolo	N.Dip	No

Source: Adapted from DAFF report (2008) summary of study findings on the evaluation of AET in South Africa.

The above table shows that agricultural extension does not command very much learning time from students studying diplomas in agriculture. Agricultural colleges also play a significant role in the training of producers and rural communities involved in farming. Short courses offered by these colleges range from production, management to social facilitation. Table 2 below shows the role of these colleges in training producers.

Table 2: Role of colleges on training producers

Institution	Farmer or communal training Offerings
Cape Institute Agricultural Training (CIAT)	Offers further education and training (FET) short courses for agriculture. Anyone can apply; there are no restrictions on admission. Course participants must have their ID books available.
Cedara	Cedara College offers a wide range of short courses for farmers and communities. Short courses in agriculture management, such as agriculture cooperative management, farm management, farm administration; short courses on animal production, crop production and social facilitation.
Fort Cox	The Rural Development Centre (RDC) is a section of Fort Cox College which provides a wide range of training, mentoring and facilitation through accredited and non-accredited short course training and learnerships. The anticipated benefits of using this centre comprise a rural environment conducive for natural resource based training, a variety of services at a central point, (such as training facilities, reasonable accommodation and dining area), a close proximity to the farm and the fields; all factors which enhance an integrated learning.
Glen	The college also offers non-formal training (NQF level 1 to 4) through the provision of short courses to farmers.
Grootfontein	Skills training of new farmers and farm labourers (NQF level 2-4) presented off-campus and Extension and Outreach programmes.
Lowveld	The college also offers informal training. It comprises short courses in various subjects according to the needs of the farming community and can last from a few hours to two weeks.
Owen Sithole (OSCA)	Offers short courses on hydroponics and nursery management.
Potchefstroom	The college also offers informal training through the provision of short courses to farmers. The college farm offers valuable practical training opportunities.
Madzivhandila	Serves as a training centre, offering short courses on agriculture production for farming communities.
Taung	Offers short courses on request.
Tompi Seleka	At present, this college is restructuring courses to comply with communities as well as provincial and national needs.
Tsolo	Offers short courses on agricultural production to farmers and land reform beneficiaries.

2.2.2 Curricula at the University of Technology

South Africa has seven (7) universities of technology (including Nelson Mandela Metropolitan University and UNISA). These institutions offer National Diplomas (N.Dip) and Bachelors of Technology (B.Tech). As with the colleges, the N.Dip is a 3-year qualification. The B.Tech is a further one-year qualification articulating from the N.Dip.

Table 3 below presents the overview of the undergraduate offerings in agriculture at these institutions and whether or not extension is included in the curricula. Given that the B.Tech is (could become) a commonly adopted upgrade qualification for Extension Practitioners with diplomas, it is important to note that only CPUT and TUT offer a B.Tech in agriculture that have extension content. As with the college diplomas, Extension Practitioners with a B.Tech (except from the two indicated institutions) will therefore have little or no formal training in agricultural extension and again this fact should be taken into consideration when considering upgrading of qualifications.

Table 3: Overview of undergraduate agricultural and extension offerings at Universities of Technology in South Africa

Institution	Undergraduate Agricultural Offerings	Extension in the curriculum
Cape Peninsula University of Technology	Diploma Ag. Mgmt. Diploma Agric B.Tech Agric	No Yes Yes
Central University of Technology	Diploma/B.Tech Agric Mgmt	No
Mangosuthu University of Technology	Diploma Animal production Diploma Agric Diploma community extension N.Dip Nature Conservation B.Tech Nature Conservation N.Dip Environmental Health N.Dip Analytical Chemistry B.Tech Chemistry	No Yes Yes No No No No No
Nelson Mandela Metropolitan University	Diploma/B.Tech Agric Mgmt.	No
Tshwane University of Technology	Diploma/B.Tech Agric N.Dip Food Technology B.Tech Food Technology M.Tech Food Technology N.Dip Horticulture B.Tech Horticulture M.Tech Horticulture	Yes No No No No No No
Durban University of Technology	N.Dip Food Technology B.Tech Food Technology N.Dip Consumer Science: Food and Nutrition B.Tech Consumer Science: Food and Technology M.Tech Consumer Science: Food and Nutrition N.Dip Horticulture B.Tech Horticulture	No No No No No No No

