International Journal of Research in Agricultural Sciences
Volume 3, Issue 2, ISSN (Online): 2348 – 3997)

Training of Farmers and Extensionist Towards Sustainable Agricultural Development (The Case of Tompi Seleka College of Agriculture)

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Abstract **– This paper discusses the concept of education and training and its role in a multidisciplinary sustainable agriculture in Limpopo province South Africa. The Department of Agriculture developed the Agricultural Education and Training (AET) Strategy in attempt to improve agricultural production through the rendering of quality agricultural education and training [1] (Department of Agriculture Forestry and Fisheries 2005:8). According to [2] Asiabaka 2002:5), education and training builds knowledge and capacity among farmers and extensionist to enable them diagnose their problems, identify solutions and develop plans and implement them with a little support from outside after thoroughly initiated. The paper suggests that a multidisciplinary education and training will not only aim at technology development but will also seek ways of stakeholder participation to ensure a sustainable agricultural development and dissemination. A descriptive research design was used to collect data [3] (Boone et al, 2007:1). It concludes that a well capacitated extensionist will not only increase agricultural productivity; but also lead to sustainable agricultural development through a joint effort with farmers.**

Keywords **– Farmers, Training, Extension, Development, Sustainable Agriculture.**

I. INTRODUCTION

In 2010 the National Department of Agriculture conducted a comprehensive investigation into the status of the 12 Colleges of Agriculture in South Africa. The aim of the study was to determine the way forward for the colleges in the light of the aims and objectives of the South African agrarian and land reform, with particular reference to transforming agriculture. According to Department of Agriculture Forestry and Fisheries,[4] (2011:5), one of the recommendations was that Agricultural Institutes be brought into a new dispensation, that they be harmonized in keeping with the objectives of the National Agricultural Extension and Training strategy, and that they be assisted to align their programmes and offerings to the ambitions and aims of the new emerging agricultural in South Africa. Rain fall predominantly from October to March and the annual rain fall typically varies between 350mm to 500mm [5] (Anteneh *et al* 2004:13). Figure 1, below present the map of all agricultural colleges in SA.In the absence of an act and regulation governing ATIs Norms and Standards, was therefore established. Its main purpose was to provide a plat form for positioning the ATIs to deliver on the South African agenda. They said a standard for performance in each of the indicated elements. Through the implementation and effective enforcement of the Norms and Standards, the ATIs will be shaped and transformed. In return for applying and adhering to these Norms and Standards, the ATIs should receive greater attention, clearer focus, and more funding, including appropriate human, financial and physical resources commensurate with their mandate. The main objective of setting Norms and Standards was to establish a platform for transforming the current Colleges of Agriculture into the future Agricultural Training Institutes and to implement AET strategy. Equally to these was to assist the ATIs to align their programmes and offerings to the ambitions and aims to the need of the agricultural sector and the provision of establishing equity and parity in terms of quality of educational offerings. The recently gazetted Higher Educations Qualification Framework (HEQF) has opened a way for the ATIs to continue offering National Qualification Framework (NQF) level 5 certificates and 6 diplomas. Further within the broader context of Higher Education, the ATIs will be actively involved in the Extension Recovery Plan (ERP) through the provision of in service training to public sector extension personnel as outlined in the Norms and Standards for Extension and Advisory Services in Agriculture as outlined by [4] (Department of Agriculture Forestry and Fisheries, 2011:3).

II. MATERIAL AND METHODS

2.1 *Site Description*

The study was conducted in Tompi Seleka College of Agriculture which is situated in Ephraim Mogale Local Municipality of the Sekhukhune district in Limpopo Province. The climate at Sekhukhune can best be described as hot and dry. Incidences of frost during winter are rare and during summer the maximum temperature often exceeds 30•C.

