Tshwane University of Technology

We empower people

PROPOSAL ON THE FUTURE UTILIZATION OF THE FORMER CAMPUS OF THE GIYANI COLLEGE OF EDUCATION AS TSHWANE UNIVERSITY OF TECHNOLOGY (TUT) DISTANT CAMPUS

INSTITUTE FOR THE FUTURE OF WORK

AN INITIATIVE OF TSHWANE UNIVERSITY OF TECHNOLOGY | SOUTH AFRICA

TABLE OF CONTENTS

A. BACKGROUND

1. Introduction

The Khatsani Educational Initiative, tohether with Rixaka Heritage Forum and Royal Leaders Unity (RLU) approached the Tshwane University of Technology (TUT) about establishing a distant campus in the former Giyani College of Education. The Minister of Higher Education and Training, Dr Blade Nzimande, supports this project as part of the replication of the Imbali Education and Innovation Precinct Project motel in Pietermartzburg. The existence of a TVET collange in Giyani lends itself to the replication of this model. As the Minister explained in his Virtual National Council of Provinces (NCOP) Budget Vote Address on 8 June 2021, "explore and test an alternative modality of education delivery, based on closer multi-educational institutional co-operation, closer articulation, with science and innovation linkages". The news that TUT might be setting up a campus in Giyani as part of this project caught the media's attention and sparked public interest. Shortly after the announcement, the Munghana Lonene radio station phoned the Deputy Vice-Chancellor Teaching, Learning and Technology at the Tshwane University of Technology (TUT) to verify whether this was true. Many embraced this idea.

TUT has established that a feasibility study has already been conducted. The study came in handy to finalise establishing an educational facility in the former Giyani College of Education premises. Since its closure in 2003, the College has not been used for educational purposes. The surrounding communities and lobby groups petitioned the Minister of Higher Education and Training to reopen this as learning for the offering university programmes. The Khatsani Educational Initiative has been at the forefront of this call. The argument is that community members, who are generally poor, cannot afford to send their children to existing universities to study, which are far away. In considering the community's plea, the Minister commissioned a study to determine the feasibility of converting this facility into a post-school education and training (PSET) site. If feasible, what the content and form of programme delivery should be.

TUT is known for championing Distant Campus education in resonance with its motto, "We empower People". It started to offer distant education in Polokwane in 1986 in the field of Environmental Health. Campuses followed the Polokwane campus in Mahikeng, Welkom, QwaQwa, and Mbombela. The distant campuses built in Polokwane, eMalahleni and Mbombela still operate efficiently and effectively to date.

The Campus of the former Giyani College of Education is in the Limpopo Province. It falls within the jurisdiction of the Greater Giyani Local Municipality, one of five local municipalities in the Mopani District, which in turn is one of five districts in the Province. The town of Giyani is the seat of the District Municipality. Figure 1: According to the 2016 Community Survey, the Mopani District has a population of 1,159,185. The Greater Giyani Local Municipality has a surface area of 4,172 km², and a population of 256,127: thus a population density of 61.4 per km². Location of the Greater Giyani Local Municipality within the Mopani District, Limpopo Province.

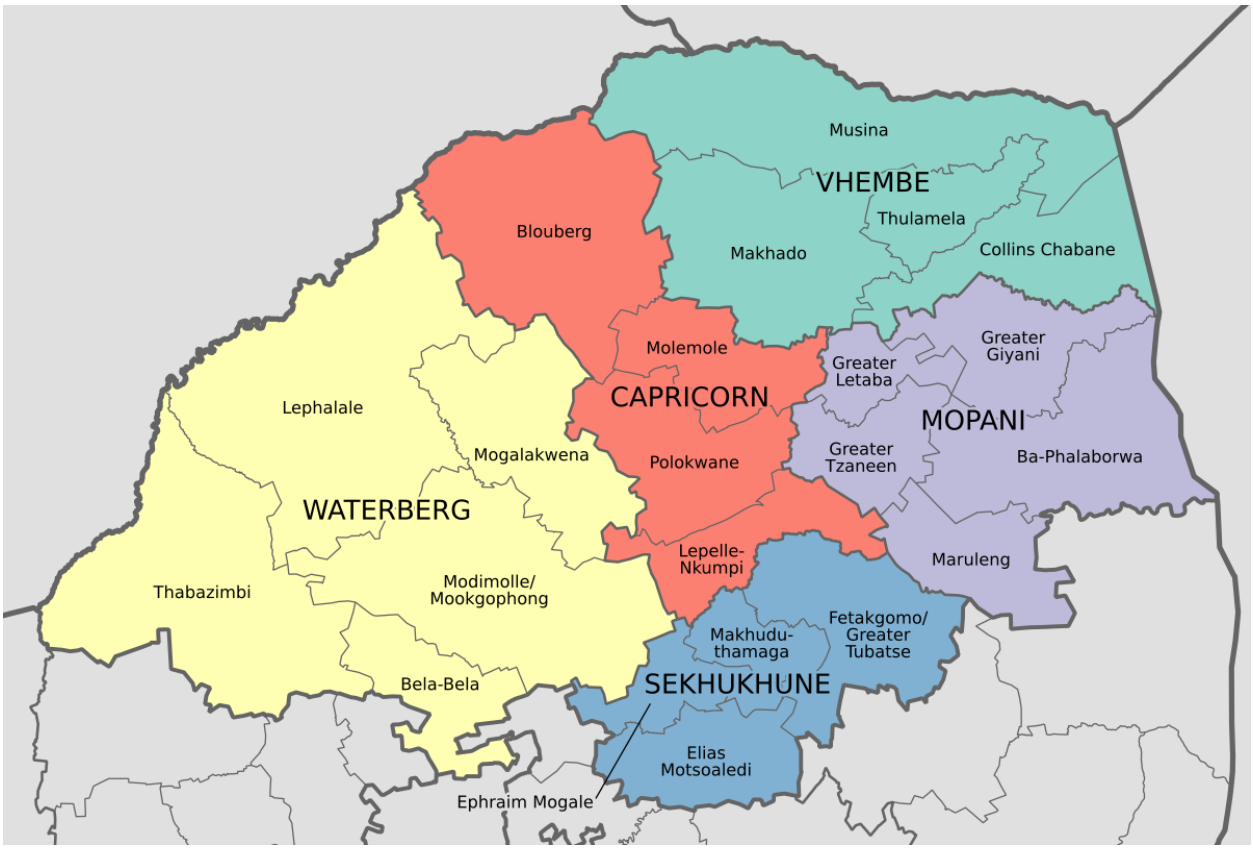


Figure 1: Location of the Greater Giyani Local Municipality within the Mopani District of the Limpopo Province.

The establishment of the distant campus at Giyani before the feasibility study should address the following issues:

a) A socio-economic assessment of the Mopani District, for example, population characteristics, number of NEETs (youth not in education, employment and training), main economic activities in the area, key industries, etc.

b) Facilities and resources available in the neighbouring urban areas, such as banks, residential facilities, hotels, conference and entertainment facilities, medical facilities, transport networks, etc.

c) The current educational landscape of the Mopani District, with reference to:

- ❖ The existing mix of educational institutions (primary and secondary schools, Technical and Vocational Education and Training colleges, nursing colleges, etc.);
- ❖ The geographical distribution of the educational institutions;
- ❖ The programmes / qualifications offered by post-school education and training institutions in the District; The enrolment patterns and participation rates (in the District) across the various education levels;
- ❖ The time-series analysis of aggregate matric pass rates, etc.

d) Information about the Site:

- ❖ The size of the land;
- ❖ The existence of an asset register and whether it is current;
- ❖ The estimated capacity of the campus using the HEMIS Building Space and Cost Norms;

- ❖ The current utilisation of the campus;
- ❖ The nature of the current involvement of various state and non-state agencies on the campus, etc.

e) Appropriate Programme and Qualification Mix, which should be informed by, inter alia, the skills required in the District and Province, and those that the envisaged post-school institution can contribute to in terms of national skills needs within a differentiated post-school education and training sector.

f) Human resources needed to ensure that the training institution operates optimally.

g) An assessment of the existing infrastructure and assets (teaching and learning facilities, residences, staff housing, equipment etc.) through a survey and condition assessment, to determine its state, extent and adequacy in view of the recommended utilisation of the campus.

h) Estimate the financial resources required for infrastructure/capital development, deferred maintenance, staffing, municipal services, operations, etc.

i) Draft a report containing the findings of a) - h) above and, based on these findings, propose feasible option/s for the use of the campus for the delivery of post-school education programmes.

On 17 to 18 August 2021, a senior delegation from TUT led by the Vice-Chancellor & Principal: Prof L R Van Staden, visited the campus to assess its current status. This delegation comprised Prof M S Mukhola: Deputy Vice-Chancellor: Teaching, Learning & Technology, Dr V B Papu-Zamxaka: Deputy Vice-Chancellor: Research, Innovation & Engagement, Dr A S Nthangeni: Deputy Vice-Chancellor: Student Affairs and Extracurriculular (Acting), Dr N Tlale: Deputy Vice-Chancellor: Operations and Mr M J Magedi: Advisor to the Vice-Chancellor & Principal.

2. Legal Framework

According to the Constitution Act, the provincial legislature has the concurrent power to legislate on education in the province at all levels (excluding tertiary education) subject to legislation regarded as reasonably necessary by the National Assembly. The White Paper for Post-school Education and Training (2013) focuses on building an expanded, effective and integrated post-school system. The post-school system is understood to comprise all education and training provided to those who have completed school, to those that did not complete their schooling, and to those who never attended school.

The post-school system consists of the following institutions falling under the control of the DHET:

- ❖ Public universities (26)
- ❖ Public technical and vocational education and training (TVET) colleges (50 colleges as multi-campus institutions with over 260 campuses);
- ❖ New public community colleges (as multi-campus institutions) incorporating the present public adult learning centres;
- ❖ Private post-school institutions;
- ❖ The SETA's and the National Skills Fund;
- ❖ The South African Qualifications Authority (SAQA) and the Quality Councils as regulatory bodies.

All public colleges under the control of other government departments must also comply with the requirements of SAQA, the quality assurance institutions, and the national qualifications framework (NQF). The Government contemplates shifting the responsibility for the agricultural colleges from the Department of Agriculture to the DHET. The NQF is organised as a series of levels of learning achievement, arranged in ascending order from one to ten. All qualifications and part qualifications offered in South

Africa are required to be registered on the NQF. The South African Qualifications Authority is the body with overall responsibility for the implementation of the NQF.

3. Brief History of the Former Giyani College of Education

The content of this section comes from three sources:
(1)Pratt, ED (2001). "Remodelling Teacher Education: 1994-2000". In Transformation in Higher Education Global pressures and local realities in South Africa, CHET; (2) Soobrayan, V (2003), SAJHE vol 17 no2; (3) Jansen, J (2003). "Mergers in SA higher education: theorising change in transitional contexts"

3.1 Position before 2001

Gazankulu, a semi-independent homeland for the Tsonga/Shangaan people, was given self-rule in 1969 by the former apartheid government. Venda became an independent state in 1979 and founded the University of Venda in 1982. This gave birth to the ideal of an own university for Gazankulu in Giyani, and the building of a university for Gazankulu had been in an advanced stage before the idea was abandoned by the first democratic government of South Africa in 1994.
The former Giyani College of Education was founded in 1989 as a training college for secondary school teachers of the then Gazankulu Education Department. The University of the Witwatersrand served as external examining body for the College. Two four-year diplomas were offered to students, namely the Higher Diploma in Education (Secondary) and the Higher Diploma in Education (Secondary – Physical Science). The curriculum of the latter Diploma included subjects such as Chemistry, Physics and Mathematics.

This is reported by KZ Nkuna in his MEd Dissertation (p284) submitted to the University of South Africa (June 1994).

In 1994 Gazankulu became part of the Limpopo Province and the Giyani College of Education became a teacher training college of the Limpopo Department of Education (LDE) in accordance with the Constitution Act (education at all levels excluding tertiary education, is a provincial competence). This was not in line with the popular view within the college sector at the time that teachers training colleges should also be national institutions within the tertiary education sector. This issue was eventually resolved in 1998 through the publication of the document called The Incorporation of Colleges of Education into the Higher Education Sector: A Framework for Implementation. Two options were offered to colleges of education, namely to be incorporated into an existing university or to become autonomous institutions with the proviso that an autonomous college of education would require a minimum enrolment of 2 000 students to be financially viable.

The task of identifying possible "autonomous" colleges was left to the provinces. Restructuring and rationalisation through closures, amalgamations, or mergers ensued at the provincial level according to provincial analysis and priorities. Simultaneously, officials of the Department of Education embarked on an extensive programme of consultations with their provincial counterparts in preparation for incorporation. This process has reduced the number of colleges of education at the beginning of 2000 from 120 (80 000 students) to 25 (10 000 students) by the end of 2000.

However, on 15 December 2000, the Minister of Higher Education issued a declaration (Government Notice No. 1383) which made colleges of education subdivisions of universities and former technikons. This eliminated the possibility of autonomous colleges and only provided for incorporations with universities and former technikons. The Minister inter alia declared that the Giyani College of Education would become a subdivision of the University of Venda with effect from 31 January 2001, whereafter it will function under the name of the University and from the physical location and the official address of

the University. Furthermore, the assets used by the College at that stage (and which belonged to the Limpopo Province) had to be transferred to the University subject to an agreement reached between the two parties. The University had the right to use such assets for such a period as agreed to by the Province. Also, the plant and property of the College had to be used by the University in continuing to provide training for educators, except where otherwise approved by the Minister.

Those students who registered at colleges of education and who needed to complete the courses for which they had been registered, had to enrol as university students in 2001 and onwards, and were to be regarded as 'pipeline' students for funding purposes. Regarding staff, an agreement had been reached in the Public Service Co-ordinating Bargaining Council that college of education staff members would remain employees of the province but would be seconded to the university until 31 December 2001 to serve the needs of the university the pipeline students. These secondments were renewable. Receiving universities were required to identify and create new posts to meet their new teacher education obligations, and to advertise these vacancies in closed lists for college personnel only, for final selection by 30 June 2001. Successful applicants would become university employees on an agreed date, and under different conditions of service.