¹NMMU & UNISA have been included in this grouping because their main agricultural qualifications are Diplomas and B Techs

Institution	Undergraduate Agricultural Offerings	Extension in the curriculum
	N.Dip Landscape Technology N.Dip Environmental Health B.Tech Environmental Health N.Dip Biotechnology B.Tech Biotechnology M.Tech Biotechnology D.Tech Biotechnology N.Dip Maritime Studies N.Dip Analytical Chemistry B.Tech Chemistry M.Tech Chemistry D.Tech Chemistry	No No No No No No No No No No No
UNISA	Diploma Ag. Mgmt./An Health/Hort B.Tech Ag Mgmt./An Health/Hort B Consumer Science B.Sc. (Agric Science)	No No Yes No

Source: Adapted from DAFF report (2008) summary of study findings on the evaluation of AET in South Africa.

2.2.3 Curricula offered at Universities

There are nine universities that offer science qualifications (e.g. B.Sc.) that have agricultural programmes. Among these universities, approximately 30 undergraduate agricultural qualifications are offered. Twenty-four of these include agricultural extension in their respective agricultural curricula whilst the remaining five (5) do not and one could not be confirmed. Table 4 below provides an overview of the undergraduate offerings in agriculture at these institutions. It also shows whether or not extension is included in the curricula.

Table 4: Overview of undergraduate agricultural and extension offerings at Universities in South Africa

Institution	Undergraduate Agricultural Offerings	Extension in the curriculum
North West University	Diploma Agric Crop Science Diploma Animal Health Diploma Animal Science B.Sc. Crop Science B.Sc. Agric Economics Hons B.Sc. Agric Extension M.Sc. Crop Science M.Sc. Agric Ext	No No No No No Yes No Yes
University of Fort Hare	B. Agric B.Sc. Agric Hons Agric Ext M.Sc. Agric Ext PhD Agric Ext	Yes Yes Yes Yes Yes

Institution	Undergraduate Agricultural Offerings	Extension in the curriculum
University of KwaZulu-Natal	B. Agric (Agricultural Extension and Rural Management) B. Agric Mgmt. B.Sc. Agric B.Sc. in Engineering M.Sc. in Agriculture	Yes No No No Yes
University of Limpopo	B. Agric Management B.Sc. Agric M Agri Extension M Agric Mgmt. M Sc. Agri Mgmt.	No Yes Yes No No
University of Pretoria	B.Sc. Agric B. Inst. Agrar Advanced University Dip Extension and rural development M.Sc. Agric Ext M.Sc. Forestry Science PhD Forestry Science	No Yes Yes Yes No No
University of Stellenbosch	B. Agric Admin B. Agric (CIAT) B.Sc. Agric B.Sc. Food Science B.Sc. Forestry and Wood Science	No Yes No No No
University of the Free State	Diploma B. Agric B.Sc. Agric	Yes Yes No
University of Venda	B Ag/B Ag Mgmt. B.Sc. Ag B Hons Extension B.Sc. Food Science and Technology B.Sc. Forestry Science Rural Development Hons Masters Rural Development PhD in Rural Development	Yes Could not confirm Yes No No No No No
University of Zululand	B Consumer Science (Extension & Rural Dev.) B.Sc. Agric B.Sc. Hons in Agric Ext M.Sc. in Agric Ext PhD in Agric Ext	Yes Yes Yes Yes Yes

Source: Adapted from DAFF report (2008) summary of study findings on the evaluation of AET in South Africa.

Table 5 below gives further details about the presence of extension in the agricultural curricula of these institutions. Among the 3-year qualifications (except for UKZN) the extension content is well below the 25% standard set by the Standard Generating Body (SGB) for Extension. It is further evident that for the 4-year B.Sc. Agric qualifications, none of the universities reaches the standard (with the highest being the B.Sc. Agric offered at Fort Hare – 10%.)