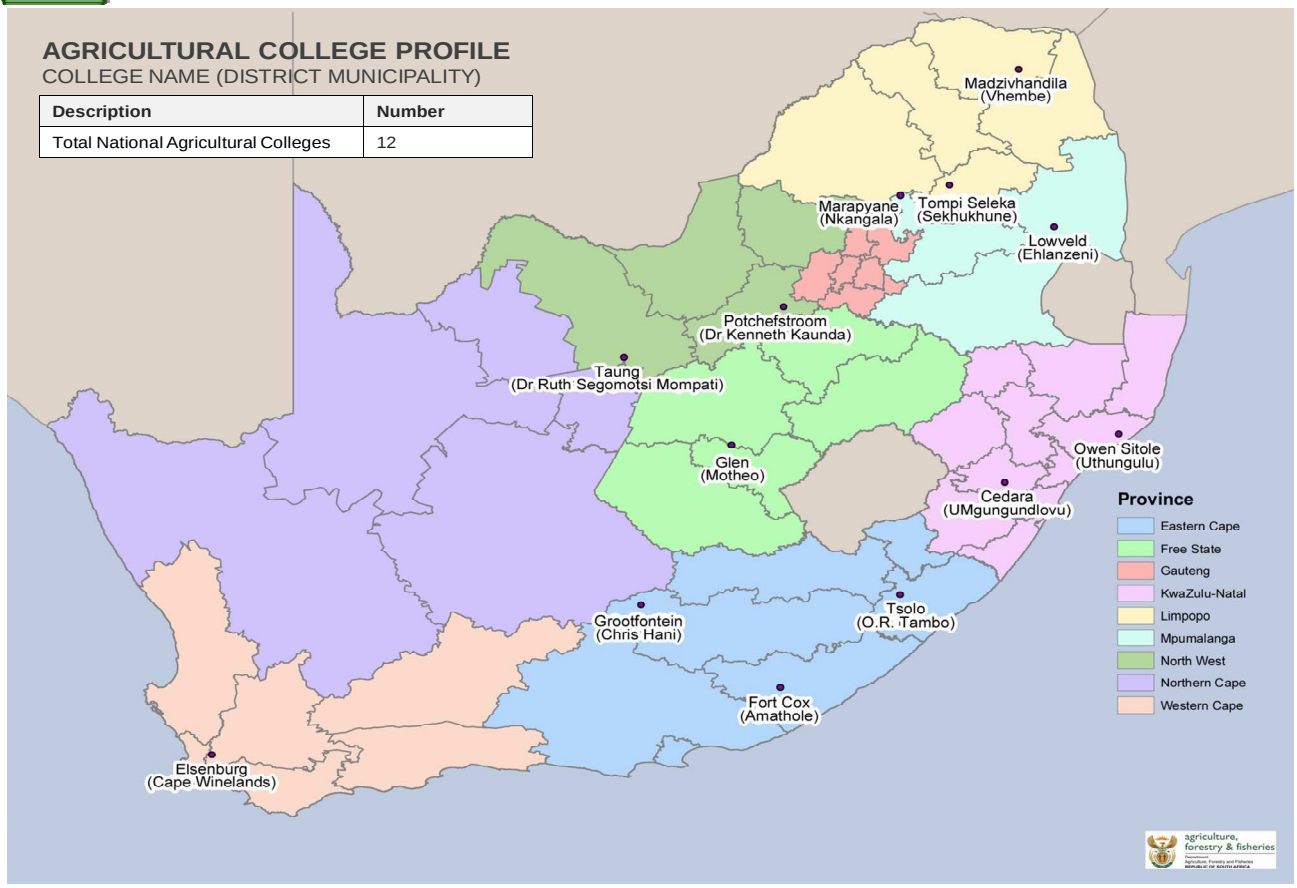

Figure 1.1. Locality map of all colleges of agriculture in South Africa, picture taken from Department of Agriculture Forestry and Fisheries.

According to [6] Acocks (1988:49) the Tompi Seleka College of Agriculture area falls under mixed bushveld type that covers some 10950 square km at an elevation of 750-1050 m and receives a rainfall of 350-650 mm. The bush consists of *Combretum apiculatum* and small admixture of several other bushes and trees such as *Acacia caffra*, *Dichrostachus cinerea* and *Lannea discolor*.