As regards the property of colleges of education, the Ministry of Education initially approached these incorporations through the principle that 'funds and property follow function' should apply, and therefore, directed a written request to provincial education MECs to transfer college plant and property to the relevant universities. This in fact had been the governing principle in constituting the new public service for South Africa in 1994. However, the tension between national and provincial competences came to the surface, and questions were raised about the Minister's authority to enforce such a principle. In many cases, such as the Giyani case, the provinces argued that the properties used by the colleges of education were required for other important purposes.

The Minister of Education intervened through a letter written to the Limpopo MEC of Education on 10 October 2000 to put pressure on the LDE for it to agree on the transfer3. The LDE, under pressure, agreed on 16 October 2000 to the transfer of the College plant and property to the University. But no action followed the agreement and the transfer did not take place as explained by Soobrayan, V (2003) (SAJHE vol 17 no2 p103).

3.2 Position between 2001 and 2003

On 31 January 2001, the declaration of the Minister took effect, and the Giyani College of Education became a subdivision of the University of Venda. This led to the unveiling of a plaque at the entrance of the Campus, reading as follows: "This Campus was incorporated into the University of Venda for Science and Technology on 26 January 2001 and was officially opened by Dr Barney Pityana, Chairperson of Council on 23 March 2001."

In October 2001, the LDE reopened discussions on the transfer of the college plant and property to the University. The LDE asserted that the University had not fulfilled two obligations as required by the Minister's declaration. The first was that the University was expected to have advertised posts and appointed college staff by June 2001, which had not happened. The second was that there were no signs that the college property would continue to be used by the University for teacher education - only pipeline students were allowed to complete their studies in Giyani. At that stage, the LDE also had the backing of a provincial cabinet decision that the property and plant cannot and must not be transferred. This ended in a stalemate with the University insisting on the transfer of property and plant and the LDE wanting to retain these assets while sharing these assets with the University.

The Giyani Campus then seems to have been closed by the University by the end of 2003, with the 2000

cohort of students of the old Giyani College of Education completing their fourth year of studies. By the end of 2003, all staff on the Giyani Campus had either succeeded in obtaining employment elsewhere or had been absorbed by the LDE in the Curriculum Sub-directorate of the Mopani District housed in the Old Gazankulu Parliament buildings in Giyani.

3.3 Position after 2003

After the University had left, the Campus was used as a community college by the LDE, and in 2005 the site was formally declared to be an Education Multipurpose Centre for the LDE. The facilities of the Giyani Campus were also used for examination and other teaching activities by
many other Universities, including UNISA. The University seemed to have withdrawn totally from the Campus.

These include the North West University with block offerings to 180 students for teacher education, the University of Cape Town and Rhodes University using venues for their application processes, and the University of Pretoria lecturing to 90 students and Unisa lecturing 250 students. This is reported by Dr E van Staden in a DHET Report "Report on Giyani College visit" p4 (June 2012) and in an internal report of a meeting with the LDE on 17 June 2015, p1 (University of Pretoria). This communication from the LDE relates to a visit by Dr W Green from the DHET to the Giyani College in 2012.

In October 2009 the Portfolio Committee on Higher Education and Training paid an oversight visit to Giyani, and requested the LDE to consider re-opening the college to offer teacher education within the parameters set by the DHET.

In June 2010, the ANC Youth League in the Giyani sub-region called on the education authorities to reopen the Giyani College of Education because the re-opening of the college would help poor students who had dropped out of school. Many families around Giyani could not afford residence fees at tertiary institutions, and if the college were to be reopened, students could simply walk to the college. The League wanted the government to set up a branch of a university in Giyani. This proposal is supported by TUT's vision of a People's University that makes knowledge work. In fact, TUT believes in taking Education to the People by establishing distant campuses across the three provinces in SA.

In October 2010, the Khatsani Educational Initiative called upon the Minister of Higher Education to establish a higher education facility in the Mopani District Municipality as a matter of urgency. This call was also motivated by referring to the inequality in providing study places for universities in the Eastern Cape and Limpopo. The focus of these representations can be interpreted to relate to the re-opening of the Giyani Campus for educational purposes. The observation about the inequalities will be discussed later on.

The DHET made attempts in 2012 to reclaim the Giyani site for the formal training of teachers as a satellite campus of a university, but the MEC of Education at the time did not agree to release the Giyani site. The MEC of Education believed the DHET should build suitable facilities for the LDE to replace the facilities being used.

The possible re-opening of the former Giyani Teacher Training College has often been mooted by the Minister of Higher Education and Training during the last few years. For example, on 27 June 2014 the Minister responded as follows to a formal question asked in the House of Assembly: "Discussions are underway with relevant universities about the potential use of the former Cape College of Education site in the Eastern Cape, and the former Giyani College of Education site in Limpopo as further sites for teacher education, and for other education programmes within the Post-School Education and Training environment. While planning is on-going for possible expansion, it is too early to confirm whether or not these sites will be developed over the next three years as funding first needs to be secured from the

National Treasury."

Currently, the Giyani Education Multi-purpose Centre uses the Administration Building for the curriculum advisors and the education circuit staff of the District. The sports hall is used as a distribution centre for textbooks. The District is also using some of the classrooms for the professional development of teachers. The student residences are used by the Limpopo Nursing College students enrolled at the Giyani Campus of the Nursing College. Lease agreements also exist with the following organizations:

- Khanimamba Training Centre, which provides training opportunities for Early Childhood Development workers;
- Ndyelo Computer Training Centre which offers training in Basic Computer Skills; and
- Early Childhood Development Centre, which also provides advice to parents.

It is noted in passing that the University of Limpopo, which in the past offered teacher training programmes in the old Parliamentary Buildings in Giyani, eventually cancelled these programmes because of the cost involved in running such programmes.

4. Geographic Location of Giyani and The Mopani District

The content of this section has been taken from three sources:
(1) Limpopo Development Plan (LDP) 2015-2019; (2) Mopani District Municipality: Integrated Development Plan 2011-2016; (3) Greater Giyani Municipality: Integrated Development Plan 2014/15 Draft.

Giyani is a town in the Limpopo Province situated at the intersection of the R81 and R578 provincial roads. It is located in the middle of the Limpopo Bushveld on the northern side of the Little Letaba River to the west of the Kruger National Park. The town is situated in the northern portion of the former Gazankulu where it was established in the 1960s as the capital of the former Gazankulu, the administrative centre of the Tsonga people. Giyani is now the administrative capital of the Mopani District Municipality. Giyani lies 470 km north east of Johannesburg by road, 160 km to the east of Polokwane, 104 km from Tzaneen, and 105 km from the Phalaborwa Gate of the Kruger National Park.

The Mopani District municipality is one of the five municipal districts in Limpopo: Vhembe in the north, Waterberg in the west, Capricorn in the centre with Polokwane as the main city of the Province, Greater Sekhukhune in the south, and Mopani in the east which includes part of the Kruger National Park. The Mopani district spans a total area of 20 011 km², inclusive of a portion of the Kruger National Park from Olifants to Tshingwedzi Camps. In turn, the Mopani District consists of five municipalities, Greater Giyani, Greater Letaba, Greater Tzaneen, Maruleng, and Ba-Phalaborwa. By virtue of the Kruger National Park being part of the Mopani District, the latter is also part of the Great Limpopo Transfrontier Park, the Park that combines South Africa, Mozambique and Zimbabwe. More detailed information about these five municipalities is given below:

4.1 Greater Tzaneen

The municipal boundaries form an irregular, inverted T-Shape, resulting in certain developmental challenges to the municipality, such as the distance to markets and difficulties in service provision. The towns of Tzaneen, Nkowankowa, Lenyenye, Letsitele and Haenertsburg constitute the economic growth points in the Province, District and Greater Municipality. Almost 80% of households reside in rural villages. The municipal area is characterized by extensive and intensive farming activities (commercial timber, cash crops, tropical and citrus fruit production); mountainous, inaccessible terrain in the west and south, and un-even topography (gentle slopes) to the north and east; areas with great natural beauty and with

considerable untapped tourism potential.

4.2 Greater Letaba

The Greater Letaba Municipality is the smallest local municipality in the district in terms of land area and is situated in the west of the Mopani District. The Municipality is characterized by contrasts such as varied topography, population densities and vegetation. The population in the municipality is denser in the north-east than in the south, whereas vegetation is denser in the south (timber) than in the north (Bushveld). Resources are relatively scarce throughout the Municipality, but considerable natural resources such as dams, waterfalls, vegetations and nature reserves are found at its border with Greater Tzaneen. The Municipality can capitalize on these resources. The southern part of the municipal area comprises mountainous terrain, which precludes urban development. Approximately 5% of the land area is covered by residential development, whilst agricultural activities take up 30%. These include tomatoes (central), timber (south and south-east), game and cattle (central and north-west).

4.3 Greater Giyani

The municipal area embraces a portion of the Kruger National Park south of the Shingwedzi River. Giyani town is the local municipality's largest centre of population concentration, employment opportunities, shopping, and recreational facilities. The main economic activities of the Greater Giyani Municipality are small-scale agriculture (maize, potatoes, tomatoes, peanuts, mangoes, bananas and beef), processing of natural products (Mopani worm and Marula fruit), services, transport and retail development. The Municipality has potential for tourism and conservation development due to the existing natural heritage sites through the area. There are, however, a number of factors impacting negatively on the economic growth, such as the distance to markets, shortage of skills, poor infrastructure, climatic conditions and diseases. The influx of Mozambique and Zimbabwe refugees present a problem on its own. There is a total of 93 sparsely located rural villages with poor road access to and from Giyani.

4.4 Ba-Phalaborwa

The Municipality includes a portion of the Kruger National Park that embraces the Olifants, Letaba, Mopani and Shimuwini camps (north of the Lepelle River). Phalaborwa, a provincial growth point, and the nearby Namakgale/Lulekani towns and surrounding villages constitute the major population concentration areas in Ba-Phalaborwa. The area has a unique natural environment comprising conservation areas and eco-tourism development. These and the large mining development form key economic drivers. The Phalaborwa gate is the busiest gate among all Kruger National Park gates opening into Limpopo province, and providing access to the Giriondo border gate into Mozambique. Mining is the largest economic sector in Ba-Phalaborwa, creating many job opportunities and providing the highest GDP in the District. Eco-tourism has considerable economic potential, which still needs extensive development. There is a large amount of land in Ba-Phalaborwa that is currently under land claims. The municipality is also challenged with catering for Mozambique refugees.

4.5 Maruleng

The Maruleng Municipality area is characterised by typical Lowveld vegetation and is evenly sloped with isolated koppies and ridges. To the south, the municipal area is also bordered by the Drakensberg escarpment in Thaba-chweu. Population densities vary from sparse in the east to relatively dense in the south-west. Most of the population in the Municipality is concentrated around the predominantly white urban areas and farms, thus severed by distance from their place of work. These areas experience severe poverty and low human development potential due to high illiteracy rates, low income, and a general low life expectancy, accompanied by low levels of social and basic engineering services. Letsitele is one of the

most important areas where citrus fruit is produced, while Haenertsburg and surroundings have been identified as a very important tourism area.

4.6 Population, age, gender and language

The numbers quoted below for the demography of the Mopani population have been obtained from the Census 2011 database of StatsSA.

Municipality	Population	Age (0-14)	Age (15-64)	Age (65+)	Growth rate	Area km2	Population/ km2
Greater Tsaneen	390 095	31.80%	62.40%	5.70%	0.38%	3 243	120
Greater Giyani	244 217	36.80%	57.40%	5.80%	0.14%	4 172	59
Greater Letaba	212 701	34.50%	58.60%	6.90%	-0.29%	1 891	112
Ba-Phalaborwa	150 637	32.90%	63.20%	3.90%	1.36%	7 462	20
Maruleng	94 857	34.40%	60.30%	5.30%	0.05%	3 244	29
Total for Mopani	1 092 507	33.82%	60.47%	5.67%	0.30%	20 012	55

Table 1: Population statistics (2011) for the Mopani Municipal District.

Out of the entire district population, 81% reside in rural areas, 14% in urban areas and 5% stay on farms. The population densities vary from one municipality to another, but the average is 55 people/km2. This shows that the Mopani District is sparsely populated. The very low population growth of 0,3% per year can only be explained by the migration of males, particularly seeking better employment opportunities elsewhere.

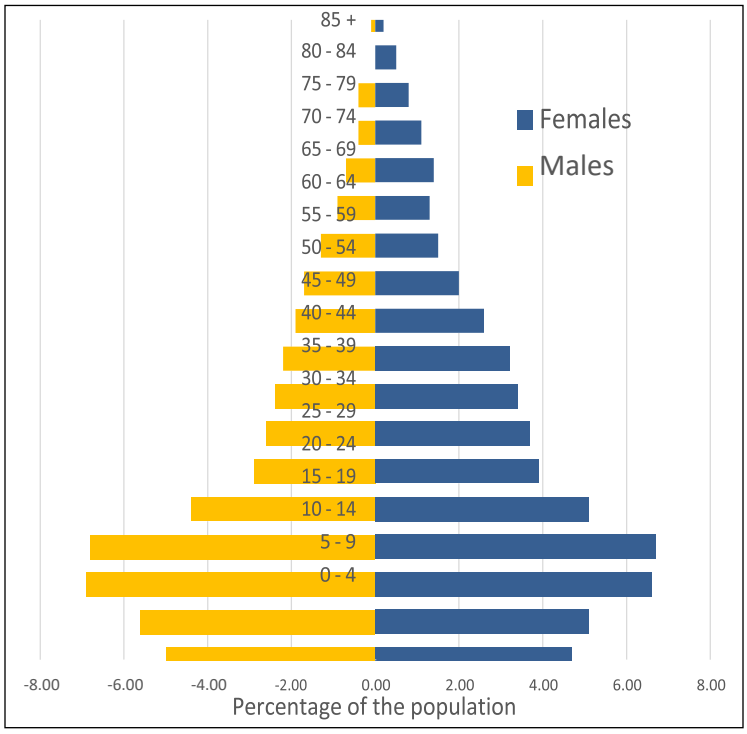


Figure 2: Age profile of the Mopani population for males and females according to the 2007 Community Survey of StatsSA

Figure 2 shows the age profile of the population within the Mopani Municipal District for males and females according to the 2007 Community Survey of StatsSA. The female population in total at 54% is markedly more than the male population at 46%. The age and gender structure is determined by levels

of fertility, mortality and migration. These factors are also influenced by socio-economic circumstances such as education, levels of income and location. The age categories 10 – 14 and 16 – 19 are the largest categories that demonstrate the pressure on secondary schools in the District. Females start to outnumber males only from the age category 20 – 24 and only 10% of the population is older than 55 years. In contrast to this, almost 50% of the population is below 20 years of age. Only a new census would be able to show whether these characteristics would still prevail.