Table 5: Percent (%) of university curricula covering extension by qualification

University	Diploma	B. Agric	B.Sc. Agric	B. Agric Honours	Comments
Fort Hare	N/A	12%	10%	56%	Hons: Extension
Free State	6%	4%	N/A	N/A	Dip: 2-yr undergraduate
Limpopo	N/A	5% (Agric Mgmt.)	Ani Prod: 2%	N/A	None
			Agron: 0%		
			Pasture: 2%		
			Soil Science: 5%		
North West	(N/A	N/A	Ag Econ: 9%	PGDip:100%	None
			An Health: 2%		
			An Science: 7%	B.Sc. Hons Ext: 75%	
			Crop: 3%		
Pretoria	N/A	N/A	Ag Econ: 3%	B Inst Agrar: 100%	None
			Others: 0%	Adv. Dip: 100%	
Stellenbosch	N/A	13%	N/A	N/A	None
UKZN	N/A	33%	N/A	47%	None
Venda	N/A	N/A	Unconfirmed	N/A	None

Source: Adapted from DAFF report (2008) summary of study findings on the evaluation of AET in South Africa

Note: [N/A: Indicates that the institution does not offer that qualification]

Table 5 also highlights the fourth year options; B. Agric Hons; B.Sc. Hons, B Inst Agrar Hons and the Advanced Diploma in Extension. It is evident that these qualifications are dedicated towards and focused on extension content and, as such, are useful vehicles for providing upgrading and specialised extension training.

RECOMENDATIONS

3.1 Ideal extension curricula mix

Extension Practitioners should enrol for a four-year qualification in agriculture with a minimum of 25% extension content as per set standard by the SGB. In addition, the following study modules are required for a postgraduate qualification (New NQF Level 8) with a minimum of 120 credits in Extension.

- Extension Philosophy, organisation and management
- Communication for sustainable rural development
- Leadership and group dynamics
- Community development and rural sociology
- Extension programme evaluation and research
- Principles and approaches of rural development and extension
- Extension programme and project planning and management
- Human behavioural and decision making
- Development principles: theory and practice.

Though it went dormant in 2009, the SGB for Extension developed the Agricultural Extension Landscape for South Africa in 2005, identifying specific concepts, study fields and essential knowledge and skills areas as indicated in Table 7 below.

Table 7: The Agricultural Extension Landscape – Extension concepts, study fields and essential knowledge/skills areas

CONCEPT	STUDY FIELD	ESSENTIAL KNOWLEDGE/SKILL AREAS
Communication and interaction (Vehicle through which extension takes place)	Communication	• Fundamentals of communication • Communication strategies • Individual/group/mass communication • Communication aids • Managing the communication process • Mentoring (the protégé and mentor) • Individual facilitation process • Consultation dialogue
	Group facilitation	• Group dynamics and theories • Group forming and utilisation • Facilitation methods and techniques • Leadership development • Adult education
Extension methodology (Implementing and managing the extension process)	Approaches to Extension	• Different implementation approaches and structures • Philosophy of change and development • Extension systems • History and development of agricultural Extension • Action research and action learning
	Management in Extension	• Strategic planning and management • Corporate policy and capacity building • Organisational and systems theory • Functions of management • Motivational theory

CONCEPT	STUDY FIELD	ESSENTIAL KNOWLEDGE/SKILL AREAS
		• Networking, linkages and coordination • Programme development and planning • Programme implementation and management • Evaluation of extension • Extension accountability • Extension profession quality management systems • Ethics and professionalism
Extension philosophy and practice <i>(The science of Extension)</i>	Behavioural change	• Agricultural production as forms of behavioural influencing factors • Behaviour fundamentals and theories • Behavioural change processes and intervention • Adoption and diffusion processes
	Decision Making	• Basis to behavioural change • The decision making process • Influence and function of mediating variables • Individual decision making • Group decision making • Risk, uncertainty and risk perception • Information and knowledge management in judgment and decision making
Contextual Extension <i>(The context or environment of extension practice)</i>	Community development	• Rural sociology, structures and leadership • Dynamics of social change • Organisational and institutional structures • Participation and empowerment • Facilitation, negotiation and conflict resolution • Community developing roles • Social networking and coordination
	Extension Policy- making	• Natural resource utilisation and protection • The policy making process • Policy analysis and evaluation • Technology transfer and skills development • The agricultural/legal environment • Commercial agricultural production environment • Small-scale agricultural production environment

Source: Daff Report on Evaluation of Agricultural Education and Training Curricula in South Africa (2008).