III. Study Approach

Multiple sources of data collection were used: documents review, structured questionnaires and focus group discussion during the APAC meetings in Eastern Cape and Durban respectively. A total of 30 participants from *different* colleges of agriculture were interviewed. The participatory and development process was controlled by participants. During this process, information that was used for decision making was mostly generated, analysed and interpreted during meetings and was largely based on the perceptions, experiences and opinions of participants. According to [7] Tshwana *et al* (2012:), the function of the researcher in this process is restricted to that of facilitator, documenter and provider of information.

IV. The Extension Officer Education and Training Needs and Curriculum Responsiveness

To this end the ideal knowledge and skills repertoire needed by extension personnel to undertake their roles and functions in a competent manner should be established. According to [8] Department of Agriculture Forestry and Fisheries, (2008:vi).At the end they must be compared to the qualification and skills profile of extensionists currently in the system; and the extent to which current curriculum on offer at the various AET provider Institutions address such needs. Existing extension qualification still follow the traditional approach and philosophy of extension where the focus is on production related knowledge and skills, technology transfer and negotiations/persuasion and subsequent behavioral change to adapt and implement new technology.

V. Agricultural Education and Training Offerings at the Colleges of Agriculture for Both FET and HET

Whilst essentially viewed as Higher Education Institutions, the colleges of Agriculture offer programmes and curricula spanning NQF levels 1 to 7 thus covering the GET, FET and HET bands within the new HEQF framework. This implies that they have various

accrediting bodies namely; the Higher Education Quality Committee of the Council on Higher Education as well as Umalusi and Agri-SETA for the programmes at NQF level 1to 4. The colleges were originally established as specialized training Institutions geared to address the agricultural education and training needs relevant to their specific regions and their agricultural environments [8] (Department of Agriculture Forestry and Fisheries, (2008:191). AS a results they are more flexible in their offering than the FET colleges and orient their programmes towards supporting the agricultural activities and practices within their regions resulting in some form of functional specialisation. Whilst the majority offer post FET NQF level 5 and level 6 programmes, some colleges such as Tsolo, Tompi Seleka and Madzivhandila are increasingly focusing on the training needs of emerging farmers through lower level short course offering; whilst others such as the Cape Institute for Agricultural Training: Elsenburg and Potchefstroom are focusing on higher level skills through collaboration with other higher education institutions and are now offering Degree and B Tech programmes. There is also considerable disparity between the colleges in terms of quality and standard of staff and facilities.

VI. FINDINGS AND DISCUSSION

Table: 6.1. Programme offerings at the colleges of agriculture (DAFF 2008: 193)

COLLEGE	PROGRAMME	NQF	DURATION	ACCREDITATION
Cedara	1. Higher Certificate in Agriculture. 2. Diploma in Agriculture. 3. Short Courses	5 6 NA	2 years FT 3 years FT Variable	HEQC HEQC Not Accredited
Elsenburg	1. National Certificate (Plant / Animal Production (Learnerships) 2. Higher Cert in Agriculture. 3. Dip in Plant Production (Viticulture) 4. Dip Animal Production 5. Diploma in Agriculture. 6. Diploma in Extension 7 .B Agric Viticulture 8. Short courses (SAQA US based)	1 – 4 5 6 6 6 6 6 1-4	1 year 2 years FT 1 year FT 1 year FT 1 year 3 years FT 3 years FT Variable	AgriSETA CHE CHE CHE CHE CHE CHE AgriSETA
Fort Cox	1. Dip in Social Forestry. 2. Dip in Agric: Animal Production. 3. Dip in Agric: Crop Production. 4. Dip in Agriculture: Agribusiness 5. Short Courses	6 6 6 6 NA	3 years FT 3 years FT 3 years FT 3 years FT Variable	3 years FT 3 years FT 3 years FT 3 years FT Variable
Glen	1. Higher Certificate in Agriculture 2. N Dip in Agriculture. 3. Short Courses	5 6 NA	2 years FT 1 year FT Variable	HEQC HEQC Not Accredited
Grootfontein	1. Higher Certificate in Agriculture. 2. Diploma in Agriculture. 3. Short Courses	5 6 NA	2 years FT 3 years FT Variable	HEQC HEQC Not Accredited
Lowveld	1. Higher Cert: Plant Production 2. Diploma Plant Production	5 6	2 years FT 1 year (post certificate)	CHE/HEQC CHE/HEQC
Madzivhandila	1.Learnerships: □ Animal Production □ Plant Production. 2. Short Courses	 4 4 NA	 Variable Variable Variable	 AgriSETA AgriSETA Not Accredited
Tompi Seleka	1.Learnerships: □ Animal Production □ Plant Production. 2. Short Courses	 4 4 NA	 Variable Variable Variable	 AgriSETA AgriSETA Not Accredited
Owen Sithole	1.Higher Certificate in Agriculture. 2. Diploma in Agriculture 3. Higher Cert in Home Economics 4.Dip in Agric: Home Economics 5. Short Courses	5 6 5 6 NA	2 years FT 3 years 2 years 3 years Variable	HEQC HEQC HEQC HEQC Not Accredited
Potchefstroom	1. H Certificate in Agriculture. 2. Dip in Agriculture.	5 6	2 years 3 years	HEQC HEQC