As regards the languages spoken by the people of Mopani, the following table illustrates the commonalities and differences between the districts of Limpopo.

Language (first)	Vhembe	Mopani	Capricorn	Waterberg	Greater Sekhukhune	Total
Sepedi	2%	46%	86%	58%	83%	54%
Xitsonga	25%	44%	2%	8%	2%	17%
Tshivenda	68%	1%	1%	1%	0%	17%
Other	6%	9%	10%	33%	15%	13%
	100%	100%	100%	100%	100%	100%

Table 2: Languages spoken by the population of the Limpopo Province.

The difference between the primary language of the Vhembe District, where the majority speaks Tshivenda, and its direct neighbours, Mopani and Capricorn, where the majority speaks Sepedi and Xitsonga, is to be noted. In Giyani itself, almost 87% of the people speak Xitsonga.

In recent discussions, both the Khatsani Educational Initiative and the University of Venda have drawn attention to the political undercurrents in the region that have caused the collapse of the incorporation of the Giyani College of Education Campus with the University of Venda. This is also evident from the geographical distribution of languages spoken by people in the region.

4.7 Levels of education and household income

Regarding the levels of education in the Limpopo Province, the diagram below shows the percentage of the population 20 years and older who has no education at all, who has completed Grade 12, and those who have obtained a post-school qualification. The results of the 2011 Census have been used as the source of information.

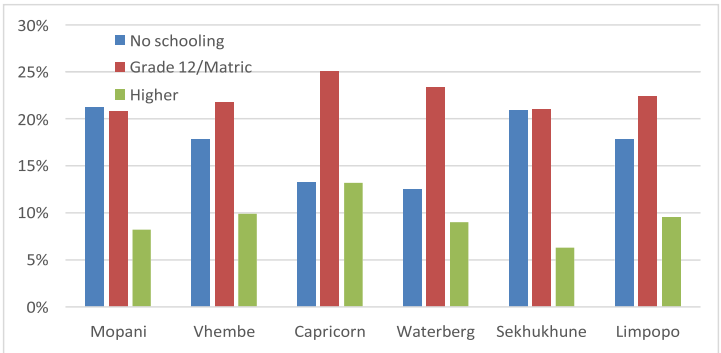


Figure 3: Percentage of the population in the municipal districts of Limpopo having no education at all, who has completed Grade 12, and those who have obtained a post-school qualification.

In the Limpopo Province, 18% of the population older than 20 has had no schooling, with 22% having completed Grade 12. Those that have obtained a post-school qualification is almost 10%. Looking at the municipal districts, Mopani and Sekhukhune have the largest percentage of people who have had no

schooling (21%) and the lowest share of people who had obtained a post-school qualification (8% and 6% respectively).

This illustrates the need for more adult learning centres to be replaced by the new public community colleges and the need for more learning places at post-school level. The meagre percentage of the Mopani population having a post-school qualification is in line with the observation made by the Khatsani Educational Initiative in October 2010 that the Limpopo Province has a severe backlog regarding higher education even more so than the Eastern Cape Province.

Household income distribution statistics for the Limpopo Province from the 2011 Census are reflected in Table 3 below. The four lowest income categories, which constitute 55% of all households, implies a median annual income of less than R19 600 per year or R1 633 per month. More than half of all households in Limpopo live in absolute poverty, and these households will find it impossible to pay for services such as water, electricity and school fees.

7 The content of this paragraph has been taken over from three sources:
(1) Limpopo Development Plan (LDP) 2015-2019; (2) Mopani District Municipality: Integrated Development Plan 2011-2016; (3) Greater Giyani Municipality: Integrated Development Plan 2014/15 Draft.

Household income for Limpopo in 2011	Number of households	Percentage of households
No income	195 321	14%
R 1 - R 4 800	91 777	6%
R 4 801 - R 9600	171 487	12%
R 9 601 - R 19 600	328 536	23%
R 19 601 - R 38 200	297 196	21%
R 38 201 - R 76 400	137 237	10%
R 76 401 - R 153 800	88 403	6%
R 153 801 - R 307 600	63 779	4%
R 307 601 - R 614 400	31 733	2%
R 614 001 or more	12 633	1%

Table 3: Income distributions for Limpopo households in 2011.

By comparison, the proportion of households in absolute poverty in the country is far less at 44%. However, considerable progress in improving the household income situation in Limpopo has been made during the past ten years, specifically in terms of the reduction in the proportion of households with no income, from 28% in 2001 to less than 14% in 2011. However, much is yet to be done to reduce the current incidence of poverty that comprises almost 55% of households in Limpopo.

4.8 Economic analysis

The information below has been sourced from the Integrated Development Plans for the Limpopo Province (2015-2019), for the Mopani Municipal District (2011-2016), and for the Greater Giyani Municipality (2014/2015). Current information on the demographic and economic situation at provincial level can directly be obtained from the Nesstar software (StatsSA). Information at district and municipal level, however, can only be obtained from the Statistician General upon request. The limited time allowed for this investigation made this impossible.

4.9 Main industries of the Limpopo economy

Limpopo is the second poorest Province in the country. Approximately 77% of the population live below the poverty income line, and the Province also has the lowest Human Development Index (0,485) in the country. This index reflects the life expectancy, education and per capita income of a population. The Capricorn and Mopani districts are seen as the main economic engines of the Province, with Polokwane, Phalaborwa and Greater Tzaneen identified as main economic centres. The economic heart of the province is formed by the circle of towns stretching from Mogalakwena, Polokwane, Makhado, Thohoyandou, Giyani, Phalaborwa, and
Tzaneen to Lebowakgomo. This area covers one quarter of the Province, accommodates the majority of the population, and accounts for approximately 80% of the Gross Domestic Product (GDP) of the Province. Although the number of unemployed people has declined, the percentage of people with no income in Mopani is still higher than that of the Limpopo Province.

The economic drivers within the Mopani District Municipality relate to its Vision namely to be the food basket of Southern Africa and the tourist destination of choice. Mining, however, is also an important part of the economic fabric of the District, and together with agriculture (agro-processing), forestry and tourism (also golf-tourism), this broadly correlates with the competitive advantages of the Province in

mining, agriculture, tourism and manufacturing.

The geographical location of Mopani is important from an economic perspective. Firstly, Mopani is a gateway through the Phalaborwa Kruger National Park and the Giriyondo Border posts to Mozambique and its tourist attractions. These routes pass through the Great Limpopo Transfrontier Park, which straddles the three countries, South Africa, Mozambique, and Zimbabwe. Apart from the advantages of tourism, the proximity of the Mopani district to the large Masingir Dam in the Mozambique sector of the Transfrontier Park can alleviate future water shortages in Mopani. The downside of this is that poor border control has led to a large influx of illegal immigrants and an increased risk of foot and mouth disease.

The provincial economic development study of 2000 identified tourism, agriculture, mining, trade and manufacturing as sectors with a potential for growth in the Mopani district. The aggregated GDP statistics conceal the fact that economic opportunities in the District are highly concentrated around Phalaborwa and, to a lesser extent Tzaneen. Outside of these centres, Mopani contains some of the least developed and poorest communities in South Africa.

Mining has been the most important economic sector in Mopani since 1996, and at present, this is contributing more than one-quarter of the GDP of the District. Secondary sectors supporting mining such as manufacturing, construction and transport have remained relatively under-developed. Mining is dominated by copper which is smelted in Phalaborwa, but substantial quantities of vermiculite and magnetite are also mined and exported as ore. Railway links to the harbours of Richardsbay and Maputo are constraining the mining sector at present. China's second-biggest steel producer Hebei Iron and Steel Company, has recently announced a partnership with the Industrial Development Corporation of South Africa to construct a 3 million ton per annum steel plant to utilise the large magnetite resource at Phalaborwa. Production is expected to start in 2017.

As regards agriculture, Mopani District produces tomatoes (ZZ2 as a large-scale producer) which are exported throughout the world. A major focus is also on (sub-tropical) fruits such as bananas, mangoes, oranges and pineapples, which are mainly produced for export. Also important is the production of red and white meat. Mopani has a well-established food manufacturing industry in canned, preserved and dried-fruit production and vegetable juices. Mopani is also endowed with natural resources such as marula fruits and the mopani worm, which produce many products in the processing value chain.

The District has many untapped tourism assets, such as the northern portion of the Kruger National Park. The Kruger National Park, several nature reserves and game farms cover almost half of the District, identified as one of the five best-conserved ecosystems in the world. The Mopani District boasts of indigenous forests, biospheres, wetlands, endangered species (Modjadji cycads), and cultural heritage sites. Other environmental conservation areas include the Wolksberg Wilderness, which is an important biodiversity hotspot, the Debengeni waterfalls, the Modjadji Nature reserve famous for its prehistoric Cycads, and a host of other nature reserves. Apart from all these natural areas, there are several privately owned game farms and nature reserves around the Ba-Phalaborwa and Maruleng Local Municipalities. Mopani also has several registered natural heritage sites which a District Heritage Council protects. The Middle Letaba and Nsami dams offer water sports and fishing opportunities, which provides ample opportunity for Eco- Tourism and SMME development.

Forestry also plays an important role in the economy of the Mopani District. Forestry depends on natural or ecological resources and should be managed so that it does not adversely impact the natural environment. There are also several forestry plantations in the Mopani District around Tzaneen and within the Greater Letaba Municipality consisting of non-indigenous trees such as Pines, Eucalyptus and Mahoganies. A large number of saw mills operate in the area. The foot hill zones of the mountainous ranges contain tea estates.

All of this is indirectly captured in the distribution of the GDP for 2013 (in constant 2010 prices) for the Limpopo Province across the various main industries8:

Main Industry in 2013	GDP (Rm)	Percentage contribution	Average growth	Percentage of the workforce employed	Leveraging index
Agriculture, forestry, fishing	5 334	2%	3.5%	11%	1
Mining and quarrying	55 056	26%	-0.3%	6%	19
Manufacturing	5 540	3%	1.9%	8%	1
Utilities	5 690	3%	1.0%	1%	12
Construction	7 336	3%	7.0%	10%	2
Wholesale, retail/motor trade, catering, accommodation	30 036	14%	3.3%	28%	2
Transport, storage and communication	8 817	4%	2.4%	5%	4
Finance, real estate and business services	29 172	14%	4.2%	5%	12
Other	67 180	31%	2.5%	26%	5
Total GDP	214 161	100%	2.3%	100%	

Table 4: The GDP of the Limpopo Province by main industry in 2013.

This table shows that agriculture at 2% has the lowest contribution to the GDP of the Province using 11% of the working-age population. The GDP produced relative to the number of persons employed relates to the leverage to increase the GDP in a particular industry. If the leverage of Agriculture is calculated and set equal to 1, then the leverages for all other industries are shown in the table above. Mining is seen to have the highest leverage at 19, followed by Utilities and Finance each at 12. Assuming that the supply-demand relationship is not changed by the introduction of a small number of workers into the Limpopo labour market, the biggest increase in the GDP can therefore be expected by employing additional workers in the Mining industry Mining in the Limpopo Province has become considerably more significant during the past 12 years, mainly due to new developments such as the platinum project pipeline in the Sekhukhune District. Other new mining developments include expanding the Venetia Diamond Mine in the Musina Local Municipality, the coal project pipeline in Lephalale, and the Musina-Makhado Corridor. There are also several potential mining projects in the Mogalakwena Local Municipality. The implication of this is that the mining sector could become even more dominant in the production structure of the Limpopo provincial economy in the foreseeable future.

4.10 Employment status of workers in the Limpopo Province

According to table 5, Limpopo has the lowest percentage of the total working-age population (age group 15 to 64) in employment, namely 35% in 2014. In the case of Limpopo the percentage of the working-age population not being economically active (either being a discouraged job seeker or otherwise not being economically active), is equal to 58%. The equivalent percentage for the country is 44%, whereas this is only 31% for Gauteng. The position for the other provinces is also shown in Table 9.

Employment status	Employed	Unemployed	Discouraged job seeker	Other not economically active	Total
Western Cape	51%	15%	1%	33%	100%
Eastern Cape	33%	13%	9%	45%	100%
Northern Cape	42%	17%	6%	35%	100%

Free State	41%	20%	4%	35%	100%
KwaZulu-Natal	38%	10%	9%	43%	100%
North West	40%	13%	9%	38%	100%
Gauteng	52%	17%	4%	27%	100%
Mpumalanga	42%	15%	10%	33%	100%
Limpopo	35%	7%	11%	47%	100%
South Africa	43%	14%	7%	37%	100%

Table 5: Employment status of workers in the Limpopo Province and other provinces

In Table 5, an employed person between 15 and 64 years old and had worked for at least one hour during the reference week or had a job or business but was not at work (temporarily absent). Unemployed persons are those between 15 and 64 years
of age who:
Were not employed in the reference week; and
Actively looked for work or tried to start a business in the four weeks preceding the survey interview; and
Were available for work, i.e. would have been able to start work or a business in the reference week; or
Had not actively looked for work in the past four weeks but had a job or business to start at a definite date in the future and were available.

All the employed and unemployed persons constitute the so-called workforce, and the remainder of the full working-age population is referred to as persons not economically active. Part of the latter group would consist of the discouraged job-seekers who are persons who were not employed during the reference period, wanted to work, were available to work/start a business but did not take active steps to find work during the last four weeks, provided that the main reason given for not seeking work was any of the following: no jobs available in the area; unable to find work requiring his/her skills; lost hope of finding any kind of work.

The unemployment definition given above is often referred to as the strict definition of unemployment; namely, a person is unemployed if he or she desires employment but cannot find a job. On the other hand, the expanded definition for unemployment includes everyone who desires employment, irrespective of whether or not they actively tried to obtain a job. The expanded unemployment figure is obtained by adding the discouraged job seeker to the strict unemployment numbers in the above table. Statistics South Africa uses both definitions, but currently, the strict definition is regarded as the official one. The expanded unemployment numbers for Limpopo in 2014 would therefore increase from 7% to 18%.