3.2 Most appropriate Extension Related Programmes

A large number of agricultural qualifications that offer extension related content as part of the qualification (26 qualifications propagate that it incorporates some extension content) exists in most institutions of higher learning that offer agriculture qualifications. Further in-depth review however showed that only 10 undergraduate programmes have 25% or more extension content. These are the most prominent institutions and/or existing qualifications warranting further specific consideration (Evaluation of Agricultural Extension Related Education and Training Curricula at Institutions of Higher Learning and the Development of a Framework with Recommended Learning Pathways and Qualifications. 2008).

- The Advanced University Diploma in Agricultural Extension offered by the University of Pretoria and which is focused fully on extension (100%)
- The B.Tech: Agriculture offered by the Cape Peninsula University of Technology (50%)
- The National Diploma: Community Extension offered by the Mangosuthu University of Technology (37%)
- The B. Agric: Agricultural Extension and Rural Resource Management degree offered by the University of KZN (33%)

- Various B.Tech qualifications on offer by the Tshwane University of Technology (TUT) – with the B.Tech: Agricultural Development and Extension the most prominent (25%).

In addition to the above-existing undergraduate programmes, key higher education institutions such as the University of Fort Hare and the University of KZN are all in the process of developing and establishing new and additional extension qualifications and programmes (e.g., B. Agric: Extension degrees) that are based on and aligned to those fields identified by the SGB for extension as critical aspects and components to be included within extension curricula. (Evaluation of Agricultural Extension Related Education and Training Curricula at Institutions of Higher Learning and the Development of a Framework with Recommended Learning Pathways and Qualifications. 2008). The University of Pretoria have included Extension qualifications and programmes (e.g., B. Agric Hons and M Agric in Extension and Rural Development) in their 2014 Prospectus (University of Pretoria Prospects 2014). The suitability and appropriateness of the learning programme to provide the learner with an upgraded qualification must be considered, i.e., its suitability to upgrade existing underqualified extensionists from a diploma level to a recognised degree level. In this regard, the learning approach and methodology must accommodate the needs, requirements and circumstances of learners who are in full-time employment. One of the challenges is to get skills for the identified areas of competencies. It is important to either work with established commercial farmers who are willing to become mentors of Extension Practitioners or to work with specialised institutions/colleges that implement such skills programmes.

3.3 Recommended modules and their objectives

Most of the courses in the programme recommended below in Table 8 are concerned with attitudinal change outcomes. In addition to that, there are a good number of courses with practical knowledge and skill orientations. Most importantly, the face-to-face course delivery shall dominate practical oriented and participatory approaches as to satisfy the demand of student centre learning methods. Courses which focus on post-harvest handling, processing and value addition of agricultural products are given due emphasis in this programme.

Table 8: Modules and their objectives

MODULES		
No	Description	Module Objectives
01	Foundation courses	This module aims at guiding students to develop language skills, including listening, speaking and vocabulary. In addition, students will understand the fundamentals of the new trends and future direction of IT and develop basic computer applications.
02	Value chain in farm animal enterprises	The objective of this module is to introduce processing, preservation, storing, transporting and marketing of different animal and poultry products and byproducts. In addition, students will understand the basic skills of cattle, small ruminant, small-scale poultry, honey production and management practices. It also helps students to equip with feed production, conservation, processing, storage, quality maintenance, marketing practices and proper handling and utilising of feed resources.
03	Value chain in crop enterprises	The objective of this module is to introduce the economic importance, production and management practices of field, industrial and horticultural crops production and marketing. It also aims to practices of value chain and post-harvest technology of the crops. In addition, students will understand the basic skills of field, industrial and horticultural crop production practices. Students will be able to identify and test quality parameters and quality affecting factors of the crops.