	4. B.Tech Agriculture 3. Short Courses	6 1-4	3 years Variable	HEQC AgriSETA
Tsolo	1. Short Courses	1-4	Variable	AgriSETA and non-accredited
Taung	1. N4 Cert Farming Management. 2. N5 Cert Farming Management. 3. N6 Cert Farming Management. 4. Diploma in Farming Management	4 4 5 6	1 year 2 years 3 years N6 plus 18 months	Umalusi Umalusi Umalusi

From the above table it is evident the majority of Colleges (9) offer the Higher Certificate in Agriculture (NQF 4/5) and the Diploma in Agriculture (NQF 5/6). Through collaboration with other HET institutions two Colleges are now offering either a Degree or B.Tech qualification and one institution offer Learnerships accredited by AgriSETA. With the exception of 2 Colleges all offer short courses (four institutions offer courses accredited by AgriSETA).

6.1. *Changes to Curricula Content and Emphasis*

Although agriculture generally kept up with scientific progress in the past, the pace of change is much faster today, requiring continual updating of curricula. Scientific knowledge is changing very quickly as modern communication technologies facilitate the global sharing of information among scientists and educators. Since "new" knowledge becomes "old" knowledge so quickly, it is essential that extension officers develop the skills and attitudes that will allow them to continue to learn and develop their competencies throughout their professional lives. Access or lack of access to the Internet will determine if the information gap is reduced, or if it will widen even further. If institutions are to keep pace with rapid changes in science and technology, continuing education for faculty members is necessary through scientific meetings and inter-institutional exchanges, including those that apply innovative uses of electronic information systems (e.g., electronic networks for collaborative curriculum development and distance education). A commitment must be made by institutions to improve the information infrastructure to ensure extension officers have access to the new information technologies [9] (Richardson, 1997).

FIGURE 6.2. Below shows the initiatives of the Department of Agriculture Forestry and Fisheries in attempting to meet the training needs of both the extension officers, farmers and students.