4.11 Persons not in employment and not in education

Table 5, which applies to the full working-age population with ages ranging between 15 and 64 years of age, would also include information about youths in the age group 15 to 24. Youths in education and training cannot be part of the labour force because they are not available for work. While being engaged with their studies, such youths would be reported in the category 'Other not economically active persons'.

8 Statistics Release P0441: Gross domestic product (Quarter 3, 2014) Statistics South Africa)

9 Statistics Release P0211: Quarterly Labour Force Survey (Quarter 4, 2014) Statistics South Africa.

10 Fact sheet on NEETS (2013) Department of Higher Education and Training.

However, youths not in employment and not in education and training constitute a special group of persons referred to as NEETS (persons not in employment, education or training). Depending on the specific circumstances, such persons should be reported in one of the three appropriate categories except for the employed category. Such unfortunate persons could be part of this group for many reasons, particularly because the number of jobs created in the economy is too small and limited opportunities in education and training.

The growth in the number of NEETS in South Africa over the past few years is cause for concern and suitable interventions should be implemented sooner rather than later. According to Statistics South Africa, the number of youth aged 15 to 24 who are not in employment, education or training was already 3,4 million in 201310. The NEET rate is obtained by dividing the number of NEETS by the 15-24-year-old population.

	Number of NEETS 2011	Number of NEETS 2014	15-24 year old population 2014	NEET rate 2014
Western Cape	319 000	337 697	1 051 778	32.1%
Eastern Cape	426 000	392 318	1 391 193	28.2%
Northern Cape	75 000	77 695	211 598	36.7%
Free State	181 000	150 571	531 133	28.3%
KwaZulu-Natal	693 000	635 607	2 102 093	30.2%
North West	240 000	234 055	691 091	33.9%
Gauteng	683 000	619 467	2 171 393	28.5%
Mpumalanga	267 000	274 505	865 755	31.7%
Limpopo	315 000	321 330	1 256 459	25.6%
Total	3 199 000	3 043 245	10 272 493	29.6%

Table 6: NEET rate for the Limpopo Provence and other provinces.

5. School Education

5.1 Primary schools

Figure 4 shows the geographical distribution of the primary schools in the vicinity of the Giyani Campus as in 201312. Schools as far south as Tzaneen and as far north as Thohoyandou are shown. The cut-off on the east is the Kruger National Park. Concentrations of primary schools are found to the north-east of Tzaneen and to the south-west of Thohoyandou. The circle on the map identifies schools within a distance of 30km from the former Giyani College of Education campus. It is seen that this catchment area runs into the Vhembe Municipal District. The primary schools around the Giyani Campus are uniformly distributed and the size of the approximately 100 schools in this catchment area range between 100 and 1000. The number of primary school pupils in the 30km radius catchment area is estimated to be around 48 000 pupils.

12 Limpopo Province Q4 2013 Open ordinary schools

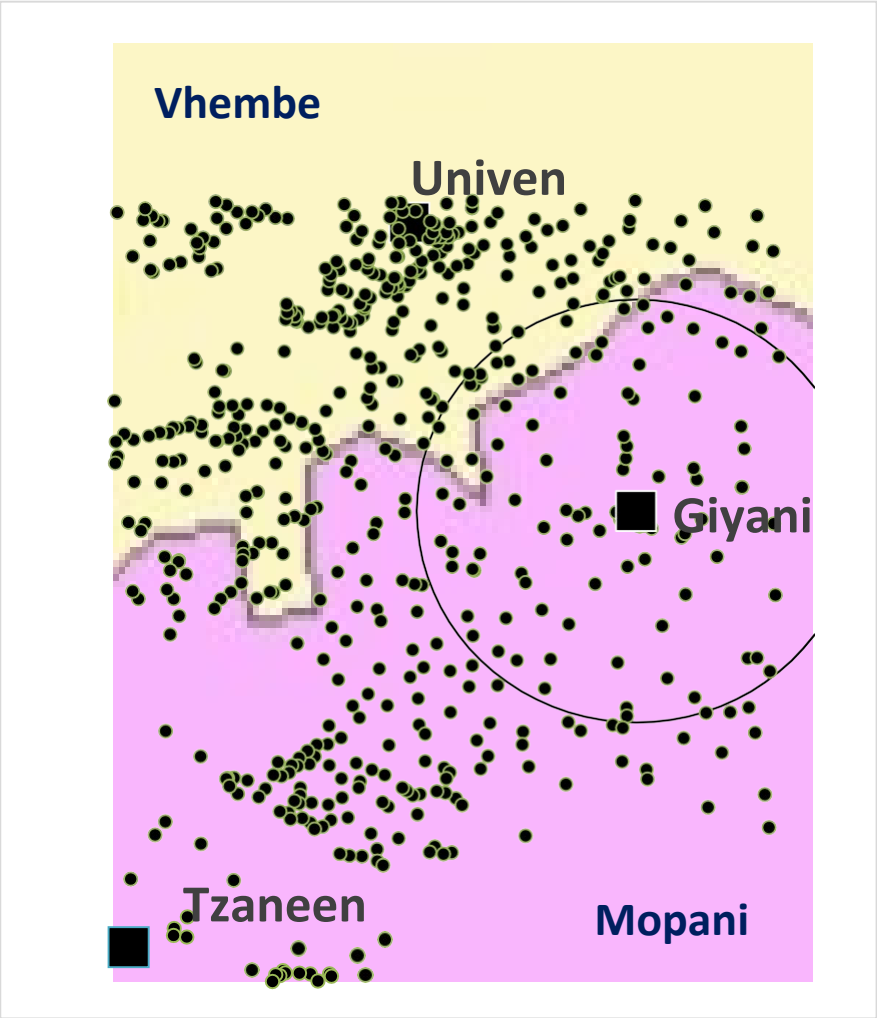


Figure 4: Geographical distribution of primary schools in the vicinity of the Giyani Campus.

5.2 Secondary schools

The map below shows the geographical distribution of the secondary schools in the vicinity of the Giyani Campus as in 2013. Secondary schools as far south as Tzaneen and as far north as Thohoyandou are shown. The cut-off on the east is again the Kruger National Park. Concentrations of secondary schools are again found to the north-east of Tzaneen and to the south-west of Thohoyandou. The circle on the map again identifies secondary schools within 30km from the Giyani Campus. The secondary schools around the Giyani Campus are also uniformly distributed and the size of the approximately 60 schools in this catchment area range between 120 and 1500. The number of secondary school pupils in the 30km radius catchment area is estimated to be around 33 000 pupils. There are six secondary schools larger than 1 250 pupils (large red circles) within the 30km radius catchment area with half of the secondary schools having less than 250 pupils (small black circles).

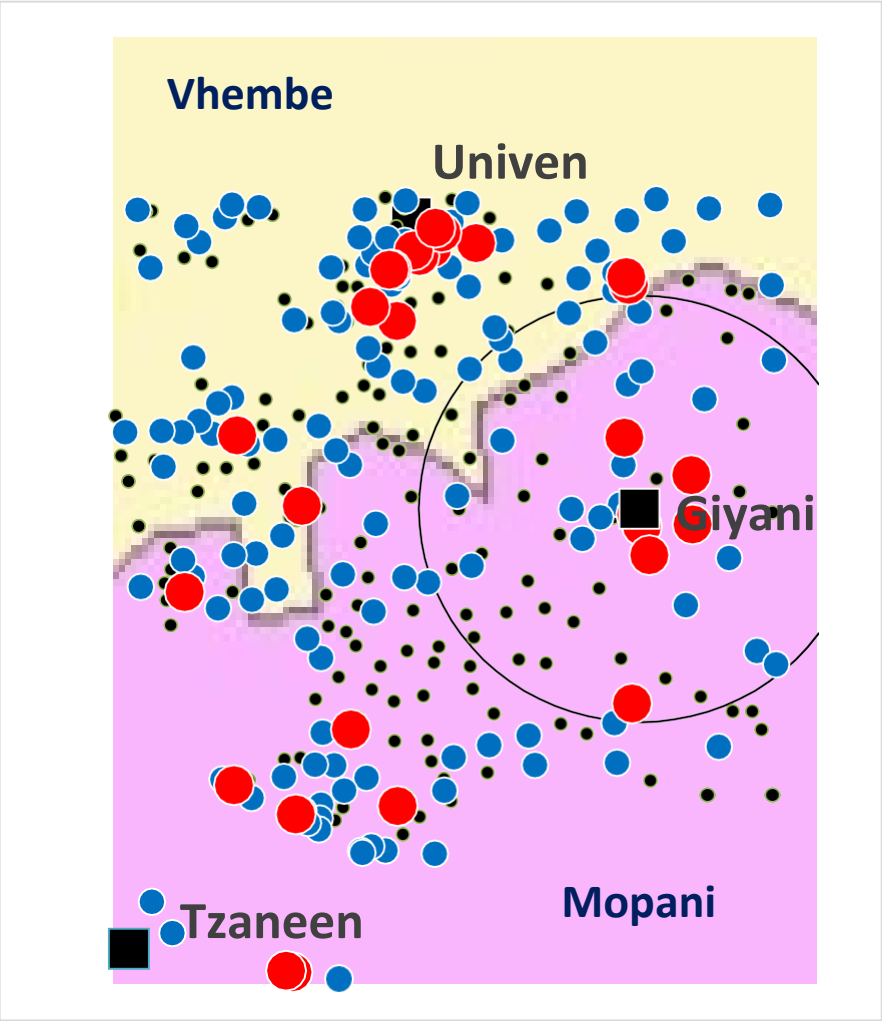


Figure 5: Geographical distribution of secondary schools in the vicinity of the Giyani Campus.

5.2.1 Matric pass rates and best performance subjects

The numbers quoted indicate that the secondary schools in the immediate vicinity of the Giyani Campus would have more than enough pupils completing Grade 12 to populate, say a possible annual intake of first-time entering students of 400 on the Campus. However, the table below reveals that the matric pass rates for Limpopo have still been among the lowest in South Africa during 201313. On the positive side, the pass rate for Limpopo has between 2008 and 2013 increased by an impressive 18% per annum on average. The top-performing district in Limpopo was Vhembe with a 77% matric pass rate, followed by Capricorn with 66% and Mopani with 63.2%. Sekhukhune came fourth with 63%, and Waterberg only had a 60% pass rate.

13 Education Statistics in South Africa 2013, Department of Basic Education, March 2015

	2008	2009	2010	2011	2012	2013	Change
Western Cape	78%	76%	76%	83%	83%	87%	9%
Eastern Cape	51%	51%	58%	58%	62%	65%	15%
Northern Cape	73%	61%	72%	69%	75%	75%	2%
Free State	72%	69%	71%	76%	81%	87%	15%
KwaZulu-Natal	58%	61%	71%	68%	73%	77%	19%
North West	68%	68%	76%	78%	79%	87%	19%
Gauteng	76%	72%	79%	81%	84%	87%	11%
Mpumalanga	52%	49%	57%	65%	70%	78%	26%
Limpopo	54%	49%	58%	64%	66%	72%	18%

Table 7: Grade 12 pass rates in 2013 for the Limpopo Province and other provinces.

Table 8 below shows the percentage of all Matriculants who wrote and passed 10 key subjects in Matric in 201214. The percentages are calculated by dividing the number of learners who passed each subject by the total number of learners who wrote Matric in that province. For example, in the Northern Cape, there was a total of 8 925 learners that wrote Matric in 2012. Of these, 2 864 elected to write Mathematics (32%), but only 1 572 achieved a pass. Hence the proportion of all Matriculants in the Northern Cape that achieved a Mathematics pass was 18%. Similarly, in Gauteng, there were 89 627 learners who wrote Matric, of which 40 278 wrote Business Studies and 34 246 passed, meaning the proportion of all Matriculants that achieved a Business Studies pass in this province was 38%.

TVET	Accounting	Agricultural Sciences	Business Studies	Comp Technology	Economics	Geography	History	Life Sciences	Mathematics	Physical Sciences
Western Cape	16%	1%	30%	19%	13%	29%	25%	41%	25%	18%
Eastern Cape	17%	18%	26%	6%	18%	27%	17%	39%	22%	20%
Northern Cape	17%	6%	28%	13%	13%	34%	25%	38%	18%	15%
Free State	20%	5%	29%	15%	19%	27%	11%	40%	25%	24%
KwaZulu-Natal	21%	11%	35%	4%	22%	31%	16%	36%	24%	21%
North West	13%	13%	27%	9%	17%	40%	15%	39%	23%	21%
Gauteng	18%	1%	38%	13%	21%	32%	19%	37%	27%	23%
Mpumalanga	13%	18%	26%	6%	17%	30%	8%	34%	21%	22%
Limpopo	14%	22%	17%	2%	20%	37%	11%	40%	24%	24%
South Africa	17%	11%	30%	8%	19%	32%	16%	38%	24%	22%

Table 8: Proportion of all matriculants who wrote and passed key matric subjects in 2012.

According to Table 8 Limpopo had the strongest performance of all the provinces in Agricultural Sciences and the second strongest performance in Geography. In Physical Sciences it shared the top performance position with the Free State Province. Similarly, the performance of Limpopo matriculants in life sciences and physical sciences is among the best in the country. Limpopo, however, had the weakest performance in Computer Technology which could be explained by a lack of facilities for teaching in the form of computer laboratories. The Limpopo performance in Accounting and Business Studies is markedly also weaker than the rest of the provinces.

5.2.2 Learner to educator and learner per school ratios

Table 9 below shows that the learner to educator ratio for Limpopo had weakened between 2010 and 2013 which is the same trend observed for Gauteng as well as for South Africa. More educators are therefore required to improve the performance of the school system. Furthermore, the number of learners per school has also increased for Limpopo between 2010 and 2013, the same trend observed for Gauteng and South Africa. More funding is required to build more schools and to deal with the state of disrepair of some of the schools.