MODULES		
No	Description	Module Objectives
04	Agricultural Extension and Communication	The module is designed to introduce students to the principles of extension, different extension methods and techniques, the basic concept of human behaviour, social psychology and the importance of agricultural information management on development. Understanding the nature of groups and group dynamics. This module also helps students to develop and use appropriate audio-visual material and develop good communication skills with the rural communities. Understanding the concept and principles of adult education, the basic skills of how to organise training. Understanding the concept of programme planning and will equip students with designing and evaluating appropriate development programmes.
05	Rural Development	The objective of this module is to introduce the basic concept and major theories of development; gender sensitive approaches to rural development; concept of farming system, entitlements and strategies of livelihood; the concept of culture, socialisation and social stratification. In addition, students will understand the basic concept of cooperatives and other economic organisations in rural areas. The module also equips students with designing, planning and working with men, women and young farmers.
06	Value Chain and Quality Standards	The objective of this module is to introduce the importance and principles of the value chain approach in agriculture. It also enables students to identify the challenges and opportunities in value chain development in the agri-business sector and tasks involved in value chain mapping. In addition, students will understand the need for quality, standards and safety assurance schemes along the agricultural produce.
07	Agricultural Economics & Agri-business	The general objective of this module is to familiarise students with the basic concepts of economics and marketing; the concepts of project, types of project and project cycle; the concepts of agribusiness, rural finance and entrepreneurship. It also introduces students with skills, qualities and attributes of entrepreneur and entrepreneurship and equips them with management of farms. It shows them the pathway on how to develop and run a small business.
08	Food Science & Human Nutrition	The module is designed to introduce students to the principles of food science and science of human nutrition; the basic principles and techniques of food preservation and processing. Students will be able to identify the cause and consequences of nutrient deficiency and also able to prepare a low-cost balanced meal.
09	Natural Resource Management	The objective of this module is to introduce the basic concepts of soil and water conservation and integrated watershed management. Students will be able to assist farmers in implementing small-scale irrigation and water management practices and to apply soil and water conservation practices.
10	Extension Research	This module is designed to enable students to gain a clear understanding on basic concepts of action research methods from developing a sound supervised enterprise proposal up to writing of a research report based on findings in extension research. It also aims to impart clarity on the skills required to carry out a research projects successfully.

Source: Curriculum Development Proposal on Agricultural Value Chain Oriented Extension Training for Mid-Career Extension Professionals. (2010)

Table 9: Modular structure of the programme

Module code	Module Title	Course Title	Cr/Hrs
01	Foundation courses	Communicative English	3
		Basic Writing Skills	3
		Introduction to Information and Communication Technologies	3
TOTAL			9
02	Value chain in farm animal enterprises	Livestock Production and Product Value Addition	4
		Poultry Production and Product Value Addition	2
		Feed production and processing	2
		Agriculture	1
TOTAL			9
03	Value chain in crop enterprises	Field Crops Production and Post-harvest Value Addition	4
		Horticultural Crops Production and Post-harvest Value Addition	4
TOTAL			8
04	Agricultural Extension and Communication	Extension Methods and Approaches	3
		Training for Rural Development	3
		Communication and Audio-visual Techniques	3
		Agricultural Information Communication Management	2
		Extension Programme planning, Monitoring and Evaluation	3
		Social Psychology and Group Dynamics	2
TOTAL			16
05	Rural Development	Theories and Practices of Rural Development	2
		Gender and Youth in Development	2
		Farming Systems and Livelihood Analysis	3
		Rural Sociology	3
		Cooperatives for Rural Development	3
TOTAL			13
06	Value Chain and Quality Standards	Value Chain Approach in Agriculture	2
		Quality Assurance and Standardisation of Agricultural Products	2
TOTAL			4
07	Agricultural Economics and Agri-businesses	Entrepreneurship and Agribusiness Management	3
		Agricultural Economics and Marketing	4
		Agricultural Project Planning and Analysis	2
TOTAL			5
08	Food Science and Human nutrition	Principles and Practices of Human Nutrition and Food Sciences	3

Module code	Module Title	Course Title	Cr/Hrs
09	Natural Resource Management	Soil and Water Management	4
10	Extension Research	Research Methods in Agricultural extension	2
		Statistics for Social Science	3
		Introduction to Supervised Extension Projects (SEP-I)	2
		Needs Assessment and Project Proposal Preparation and Presentation (SEP-II)	2
		Off-campus SEP (Project implementation) (SEP-III)	5
		Off-campus SEP Evaluation (SEP-IV)	1
TOTAL			15
GRAND TOTAL		33 courses	90

Source: Curriculum Development Proposal on Agricultural Value Chain Oriented Extension Training for Mid-Career Extension Professionals

3.4 Quality Assurance

The curriculum and standard committees at institutions of higher learning will review the curricula for the appropriate format and procedure, including the following:

- Closely supervising and monitoring the proper implementation of the approved curricula
- Advising the governing bodies of the institutions of higher learning on the establishment of curricula for the various units of the universities or colleges and on any major change approved curricula
- Advises the governing bodies on the degree of proficiency to be granted by the universities or colleges and undertake periodical review of the curricula through the participation of relevant stakeholders.