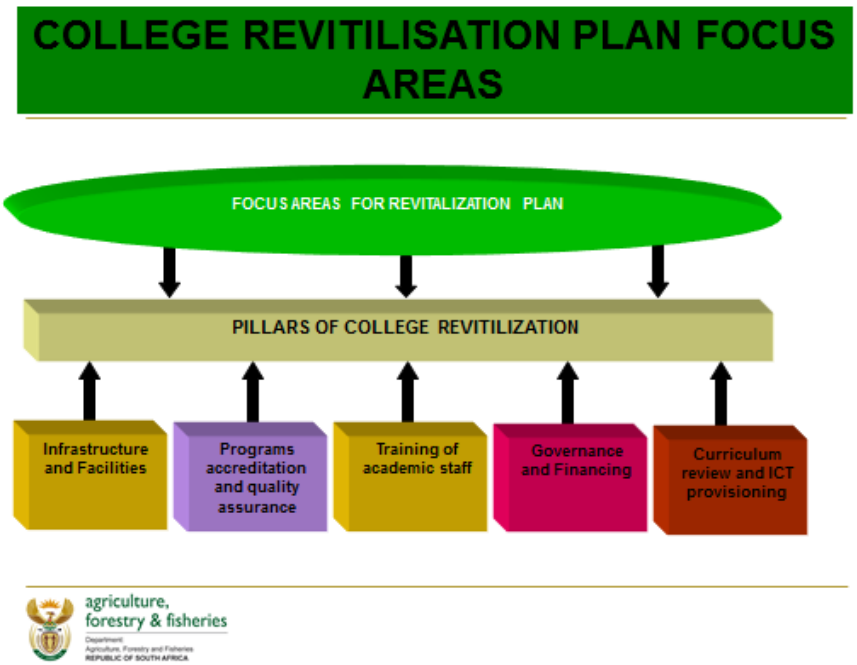

FIG. 6.2. Colleges of Agriculture's revitalization plan focus areas (Presented by Mr Sivelile Nompozolo of DAFF in several APAC meetings

It is with evidence that pillar one's focus is the construction of new buildings and renovation of existing ones, this will include libraries, hostels, lecture rooms, halls, sheds, fencing access roads etc. As seen in Table 6.1, most colleges do not have accreditation in their courses, therefore pillar two is already in use to be able cater for such needs. A well trained academic staff will make it possible to close the gap as identified in extension

related issues. Pillar five will help expose extension officers to new technologies as has been identified in page 7 above.According to [10] Rogers, (1996, p.86) "poor training of agricultural extension staff has been identified as part of the problem of the relative ineffectiveness of much of extension in the field." This applies not only to extension staff, but to agricultural professionals in general. Unfortunately, the training of human resources in agriculture is often not a high priority in the development plans of countries. As a result, curricula and teaching programmes are not particularly relevant to the production needs and employment demands of the agricultural sector [11](Van Crowder, Lindley, Bruening, & Doron, 1999:2).

The responses from extension officers interviewed on whether there is a need for curriculum change and the introduction of technology in the colleges are explained in Figure 6.3.