	Learners per Educator		Learners per school	
	2010	2013	2010	2013
Eastern Cape	29.7	29.4	357	338
Free State	27.5	27.2	440	476
Gauteng	28.1	28.5	794	804
KwaZulu-Natal	30.5	29.8	457	466
Limpopo	29.3	30.0	416	422
Mpumalanga	30.0	30.1	535	559
Northern Cape	30.5	31.5	437	493
North West	29.2	30.1	446	491
Western Cape	28.3	28.9	616	636
South Africa	29.3	29.4	474	486

Table 9: Learner to educator ratios and Learner to school ratios for the Limpopo Province and other provinces in 2010 and 2013.

5.2.3 Technical and vocational education and training colleges (TVET)

In his Budget Vote speech for 2015, the Minister of Higher Education and Training has indicated that TVET College enrolments have doubled over the past five years and are expected to reach the 725 000 mark during 2015. Construction work at three of the twelve planned new TVET colleges is underway, and the Thabazimbi campus will be ready for training students as from the beginning of 2016. At present, there are seven TVET Colleges in the Limpopo Province, each with multiple satellite campuses. This is summarized in the table below also indicating the main areas of specialization.

TVET Name	Number of campuses	Area of specialization
Capricorn	4	Business Studies, Engineering Studies and General and Utility Studies
Lephalale	2	Business Studies, Engineering Studies, Nature Management
Letaba	3	Business Studies, Engineering Studies, Building Construction, Finance, Economics, Accounting
Mopani SE	2	Business Studies, Engineering Studies
Sekhukhune	2	Business Studies, Engineering Studies
Vhembe	3	Business Studies, Engineering Studies, Utility Studies
Waterberg	3	Business Studies

Table 10: Number of campuses and areas of specialization for each of the Limpopo Province TVET Colleges.

The next map shows the geographical distribution of the multiple campuses of the seven TVETs in the Limpopo Province.

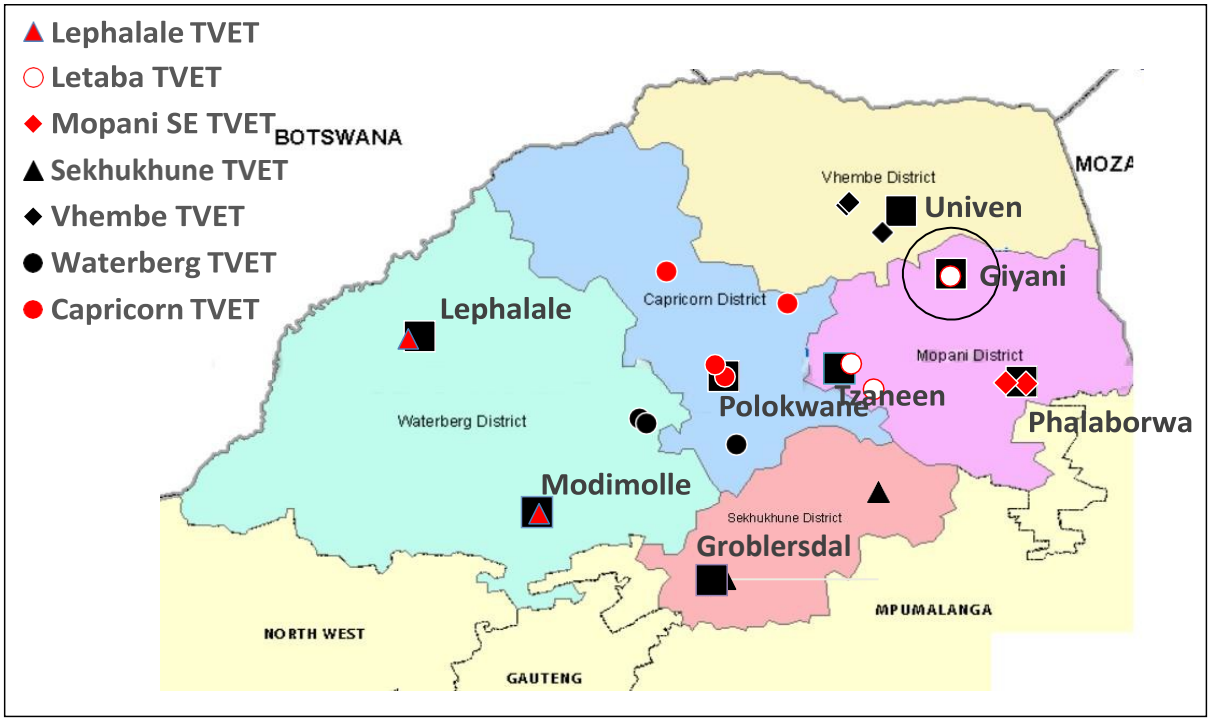


Figure 6: Distribution of Limpopo Province TVET campuses across the Province.

The Letaba TVET College has a satellite campus in Giyani with 444 students currently pursuing courses in Engineering and Management.

The Limpopo Province to the west of Polokwane has 8 TVET satellite campuses whereas 11 satellite campuses can be found on the eastern side of Polokwane. Eight of the TVET campuses can be found within a radius of 90km from the Giyani Campus.

The question arises whether the Limpopo Province has its fair share of public TVET study places existing in South Africa today. The answer is given in the table below. The latest estimates by StatsSA of the populations in the 20 to 24 years age group for each of the provinces are compared to the number of TVET student places provided at public TVET colleges in each of the provinces15.

14 Education Districts in South Africa: A Review, Department of Basic Education, March 2013

2012	TVET learning places	Estimated number of people in 20 to 24 age group	TVET places as % of number of people in 20 to 24 age group
Western Cape	105 225	535 012	20%
Eastern Cape	58 905	634 222	9%
Northern Cape	17 559	101 215	17%
Free State	51 815	275 800	19%
KwaZulu-Natal	125 347	998 837	13%
North West	50 615	344 528	15%
Gauteng	147 907	1 216 729	12%
Mpumalanga	38 906	426 017	9%
Limpopo	61 411	587 784	10%
Total	657 690	5 120 143	13%

Table 11: Number of public TVET study places per province as compared to the number of 20-24 year olds in the provincial population for 2012.

This table confirms that apart from the Eastern Cape and Mpumalanga, Limpopo had the smallest share of the total TVET study places in 2012, which is 23% below the national average and only half of the study places available in the Western Cape.

The DHET has recently announced that UNISA has signed an agreement with twelve TVET colleges to allow these colleges to offer specific UNISA qualifications on their campuses under the authority of UNISA. This has been done in terms of the Further Education and Training Colleges Act (Act 16 of 2006), now known as the Continuing Education and Training (CET) Act. The Minister of Higher Education and Training has to approve such arrangements. The following qualifications will be on offer through this arrangement:

Bachelor of Education (BEd) (Early Childhood Development: Foundation Phase)
Higher Certificate in Tourism Management
Higher Certificate in Banking
Higher Certificate in Economic and Management Sciences
Higher Certificate in Accounting Sciences

The Letaba TVET has received permission to offer the Higher Certificate in Banking in terms of this arrangement.

These partnerships implies that additional learning opportunities will now be provided on TVET college campuses to students who would otherwise not have been able to gain access to higher education courses. Such students would presumably count as higher education students and not as TVET college students.

5.2.4 College of Nursing Training

One of the South African Nursing Council functions is a statutory responsibility to accredit nursing education institutions and the training programmes offered by these institutions. Section 42 of the Nursing Act, 2005 makes it illegal for any institution to train a nurse or midwife unless the South African Nursing Council has accredited the institution and the training programme. This protects the rights of the public to receive quality nursing care and the rights of learners to receive training that meets all the requirements for registration as a practitioner.

The South African Nursing Council, however, has recently approved the following new nursing qualifications for inclusion in the National Qualifications Framework:

Bachelor's Degree in Nursing and Midwifery (4 years degree)
Diploma in Nursing: Staff Nurse (3 years diploma)
Higher Certificate: Auxiliary Nursing (1 year certificate)
Advanced Diploma in Midwifery (1 year diploma)

This development is in line with the strategy document developed by the Council in 2012 containing a strong and urgent recommendation that nursing colleges be declared as higher education institutions in compliance with the provisions of the Higher Education Act. Failure to do so will mean that public nursing colleges will be unable to continue training in terms of the new proposed training programmes on the NQF. Only universities are allowed to offer the programmes listed on the NQF. This may suggest that nursing colleges would soon have to enter into a suitable but formal relationship with an existing university in order to offer university programmes. Current legislation does not allow nursing colleges to offer NQF programmes without a formal relationship with an existing university.

The qualification which generally had been offered by nursing colleges under the jurisdiction of the provinces, is the Diploma in Nursing and Midwifery. The Council has now given notice that certain legacy training programmes will be terminated in June 2015, while others will be terminated later.

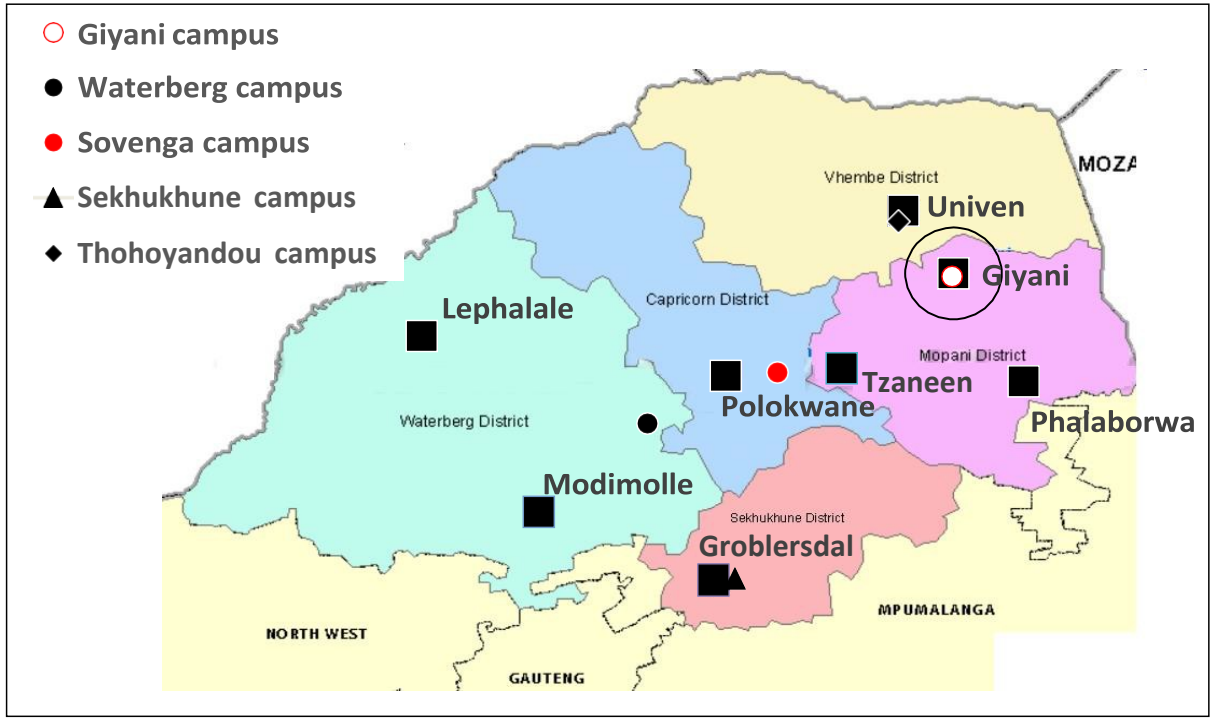


Figure 7: Distribution of the campuses of the Limpopo College of Nursing across the Province.

This Figure shows the geographical distribution of campuses of the Limpopo Nursing College in the Limpopo Province. Four of the five campuses are located to the east of Polokwane. It is also pointed out that both the University of Venda and the University of Limpopo offer nursing education programmes as well.

It is noted that the Limpopo College of Nursing already has a campus in Giyani, which in all probability will start offering degree programmes when a solution to the NQF problem has been found. This implies that within a radius of 60km from the Campus of the former Giyani College of Education, there would be three sites of delivery for nursing education.

5.2.5 Colleges of agricultural training

Limpopo has two provincial colleges of agriculture, namely the Madzivhandila College, which is situated at Thohoyandou in the Vhembe District, and the Tompi Seleka College, which is situated near Marble Hall in the Sekhukhune District. These two colleges suspended their normal training programmes in agriculture in 2005 because of extensive upgrading of their facilities and training programmes. Only skills development programmes for farmers have been offered since

then. Both colleges, however, started to offer their new training programmes at the beginning of 2015. The Madzivhandila College has admitted 60 students, and the Tompi Seleka College has admitted 80 students. The Madzivhandila College of Agriculture inter alia offers the Diploma in Agriculture (Animal Production), which had been registered on the HEQSF sub-framework. It is also noted that both the University of Venda and the University of Limpopo are offering formal training programmes in agriculture, including programmes at the postgraduate level.

15 Statistics of Post-School Education and Training in South Africa: 2012, Department of Higher Education and Training (2014).

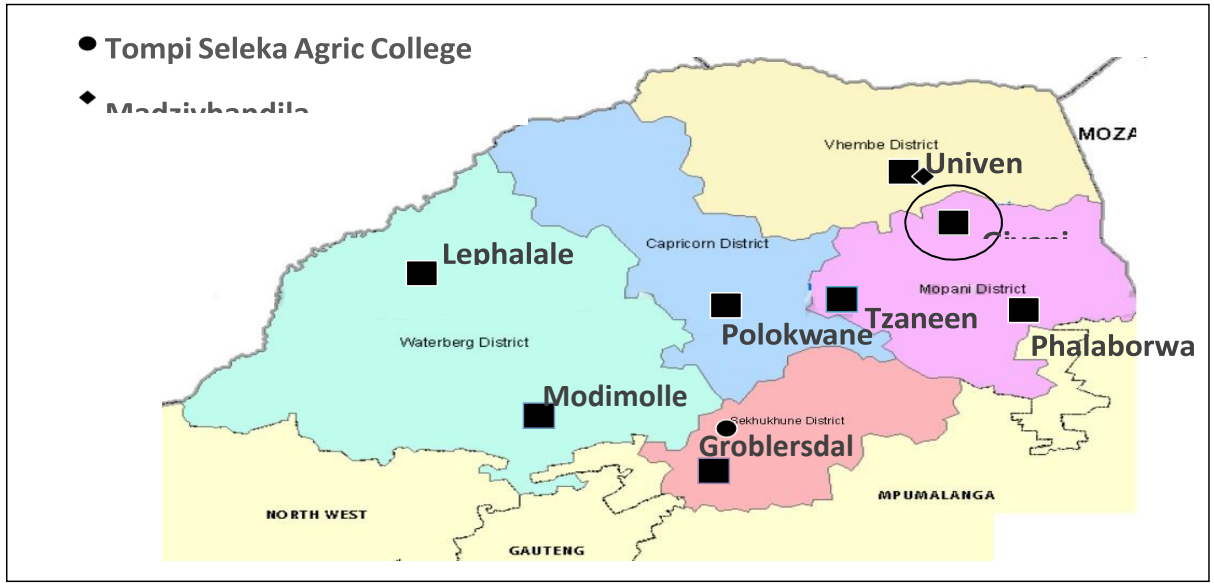


Figure 8: Distribution of provincial Colleges of Agriculture across the Limpopo province.