The quality of the programme should be assessed in terms of the instruction performance and the impact on graduates looking for further studies.

3.4.1 Continuous Professional Development (CPD)

DAFF developed the National Framework for Extension as a Field of Practice (2014) to promote professionalism and improve image of extension and to enable professional registration of Extension Practitioners. This will ensure Continuous Professional Development (CPD) of Extension Practitioners. The need for ensuring the CPD has been clearly articulated organisations that advocate good extension practice such as the Global Forum on Agricultural Advisory services. Continuous Professional Development is the means by which people maintain their knowledge and skills related to their professional lives; it is a structured approach to learning to help ensure competence to practice, taking in knowledge, skills and practical experience. Extension plays an important role in agriculture development. However, these services need new capacities to address the current challenges in agriculture and to contribute better to agriculture innovation (GFRAS 2012 p. 17).

Conclusion

This report transforms and aligns the core competencies of extensionists towards a comprehensive development agenda. It further promotes the value chain approach for integrated and holistic extension services. After the report has been approved by the Executive Committee (EXCO) of DAFF, facilitation needs to be done between DAFF and the Department of Higher Education (DHE) for consideration of the recommended core competencies and curricula of extension. A feasibility study should be conducted by DHE in collaboration with DAFF to assess the implementation of the recommended curricula. The expected outcome is the curricula for extensionists being reviewed by DHE and further implementation by Institutions of Higher Learning.

Bibliography

1. Belay Kassa and Ferdu Azerefege, 2008. Case Study of Sasakawa Africa Fund for Extension Education (SAFE) Program at Haramaya University. SAFE, Addis Ababa.
2. Belay Kassa, Ranjan S. Karippai, and Samson Eshetu, 2010. Impact Assessment of the B.Sc. Program for Mid-career Extension Professionals at Haramaya University, Ethiopia.
3. Department of Agriculture, Forestry and Fisheries (DAFF) (2014). Concept Note on Steps to follow for the Registration of Extension Practitioners. DAFF: Pretoria.
4. DAFF (2014). Framework document for Extension as a Field of Practice: Version 5.
5. DAFF (2014). National Extension and Advisory Services Policy. DAFF: Pretoria.
6. DAFF (2014). National Framework for Extension and Advisory Support Programmes. DAFF: Pretoria.
7. DAFF (2014). Report on Recommending the Type of Qualifications the Extension Practitioners should pursue. DAFF: Pretoria.
8. DAFF (2008). Evaluation of Agricultural Education and Training Curricula in South Africa, [Online] Available from: http://www.nda.agric.za/daaDev/sideMenu/SectoralColleges/docs/CURRICULUM_REPORT_Oct2008.pdf. Cited on 21th February 2014.
9. DAFF (2014). National Framework for Extension as a field of practise.
10. DAFF (2014). Strategic Plan, 2014/15 to 2016/17.
11. DAFF (..date). Report on Summary of Study Findings on the Evaluation of AET in South Africa
12. DOA (2005). National Education and Training Strategy for Agriculture and Rural Development in South Africa. DOA: Pretoria.
13. Global Forum for Rural Advisory Services (2012), The "New Extensionist" Roles, Strategies, and Capacities to strengthen Extension and Advisory Services.
14. Mwangi John Gowland, Catherine Chibwana and Ferdu Azerefege, 2005. Report of An External Evaluation of a B.Sc. Program for Mid-career Extension Professionals at Alemaya University, Ethiopia. SNational Development Plan, (2011).
15. South African Council for Natural and Scientific Professions (SACNASP) (2014). Draft Manual of Procedure for the Registration of Extension Scientists by SACNASP. SACNASP: Silverton.
16. University of Pretoria Prospects (online www.up.ac.za)

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