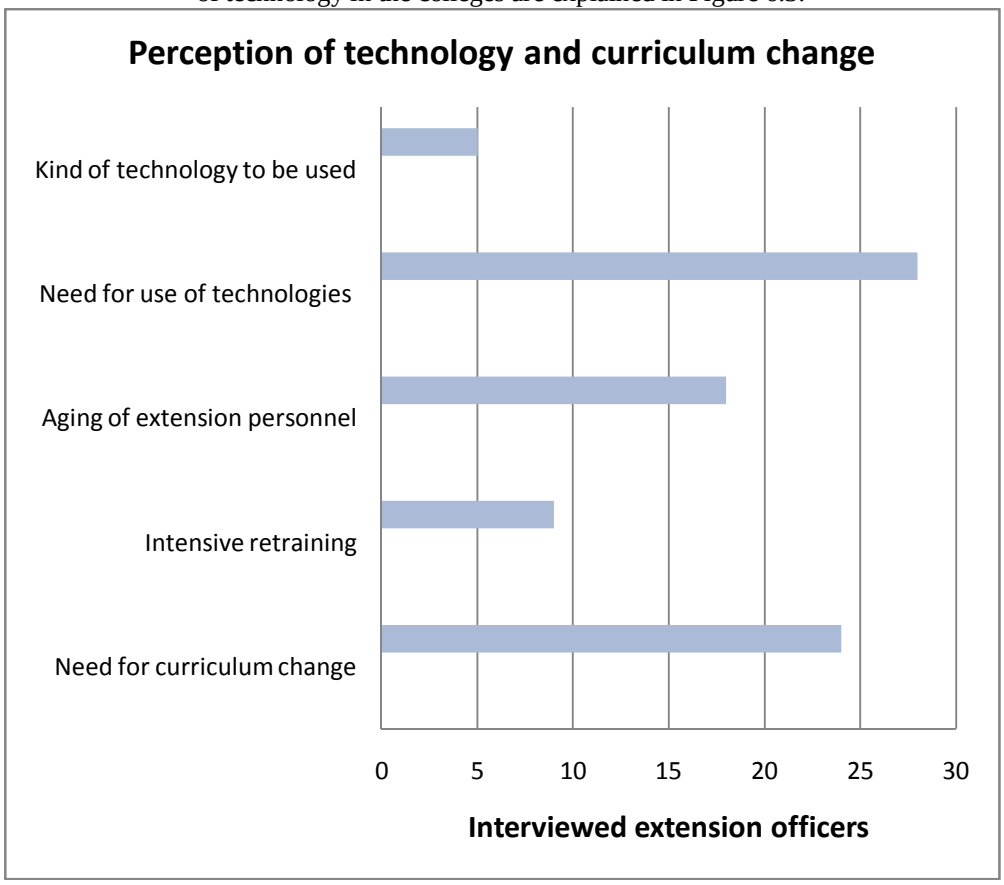

Figure 6.3. Perceptions on curriculum change and use of technology in the colleges of agriculture

From the above chart it is clear that 93% of the interviewed participants would like to have use of the technology in the South African agricultural colleges. When asked the type of the technology to be used they could not say because only 16% were able to mention but few. According to [12] (Moran, 2003: 29) colleges of agriculture must be able to influence extension officers to become heavy users of technology and by distributing information and educational materials, including the Internet, the World Wide Web, interactive video and satellite technology. Aging of the extension personnel was a worrying factor because the interviewed participants argued that as much as they exceed for retirement, government is not doing much to replace them. Even if there was a bit of replacement, the focus and dedication by the new upcoming personnel is not convincing to do as required. However Zwane 13] (2005:18) emphasized that the extensionist must be matured to manage themselves and be able to command respect in their work environment.

VII. CHALLENGES

The Higher Education Qualifications Framework as set out as policy in terms of section 3 of the Higher Education Act, 1997 (Act No. 101 of 1997) has already been published by the Minister of Education. This new qualifications framework has been designed to meet demanding challenges facing the higher education system in the 21st century. The implementation date for this policy was 1 January 2009. However, institutions will need some time to phase out their existing qualifications in terms of this policy, so there will be a transition period to full compliance. All colleges of agriculture have however embraced the challenge to redress the imbalances of the past which vary from inequities in the provision of AET to the provision of resources and access to curriculum

offerings. This however is a process that needs to be managed properly and each college of agriculture has its own challenges, advantages and disadvantages that do not automatically correspond with other colleges. This process is currently well on its way at the various colleges and whilst much has been attained to date through DAFF and there is still a lot that can be achieved.

VIII. Conclusion

The challenge for me is the mindset. Instead of considering the extension service as a public good, South Africa should now consider the extension services as a public-private initiative or partnership, meaning inviting more and more private companies to join with the public sector for strengthening the extension services right from national level to the rural community. In many developing countries, NGOs, private companies and farmers' organizations are delivering extension services to producers using a range of modalities. It is now widely accepted that no single actor or agency like colleges of agriculture are best placed to offer the wide ranges of advisory services required. This means that a plurality of service providers is needed to meet the needs of producers and the rural poor.

The role of governments must be that of ensuring quality. The system of accreditation and quality assurance, the national qualification structure and national planning processes must overcome barriers and reinforce articulation [8] (DAFF, 2008:216).Articulation must therefore enable the horizontal and vertical mobility of students between institutions with different missions and mandates. It must also enable staff mobility for the purposes of teaching and research. Thus, academics that have recognised specialist expertise in particular disciplines and fields should have opportunities to teach and supervise students of, and at, other colleges of agriculture. Whether Extension will remain relevant, in significant part, lies within each of us privileged to be Extension professionals.