The above map shows the position of the two colleges of agriculture relative to the Campus of the former Giyani College of Education. Within a radius of 60km from the Giyani Campus, there are two delivery sites of agricultural programmes.

The intentions of the Government to shift the responsibility for the agricultural colleges from the Department of Agriculture to the DHET may also see the agricultural colleges incorporated as satellite campuses of universities because universities already offer extensive programmes in agriculture. The incorporation of the Lowveld Agricultural College with the University of Mpumalanga may be regarded as an example of this. On the other hand, agricultural colleges can also offer degree programmes through partnership agreements with universities.

The importance of empowering a new generation of farmers to use the land to feed the nation, especially on land obtained through restitution, cannot be overemphasized. Agriculture is becoming just as important as education in South Africa.

6. TUT Proposition

6.1 University education

6.1.1 Universities of Limpopo and Venda

The Limpopo Province has two universities, namely the University of Limpopo (approximately 16 000 students), which is situated in Sovenga near Polokwane, and the University of Venda (approximately 12 000 students), which is located in Thohoyandou. The distance between the Turfloop Campus of the University of Limpopo and Giyani is 148km and between Giyani and University of Venda Campus in Thohoyandou is 62km, as is shown in the map below.

The University of Venda has recently acquired additional facilities for education and the training of teachers. It should be able to meet part of the additional demand for the training of teachers. The University is still not doing well with introducing career-focussed programmes as part of its brief to be a comprehensive university. Such programmes may perhaps also be introduced at the Giyani Campus. The University would like to see Agriculture as a centre of excellence and other programmes in Engineering, ICT, Education at the level of Hons to be offered in the Giyani campus. including local government programme

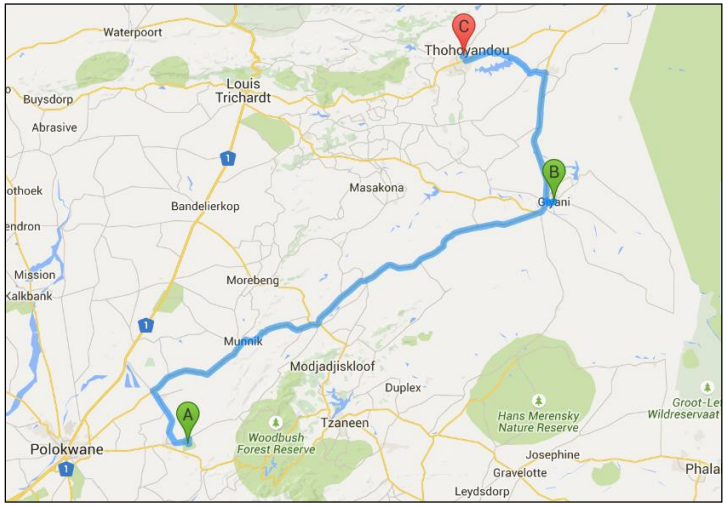


Figure 9: Position of the University of Limpopo and the University of Venda relative to the Campus of the former Giyani College of Education.

A summary of the academic disciplines on offer at the two Universities is given below. The University of Venda is a comprehensive university, whereas the University of Limpopo is a traditional university.

	University of Limpopo	University of Venda
Health Sciences	Oral Health Sciences Pathology and Pre-Clinical Sciences Health Sciences Medicine	Nursing Science Public Health Nutrition Psychology Sports Sciences
Humanities and Social Sciences	Education Languages and Communication Studies Social Sciences	Education Languages and Communication Studies Social Sciences
Science	Mathematical and Computer Sciences Molecular and Life Sciences Physical and Mineral Sciences	Mathematical and Computer Sciences Molecular and Life Sciences Physical Sciences
Management and Law	Economics and Management Law Graduate Leadership Accountancy	Economics and Management Law Accountancy Tourism and Hospitality Management Public and Development Administration
Agriculture	Agricultural and Environmental Sciences	Agricultural and Environmental Sciences Consumer and Food Sciences

Table 12: A summary of the academic disciplines on offer at the traditional University of Limpopo and the comprehensive University of Venda.

Whether the total number of university study places provided in the Limpopo Province is comparable to the number of study places provided for the other provinces also needs to be confirmed. The Khatsani Educational Initiative in October 2010 has drawn attention to the fact that the Limpopo Province has a serious backlog regarding higher education facilities, even more so than the Eastern Cape Province. Whilst working on this proposal, the same group of Khatsani

was consulted for their input, and they in writing confirm that the proposal is in line with the needs of the area. The table below shows the number of contact student places provided at universities in each of the provinces. It compares these numbers to the latest estimates by StatsSA of the populations in the 20 to 24 years age group for each of the provinces.

2014	University contact study places	Estimated number of people in 20-24 age group	University places as % of number of people in 20 to 24 age group
Western Cape	108 772	535 012	20%
Eastern Cape	72 277	634 222	11%
Northern Cape	5000	101 215	5%
Free State	41 202	275 800	15%
KwaZulu-Natal	93 849	998 837	9%
North West	36 978	344 528	11%
Gauteng	206 785	1 216 729	17%
Mpumalanga	5000	426 017	1%
Limpopo	28 559	587 784	5%
Total	598 422	5 120 143	12%

Table 13: Number of university contact study places per province as compared to the number of 20 to 24 year olds in the province.

Table 13 shows that the percentage of contact learning places at all universities relative to the 20 to 24-year-olds in the country, the gross participation rate, is almost 12% in 2014. If UNISA is added to this calculation, then this percentage is increased to almost 19%. This is very close to the 20% figure set as a goal for all universities in the National Plan for Higher Education to be achieved by 2016 at the latest. According to a World Bank report published in 2000, the average higher education gross participation rate is just over 40% for high-income countries, just over 20% for middle-income countries and 5% for low-income countries. According to the table, the university gross participation rate of the Limpopo Province is a very low 5%, with the gross participation rate for the Eastern Cape more than twice as much, and the rate for the Western Cape four times as much. This very low percentage for the gross participation rate of the Limpopo Province is also evident from the very low percentage of the Mopani population having a post-school qualification, as was also pointed out earlier on. It is therefore imperative that TUT introduces UoT related programmes in the Mopani district. The new campus must work with local industries such as ZZ2 and other commercial farmers to place students.

6.1.2 University of South Africa (UNISA)

Earlier on, it was reported that UNISA had signed an agreement with twelve TVET colleges to allow these colleges to offer specific UNISA qualifications on their campuses under the authority of UNISA. The Letaba TVET has received permission to offer the Higher Certificate in Banking in terms of this arrangement. It is expected that many more qualifications will become available in this way and that more opportunities will therefore be created in the Limpopo Province for degree studies with TVET Campuses such as the Letaba Campus in Giyani providing tutoring for these degrees. The details about these arrangements are not

known yet, in particular what the tutoring fees would be for such degrees (less than the cost of a UNISA degree or more) and the standards of tutoring prevailing on the TVET campuses. The proposed model should perhaps still be given the time to prove itself. However, TUT working with the TVET Colleges in the province may be a solution to the lack of technical programmes.

UNISA also has three regional facilities in the Limpopo Province. The Polokwane Hub serves as a regional hub with an extensive range of services offered to UNISA students. Two smaller agencies have also been established in Makhado as well as Giyani. The Giyani Agency is relatively close to the Campus of the former Giyani College of Education. The services offered at the hub and agencies relate to various administrative and support activities but do not involve any teaching activities.

6.2 Strategic objectives of the Limpopo Province

The strategic objectives identified by the Limpopo Province for the period 2015 to 2019 in the Limpopo Development Plan as released earlier this year, first of all, refer to the importance of the Strategic Infrastructure Projects of the President listed below, in particular the importance of Projects 1, 6 and 7 for the Limpopo Province.

Strategic Infrastructure Projects (SIPs)	Project Description
1	Unlocking the Northern Mineral Belt with Waterberg as the Catalyst
2	Durban-Free State-Gauteng Logistics and Industrial Corridor
3	South-Eastern Node and Corridor Development (KZN)
4	Unlocking Economic Opportunities in North West
5	Saldana-Northern Cape Development Corridor
6	Integrated Municipal Infrastructure Project
7	Integrated Urban Space and Public Transport Programme
8	Green Economy in Support of the SA Economy
9	Electricity Generation in Support of Socio-Economic Development
10	Electricity Transmission and Distribution for all
11	Agri-logistics and Rural Infrastructure
12	Revitalization of Public Hospitals and other Health Facilities
13	National School Building Programme

14	Higher Education Infrastructure
15	Expanding Access to Communication Technology
16	SKA and Meerkat Astronomy Projects
17	Regional Integration for Africa Co-operation and Development
18	Water and Sanitation Infrastructure

Table 14: List of Strategic Infrastructure Projects

Apart from the Strategic Infrastructure projects, the Limpopo Development Plan also provides for 14 different strategic outcomes to be achieved by 2019. All 14 of them will be listed below, but only those that are believed to have a direct bearing on a recommendation regarding the future use of the Campus of the former Giyani College of Education will be discussed further. The expected outcomes are the following:

- Outcome 1: Quality Basic Education
  By 2030, Limpopo must have a basic education system characterized by quality school education with globally competitive literacy and numeracy standards. This inter alia relates to the training of more quality teachers.
- Outcome 2: Long and Healthy Life
- Outcome 3: All People are Safe
- Outcome 4: Decent Employment through Inclusive Growth
  This deals with the challenges of unemployment and a higher GDP through inter alia the following initiatives:

✓ Expanding the mining activities in the Phalaborwa region and developing the required infrastructure;
✓ Expanding the horticulture, meat production and forestry activities and developing the required infrastructure, in particular, electricity supply, access roads and ICT infrastructure;
✓ Expanding the tourism industry and developing more recreational facilities throughout the Province. Further investments will be required as regards access roads and ICT; and
✓ Focussing on opportunities for manufacturing development within each of the above initiatives.

- Outcome 5: Skilled and Capable Workforce
  By 2030, Limpopo should have access to education and training of the highest quality, leading to significantly improved learning outcomes. The graduates of Limpopo's universities and colleges should have the skills and knowledge to meet the present and future needs of the economy and society. South Africa and Limpopo need engineering skills to deliver the massive infrastructure programme announced in the 2012 State of the Nation address. The country also needs sufficient doctors, nurses and health professionals in different occupational classes to deliver quality healthcare.

- Outcome 6: Competitive Economic Infrastructure
  South Africa needs to invest in a strong network of economic infrastructure designed to support the country's medium- and long-term economic and

social objectives. The emphasis on absorbing the unemployed into economic activity and higher mining exports to forge a new path in the economy of the future implies urgent investments in infrastructure. Limpopo also stands to benefit from the Strategic Infrastructure Projects 1, 6 and 7 as described above.

- Outcome 7: Comprehensive Rural Development
  By 2030 agriculture in Limpopo is planned to create close to 100,000 new jobs, contributing significantly to reducing overall unemployment.
- Outcome 8: Human Settlement Development
- Outcome 9: Developmental Local Government
- Outcome 10: Environmental Protection
- Outcome 11: Regional Integration
- Outcome 12: Developmental Public Service
- Outcome 13: Inclusive Social Protection System
- Outcome 14: Social Cohesion

In summary, the Limpopo Development Plan places emphasis on producing more and better-qualified workers in the following sectors of the economy:

- Education
- Health care
- Engineering
- Tourism
- Mining
- Agriculture

The new Limpopo Development Plan will now lead to the adjustment of the various District Development Plans and the adjustment of the Municipal Development Plans. Having read all the expected outcomes of the province, it is evident that introducing these types of programmes will assist the province in realising its objectives in line with its IDP.

6.3 University enrolment planning priorities for 2014 to 2019

The Ministerial Statement on University Enrolment Planning for 2014 to 2019 refers to general priority skills areas such as nursing, initial teacher education, animal sciences, and engineering. According to the Ministerial Statement, the annual growth percentages for the general priority skills areas (which are also priority areas referred to in the Limpopo Development Plan), are the following:

University general priority skills areas	Annual growth %
Nursing	7,4%
Teacher education	6,5%
Animal sciences	4,8%
Engineering	2,6%

Table 15: Percentage annual growth planned for the university general priority skills areas.

The annual growth percentage for nursing and teacher education is the highest in the list, followed by animal sciences and engineering.

In addition to this, it is necessary to identify the managerial and professional occupations needed to direct, design and construct the major infrastructure projects dealt with in the eighteen Strategic Integrated Projects. These projects include the building of two new universities and twelve new TVET college campuses and various dams, roads, railway lines, energy generation plants, transmission and distribution facilities, and broadband. A list of the professional and associate professional skills needed for these projects is given below:

Aeronautical engineering	Industrial engineering technologist
Astronomer	Land surveyor
Chemical engineer	Engineering surveyor
Chemical engineer technologist	Geomatics
Chemical engineer technician	Landscape architecture
Civil engineer	Materials engineer NDT
Civil engineer technologist	Materials Engineer-Roads
Civil engineer technician	Materials engineer technologist
Computer network technician	Materials engineer technician
Construction health and safety	Mechanical engineer
Construction and project managers	Mechanical engineer technologist
Draughts persons	Mechanical engineer technician
Electrical engineer	Nuclear engineering
Electrical engineer technologist	Physicist
Electrical engineering technician	Quantity Surveying
Electronic engineer	Quantity surveying technician
Electronic engineer technologist	Town planner

Electronic engineer technician	Town planning technician
Environmental engineering	Mining engineer
Forestry technician	Mining engineer technologist
Industrial engineering	Mining engineer technician

Table 16: Professional and associate professional skills needed for the SIP projects.

Many of these occupations would also be needed to achieve the outcomes listed in the Limpopo Development Plan. which TUT is capable of delivering

Apart from the above national skills priorities, regional imperatives should also be taken into account in developing niche programmes to support the training of graduates in the relevant scarce skills areas. These regional imperatives have been discussed in the section dealing with the Limpopo Development Plan.

6.4 Future use of the Campus of the Giyani College of Education

It needs to be documented that the Khatsani Educational Initiative, as early as 2010, proposed to the Minister that the University of Pretoria be approached to establish a learning site/campus in Giyani as an extension of the University of Pretoria. Their reasons for this proposal relate to the fact that the University of Pretoria has demonstrated its commitment to reconciliation in the country. The university has a teaching and research reputation committed to students and thereby produces quality graduates.

During a meeting where the Minister again met with the Khatsani Educational Initiative in April 2014, the minister mentioned that the Giyani Campus has a very solid infrastructure that could be put to good use. The Minister had raised the issue of providing university education in Giyani with the University of Limpopo, but that the latter was not keen on this, citing the expense of doing so. The Minister had also investigated the possibility of the University of Venda establishing a learning site in Giyani, but he had been advised that there may be problems in this regard. The Minister then said that he thought that the University of Pretoria would be interested in the campus and undertook to raise the issue with the Vice-Chancellor. Therefore, it is fitting that the minister on the 9 of June committed TUT to carry this mandate.

Therefore, this proposal is the mechanism to fulfil the minister's promise to the Khatsani community. In fact, the Executive management of the university as well as the Exco of council already visited the campus and is happy with the infrastructure

Subsequent to discussions held on 17 June 2015, the Khatsani Educational Initiative submitted a list of programmes that could possibly be offered on the Giyani site, namely Education, Public Administration, Human and Social Sciences, Law, Business Studies, Public Health, and Agriculture. Therefore, the programmes offered by TUT at this campus are listed in Table 19. These programmes are in line with the proposal made by Khatsani educational initiatives.

Although this is not explicitly stated in the letter of the University, it is inferred that the University would be willing to accept the Giyani Campus as a satellite

campus subject to the conditions as stated above being met. It is not clear whether the University will do the due diligence study and the detailed risk assessment or not. The Executive Management of the University has already visited the Giyani Campus on 21 July 2015. Programmes in Education at the Hons level are also among the range of programmes considered by the University.

The formal position of TUT is that it would be able to assume the responsibility for the Giyani Campus as a distant Campus. Although the distance of 420km between the Giyani Campus and TUT would create logistical complexities and have cost implications for the university and the DHET, it remains in the interest of higher education in South Africa. However, the university is prepared to start a distant campus to give access to a BEd Honours programme in Teacher Education and Professional Development by utilizing the Giyani campus as a site of delivery starting in 2022 February and other programmes starting in 2023. The programme will create access to postgraduate studies for aspiring teachers with undergraduate degrees and be handled in full by TUT. Opening a remote contact lecture site will have cost implications for the University but will also create broader study opportunities for Giyani students. Because the Giyani students cannot be expected to pay higher tuition fees than students enrolled at the TUT Pretoria Campus, the University would have to approach the DHET to fund the additional costs through an appropriate per capita surcharge on the different funding framework categories. Details about the surcharge percentage will be provided once the University has completed its cost calculations.

Before considering the various possibilities for the future use of the Campus of the former Giyani College of Education, it needs to be pointed out that there are enough secondary feeder schools to provide enough matriculants to populate such a Campus. Furthermore, it has also been pointed out that the matric results of the Limpopo Province showed the strongest performance of all the provinces in Agricultural Sciences and the second strongest performance in Geography. In Physical Sciences, it shared the top performance position with the Free State Province. Similarly, the performance of Limpopo matriculants in life sciences and physical sciences is among the best in the country. Limpopo, however, had the weakest performance in Computer Technology, which could be explained by a lack of facilities for teaching in the form of computer laboratories. The Limpopo performance in Accounting and Business Studies is markedly weaker than the rest of the provinces. This suggests that the Giyani site would be a suitable site for the possible training of students in a relatively wide range of disciplines.

The inputs referred to above suggest that the former Giyani College of Education campus could be used to establish a range of higher education opportunities for the surrounding communities and the Limpopo province. The former Giyani College of Education campus is a very suitable site for this purpose based on the size of the Campus and the existing infrastructure.

Considering the mix of national training priorities and Limpopo training priorities, Education, Mining, Agriculture, Tourism, and Engineering emerged as priority areas (see Table 19).

The following sequence for the introduction of programmes on the Giyani Campus is proposed:

- Firstly, the BEd (Hons) programme should be introduced because of the previous statements made by the Minister regarding the revival of the Campus for teacher training. The fact that the Campus had been designed and used for teacher training for almost 17 years is an advantage in support of this

proposal. Apart from Nursing, this is the highest priority of the DHET as regards university undergraduate programmes.

- The second proposed batch of programmes to be introduced at the Giyani Campus later is the Certificate and Diplomas in Agriculture e.g. (Animal Production) and other programmes as in Table 19. It is important to empower a new generation of farmers to use the land to feed the nation, especially on land obtained through restitution. Agriculture is becoming just as important as education in South Africa. This Diploma is currently offered at the Madzivhandila Agricultural College close to Thohoyandou under the auspices of the Tshwane University of Technology. The possibility of introducing a Diploma in game ranch management could also be considered. This Diploma should only be introduced once the new Campus has had enough time to establish all the critical functions and operations of a distant campus.

- The third proposed programme is the Diploma in Ecotourism Management, which is expected to resonate well with the local tourism industry. The University of Venda is also offering programmes in Tourism and Hospitality Management, as well as the Sir Val Duncan TVET, the Letaba TVET (Maake), and the Mopani SE TVET.

It needs to be pointed out that the number of students to be enrolled on the Campus is critical for the financial sustainability of the Campus. For this reason, the Campus should be allowed to grow its undergraduate students to the maximum capacity of the campus to capitalize as much as possible on the economies of scale. This may even require a new building programme to accommodate more students on the Campus before introducing the Diploma in Agriculture which needs special facilities. The introduction of postgraduate studies should therefore be considered at a later stage because of the economies of scale argument.

Regarding other priority areas of training for the Limpopo Province, such as Mining, the University of Venda is already offering mining and environmental geology programmes. Training for careers in mining engineering and mining metallurgy for technicians is offered more appropriately by the Sir Val Duncan TVET near Phalaborwa, about 110km away from Giyani. As pointed out before, Nursing is already provided by the Giyani Campus of the Limpopo College of Nursing.

As previously mentioned, that the Letaba TVET College has a satellite campus in Giyani with students currently pursuing courses in Engineering and Management. With the planned fast growth of the TVET sector, it is expected that the College will also outgrow its current premises and that a larger campus would be required. Therefore, it is suggested that the TVET College eventually also be relocated to the Campus of the former Giyani College of Education. This would permit the joint use of residence and sporting facilities and create opportunities for articulation within the post-school system.

As far as the ownership of the property and infrastructure on the Giyani Campus is concerned, it needs to be pointed out that the 2001 Ministerial declaration regarding the incorporation of the former Giyani College of Education with the University of Venda had not been rescinded by the Minister. Depending on the choice of the receiving university, this will need to be addressed. Because the Giyani Campus was designed and used for academic purposes and not for performing the administrative functions of the LDE, it makes good sense that an acceptable agreement is found that would allow the LDE to vacate Giyani Campus. This may require a suitable compensation agreement for the LDE to transfer property and infrastructure to the receiving university and for the Minister to approve a different utilization of the Campus by the receiving university, based on the governing model chosen for the Campus. The land belongs to the Provincial Public Works Department.

6.5 Facilities on the Giyani College of Education Campus

The site plan of the Campus is shown using a Google Satellite image taken in November 2013. The boundaries of the terrain are indicated by the trapezium shape drawn onto the satellite image. The Entrance Gate to the Campus at the top of the image has the coordinates (-23.2981 , 30.7234). The site area is approximately 72.5 ha and is mainly overgrown with typical bush-veld vegetation.

Figure 10a: Google picture of the Campus of the former Giyani College of Education.

The area on the picture between the two vertical white lines has been enlarged in Fig 10b to see details of buildings on the Campus in greater detail.

Figure 10b: Enlarged Google picture of the central part of the Campus of the former Giyani College of Education.

The firm VSB Quantity Surveyors, assisted by Kanda Design and JH Systems, has been requested to estimate the assignable square meters (ASMs) by building space type and do a condition assessment of each building with an estimate of the deferred maintenance costs. The information presented below is based on the Report produced by VSB Quantity Surveyors. Estimates of ASMs were based on scanned drawings as obtained from photographs of a building sketch plan proposal for the design of the Campus. The scales were electronically manipulated for accuracy as no other digital information about building plans exists.

The ASM of a building is defined as the sum of all areas in a building available or potentially available to occupants, including offices, classrooms, laboratories,

conference rooms, library space and special use space. Deferred maintenance is the practice of postponing building maintenance activities such as repairs to save costs or deal with budget constraints. The failure to perform needed repairs could lead to asset deterioration and ultimately to asset impairment.

On the basis of estimates made by VSB Quantity Surveyors, the ASMs for the different space types in the buildings used for teaching and support services marked in Figure 10a are as set out in Table 17 below. One of the difficulties encountered when doing the survey was that it was difficult to distinguish between a large or even open plan office and a classroom in some cases. Library space also presented similar problems. The terminology used here is part of the HEMIS Building Space and Cost Norms for universities used by the Department of Higher Education and Training.

The HEMIS Building Space and Cost Norms are norms that connect the ASM space needed and the costs to be incurred to provide that space to student FTE's of a particular type. The costs are expressed in terms of a specific "currency" - the cost unit – whose value is annually updated by using the BER/MFA building cost indices. These costs are also extrapolated into the future. Costs calculated in this way include building escalation and are fixed in terms of the cost unit value of the year in which the building will be completed. By definition, one cost unit is establishing 1 ASM of office space in a particular year. The Rand value of one cost unit is R20 328 in 2015. All costs in this document will be expressed in terms of the Rand of 2015.

Academic and support buildings	Class-room	Labora-tory	Office	Library	Other	ASM	GSM	CU
Gate house			9			9	12	9
Admin building			707			707	1 516	707
Lecture hall	500		133			633	743	883
Cafeteria & Ablution					491	491	679	540
Sport hall			209		297	506	1 007	536
Student centre					558	558	778	614
Central kitchen					885	885	885	974
Dining Hall Mens 1					540	540	752	594
Dining Hall Ladies 1			77		420	497	631	539
Academic Building 1	494		213			707	949	954
Academic Building 2	494		213			707	949	954
Academic Building 3	494		213			707	949	954
Academic Building 4	494		213			707	949	954
Academic Building 5	422		164			586	828	797
Total	2 898		2 151		3 191	8 240	11 627	10 008

Table 17: ASM by space type, GSM and CU for the academic and support buildings on Campus.

It is observed from the table that the ratio of ASM to GSM space is 71% which is in line with the higher education benchmark. Furthermore, the total number of CU for all the academic and support buildings on the Campus is equal to 10 008CU. The Rand value of this in the Rand of 2015 is equal to R203,4m.

Similarly, the ASMs of buildings used for student residences as estimated by the quantity surveyors, are listed in the table below. The 27 houses used by staff at the time (because of the relative isolation of the Campus), in this study has been designated as communal student residences and also included in this table:

Residence buildings	ASM	GSM	CU	Beds
Ladies Hostels Block 1	1 462	3 392	1 535	102
Ladies Hostels Block 2	1 462	3 392	1 535	102
Ladies Hostels Block 3	1 187	2 850	1 246	80
Mens Hostels Block 1	1 462	3 392	1 535	102
Mens Hostels Block 2	1 462	3 392	1 535	102
Mens Hostels Block 3	1 462	3 392	1 535	102
Mens Hostels Block 4	1 050	1 821	1 103	120
Former Staff Housing	4 914	4 914	5 160	108
Total	14 461	26 545	15 184	818

Table 18: ASM, GSM and CU for student residence buildings on Campus.

In the latter case, the ratio of ASM to GSM is only 54%, which with minor redesigns may increase to provide more usable space in residences. Furthermore, if the residences (excluding the former staff housing) are considered a group, then the ASM per student or per bed in residences is 13,4 ASM, which is slightly below the HEMIS norm of 15,6 ASM. The total number of CU for all the residence buildings (including former staff housing) on the Campus is equal to 15 184CU. The Rand value of this in the Rand of 2015 is equivalent to R308,7m. The so-called HEMIS replacement value for all buildings on Campus in the Rand of 2015 equals R512,1m.

The HEMIS replacement value of the external works on the Campus is very difficult to calculate. The external works, which is technically referred to as land improvements other than buildings, pertains to landscaping, roads, parking areas, water and stormwater reticulation networks, etc. Within the university sector, this is usually estimated by setting the HEMIS replacement cost of the external works equal to 13% of the HEMIS replacement value of all the buildings on the Campus. Therefore, the 2015 estimated value of the external works for the Campus is estimated to be equal to R66,6m.

As regards the ownership of the property, the buildings are owned by the Provincial Public Works Department. The maintenance of the buildings is done by the Provincial Public Works Department from funds on the LDE budget.

7. Digital Agriculture

Due to the needs of the region, TUT proposes a strong emphasis on Digital Agriculture. It is also noted that both the University of Venda and the University of Limpopo are offering formal training programmes in agriculture, including programmes at the postgraduate level.