IX. References

[1] Department of Agriculture Forestry and Fisheries, [2005]. *Agricultural Education and Training Strategy for Agriculture and Rural Development, in South Africa*. Pretoria: Directorate Education, Training and Extension Services.

[2] C. C., Asiabaka. [2002]. Promoting sustainable extension approaches: Farmer Field School (FFS) and its role in sustainable agricultural development in African. Owerri: Federal University of Technology.

[3] H. N. Boone, E.M. Hersman, D. A. Boone, &S. A. Gartin. 2007. Knowledge of sustainable agriculture practices by extension agents in Ohio, Pennsylvania, and West Virginia. Journal of Extension, 45(5), 11-19.

[4] Department of Agriculture Forestry and Fisheries, [2011]. *Norms and Standards for the Agricultural Training Institutes of South Africa*. Pretoria: Directorate Education, Training and Extension Services.

[5] M. T. Anteneh, D. G., Mekala, P. E. Mnisi, C.Mukisira, M. Muthui, C. Murungweni,&O. Sebitloane, [2004]. *Goats production and livelihood system in Sekhukhune district of the Limpopo Province.* ARD, report no,118. Wageningen: International Centre for development oriented Research in Agriculture.

[6] J.P.H. Acocks, 1988. *Veld types of South Africa*. 3rd ed. Pretoria: Government Printer.

[7] M., P. Tshwana. [2011]. Community-based rodent control in Regae (Limpopo Province, South Africa). M Tech dissertation. Tshwane University of Technology, Pretoria.

[8] Department of Agriculture Forestryand Fisheries, [2008]. *Evaluation of Agricultural Education and Training curriculum in South Africa*. Pretoria: Directorate Education, Training and Extension Services.

[9] D. Richardson. [1997]. *The Internet and Rural and Agricultural Development*. FAO: Rome, Communication for Development.

[10] A.Rogers. [1996]. Participatory Training: Using Critical Reflection On Experience in Agricultural Extension Training. FAO: *Training for Agriculture and Rural Development, Economic and Social Development Series* (54).

[11] L.,W. Van Crowder, I., Lindley, T. H., Bruening,. &N. Doron, [1999]. *Agricultural Education for Sustainable Rural Development: Challenges for Developing Countries in the 21st Century*: The Food and Agriculture Organization of the United Nations (FAO), Rome, Italy.

[12] G. Moran.[2003]. 21st Century: *A history of the north Dakoda State University Extension Service*. Fargo: North Dakoda State University.

[13] E., M. Zwane, 2005. Participation and linkages for improved extension delivery: an experience from Limpopo's BASED programme. In:*39th conference of the South African Society for Agricultural Extension*, 10-12 May 2005, Bloemfontein, Proceedings. Pretoria: South African Society for Agricultural Extension: 14-27.

Author's Profile

Born on 04/04/1956 in Groblersdal Town in the Sekhukhune district of Limpopo Province Republic of South Africa. Got Diploma in Agriculture on rural development in Tompi Seleka College of Agriculture situated in Marble Hall Town in 1985. Got B Tech Degree on rural development in 2001 in the Tshwane University of Technology situated in Pretoria the capital of Republic of South Africa in the Gauteng Province. Got Master's Degree in Plant Production on community rodent control in 2011. Got Diploma in Education from University of Limpopo in Limpopo Province next to Polokwane Town which is the capital of Limpopo Province in 2014.

He started working as the Ward Extension assistance in 1982. He then worked as the Agricultural Extension Technician from 1986 until 1992. From 1993 to 2003 he worked as the Agricultural Training Advisor in the Sekhukhune District and managing Five Municipalities namely Fetakgomo, Makhuduthamaga, Ephraim Mogale, Tubatse and Elias Motsoaledi. In 2005 and 2006 he worked as Agricultural Extension Advisor for the Limpopo Province facilitating training in five districts. He then joint Tompi Seleka College of Agriculture in 2007 as the head of Extension and Partnerships. In 2012 he became the Principal of Tompi Seleka College of Agriculture until now. He is presently enrolled as the PhD student with The Da Vinci University in 2014.