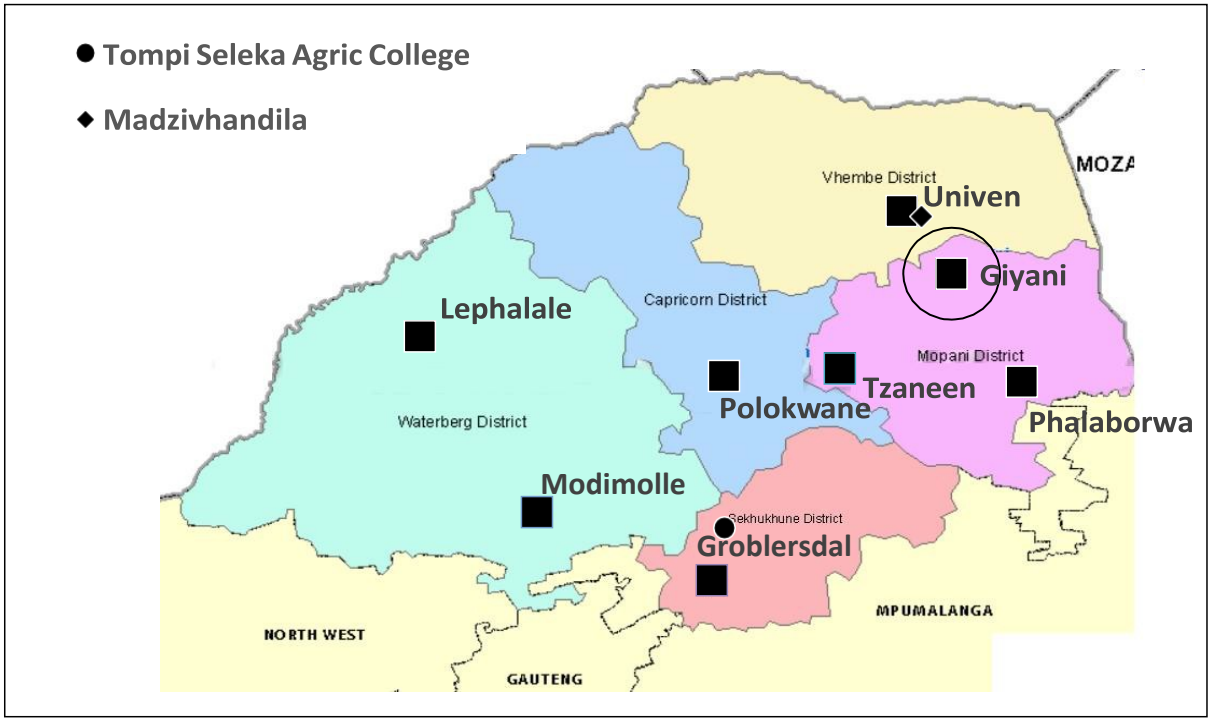


Figure 11: Distribution of provincial Colleges of Agriculture across the Limpopo province.

The above map shows the position of the two colleges of agriculture relative to the Campus of the former Giyani College of Education. Within a radius of 60km from the Giyani Campus, there are two delivery sites of agricultural programmes.

The intentions of the Government to shift the responsibility for the agricultural colleges from the Department of Agriculture to the DHET, may also see the agricultural colleges incorporated as satellite campuses of universities because of the fact that universities already offer extensive programmes in agriculture. The incorporation of the Lowveld Agricultural College with the University of Mpumalanga may be regarded as an example of this. On the other hand, degree

programmes can also be offered by the agricultural colleges through partnership agreements with universities.

The importance of empowering a new generation of farmers to use the land to feed the nation, especially on land obtained through restitution, cannot be overemphasized. Agriculture is becoming just as important as education in South Africa. For this reason, the currently envisaged Giyani distant campus of TUT will primarily focus on Digital Agriculture. In the new era of the fourth industrial revolution (4IR), traditional ways of farming will need to be enhanced. TUT will make use of its newly established Institute for Future of Work (IFoW) to advance this cause.

The IFoW will make use of its Technology Hub (TechHub) to drive this important initiative. The TechHub is one of the core structures of the IFoW) and its primary role is to identify and support industry-led research projects with the associated skills development programmes for the needed social impact.

The TechHub strengthens, accelerates, and facilitates collaboration between academia, industry, government, and communities, thus perpetuating a necessary social compact through Fourth Industrial Revolution (4th IR) technologies.

In particular, for the envisaged Giyani distant campus, the TechHub will provide a demonstration platform of IoT technologies, utilizing applications within the domains of smart campus and precision digital agriculture. The TechHub will encapsulate the entire value chain from research, development, technology transfer, skills development, short learning programmes, incubation and commercialisation to address capacity building and economic upliftment in South Africa and the African continent.

The Institute for the Future of Work was established to respond to the global impact of technology like artificial intelligence, robotics, the internet of things and others, on the skills required for the current and future worlds of work. These are the 4IR drivers. The Technology Hub within the Institute for the Future of Work creates an ecosystem of partners through which unique innovations and activities related to the Fourth Industrial Revolution (4IR), the Internet of Things (IoT), Industrial Internet of Things (IIoT), Internet of Everything (IoE) and related technologies can be developed, incubated and commercialised. Below are services that could be offered:

- Applied Research and Product Development
- Manufacturing Services (Additive Manufacturing, Laser Cutting, Electronic Manufacturing)
- 4IR Technologies for Manufacturing Process Optimisation
- Specialised Training Programmes
- Work Integrated Learning (WIL) Programmes
- IoT Process Improvement
- IoT Architecture Design
- Technology Demonstration
- Testing Services

Applications of IoT technologies are envisaged to be utilised in the domain of digital agriculture and smart campus. These technologies can provide the agricultural industry, and the campus, with the tools and information to make more informed decisions and improve productivity. It is envisaged that through the demonstration platforms at the TechHub we will develop technological solutions and skills development programmes that can provide digital agricultural and smart campus solutions.

It should also be noted that research and innovation in digital agriculture is already a focus area at TUT. The three faculties of Information and Communication Technology, Engineering and the Built Environment and the Science faculty are collaborating on projects that will advance smart farming and provide direction for food security. Digital agriculture is the flagship research and innovation project in the ICT Faculty where the focus is currently on:

Intelligent management and monitoring of livestock using IoT and deep learning
IoT-driven wildlife monitoring using drones
Applying computer vision and deep learning to diagnose and treat plant disease using drones
Developing an extended Living lab framework for knowledge support in Smart Farming Ecosystems

Furthermore, the intention is to develop low-cost smart animal remote monitoring systems for rural farms without commercial mobile network access, with advanced applications on anti-theft, livestock product tracing, animal health and livestock environment recording. It also means that through monitoring livestock, the systems will supply farmers with the following information in real-time:

- The global positioning of the animals (this will help with the prevention of livestock theft)
- Health conditions of the animals (make a remote diagnosis of animals based on body temperature and heart rate)
- Monitoring of environmental conditions (this gives the farmer a means to analyze the influences of environmental conditions on the final product)

Implementing these projects requires further research on passive, semi-active and active RFID positioning of farm animals; configurations of sparse Internet of Things networks with mobile nodes for farm animal monitoring; solar energy solutions for rural farm smart systems; middle to long-range wireless communication on rural farms; and environmental data monitoring for living quality of farm animals.

Living labs are of paramount importance and play a critical role in bringing different stakeholders together to drive innovation in a co-creator space. Living labs can be defined as “an environment for innovation and development where users are exposed to new solutions in (semi)realistic contexts, as part of a medium or long-term studies targeting evaluation of new solutions and discovery innovation opportunities”. It is envisaged that the living lab uses methods and tools to support the exploration of solutions under real conditions to provide digital agriculture and smart campus solutions.

The outcomes from the living lab include knowledge, new products, new processes, solutions to the implementation of existing products, new innovative services and intellectual property, start-ups and new ventures.

The Smart Campus platform will serve to develop technologies in the 4IR space that will optimise the management and operation of the infrastructure and improve the user experience of the infrastructure. The Smart Campus platform will use an open-source platform to allow collaboration and development from across different stakeholders. The platform will comprise of research and development and selected from the following strategic thrust areas:

- Smart Buildings
- ✓ Building management systems
- ✓ Smart lecture theatres
- ✓ Automated metering
- ✓ Real-time monitoring, display and alert
- ✓ Trend monitoring
- ✓ Green buildings technologies and approaches

- Smart Maintenance
- ✓ Automated planned maintenance scheduling system
- ✓ Automated emergency maintenance system

- Smart Space Management
- ✓ Digital campus and building platform
- ✓ Smart campus parking platform
- ✓ Location Tracking
- ✓ Automated building space management system
- ✓ Automated lecture theatre management system
- ✓ Automated venue booking management system

- Smart Water
- ✓ Digitalisation of water metering
- ✓ Solenoid valves and occupancy sensors for the ablution blocks
- ✓ On-line digitalisation of water usage monitoring system
- ✓ Occupancy based water services for buildings
- ✓ Green water technologies

- Smart Energy
- ✓ Digitalisation of energy metering

- ✓ Online digitisation of water usage monitoring
- ✓ On-demand water heaters for kitchens
- ✓ Green energy technologies and approaches

- Smart Campus Mobility
- ✓ Online / app / timetable for student transport
- ✓ Online / app for pool vehicles
- ✓ Smart campus access for vehicles
- ✓ Green technologies for campus transport

- Smart Security
- ✓ Smart cards for staff and students
- ✓ Smart CCTV cameras
- ✓ Use of UAVs for security

- Smart Student Academic Support Services
- ✓ Apps for / online student support services
- ✓ Teaching and learning
- ✓ Library services
- ✓ Analytical academic performance

- Smart Student Support Services
- ✓ Apps for / online student support services e.g. application, registration, finance / financial aid, student marks, etc.

- Communications Technologies
- ✓ Smart Connectivity

The Smart Campus platform will be focused on collaborative research with industry, as TUT's focus will be mainly on the development of applications of technology in this area.

Given the involvement of seven faculties, a multidisciplinary paradigm will be pursued for the Giyani distant campus through the strategic direction provided by the IFoW' TechHub. The faculties will cooperate internally to deliver teaching and research that is both creative and commercialisable, embracing the advancement of technology knowledge in the 4th IR era while supporting established industries and supporting the new innovative industries.

The proposed facilities will comprise the IFoW building focused on the commercialisation of research and innovation related to major industries around Giyani and the Limpopo province. As part of the IFoW, the business incubation centre will also be developed to support technological business focused on the 4IR technologies in the major industries that are available in Giyane and Limpopo province.

IFoW seeks to institutionalize the ideation in the future of work. In so doing, it will lead to a reinvention of TUT as the people's university that makes knowledge work, especially as it relates to its strategic commitment to becoming a digitally advanced university. The Institute seeks to achieve its vision by engaging in high impact research on 4IR and the future of work; engage in various innovation endeavours intended to offer solutions to different societal challenges; shape curricula development endeavours for resonance with the contemporary reality of the digital economy; and host strategic dialogues intended to position TUT as a thought leader on 4IR and the future of work.

8. Research, Technology development and Enterpise Development

While the primary motivation for the establishment of a campus in Giyani is extending university of technology education services into a region that's is in need of one, there is a greater motivation. The need for the new campus to align its programmes as much as possible with the needs of, and opportunities that lies in, the local communities mean the academic programme cannot be an end in itself. There has to be a greater purpose!

As indicated elsewhere in this document, the Mopani region is home to lots of agricultural, natural and cultural resources that provide new avenues for research, technology development and enterprise development. Specifically, the region and the province at large are endowed with indigenous knowledge systems spanning food technology, medicine, culture and mythology.

There is therefore a need to build alongside the academic programme a programme for a system of innovation encompassing the said key elements of the innovation value chain. In this regard, in is important to partner with private sector firms interested in investing in the innovation value chain to take advantage of the possible spin-offs. This on the other will mutually reinforce the quality of the academic programme and knowledge production, while at the same time mobilising financial resources for the upkeep of the programmes.

The innovation value chain programme will have to identify key partners spanning local and international industry players, science councils, other universities, development funding institutions and venture capital firms as well as the traditional communities and farmers.

Within the context, the existence of a TVET collages in the area means that when the university develop technologies, the TVET college can facilitate the fabrication knowledge and skills and feed those straight into industry.

Finally in this regard, there will be a need to develop additional infrastructure to house and facilitate this innovation value chain, including incubating the new spin off enterprises. The university will have to partner with the local and regional municipalities, traditional communities who own the land in the area as well other organs of state to create the necessary innovation hubs.

B. PROPOSALS AND RECOMMENDATIONS

On the basis of the information presented in this Report, the following proposals are tabled:

The Giyani College of Education is transferred to the Tshwane University of Technology to be used as distant education site for higher education provisioning.

The following academic programs are recommended to be introduced, using a phased-in approach to enable future growth of this campus, as in Table 19 below. Part-time lecturers will provide service subjects offered at this campus, and other programs such as Geology will be introduced as and when is necessary.

In order to address the shortage in ICT skills, we plan to offer the Diploma in Computer Science. This Computer Science qualification is designed to equip students with programming, analysis and design skills that include back and front-end web development, mobile computing, software engineering and data science in a variety of business, scientific and social contexts. The emphasis of this qualification is to prepare students for a career in computer programming. In order to use 4IR technologies to impact agriculture, the third-year software project done by the computer science students will focus on digital agriculture, and the six month work-industry learning period will be designed to focus on applying ICT skills in the agricultural environment. Over time, Engineering Certificates and Diplomas will also be introduced.

It is further recommended that once the academic programme is established, a programme for system of innovation comprising research, technology development, and enterprise development is also established through an IFOW () (IFOW) that is supported by key partnership. This is in order to foster economic development in the region.

Table 19: Priority Programmes to be offered

Programme Name	NQF (Credits)	Purpose	Enrolment target	Staff Requirements	Lab Requirements
Diploma in Animal Sciences (DPAA19)	NQF Level 6 (360 credits)	The qualification is designed to empower graduates to work as animal production technicians for research, technology development and technology transfer; as well as knowledge and skills to be appointed in modern commercial production units, to become entrepreneurs to start their own agricultural	50	2 Full Time Staff 7 Pat-Time Staff (Service Subjects1) Other modules shall be offered using Multi-Modal T&L and remotely using existing	Labs required for Practical (Anatomy & Physiology, Science for Occupational Purpose: Physics & Chemistry). Practical excursions shall be conducted in

[1] Service subjects includes CAP105X, CPL105X, INI125D, LFI125X, MAS105X, SOR105D, ENT115D.

		businesses and to actively engage with various farming communities and industries. Articulates towards Advanced Diploma in Animal Sciences.		staff from Pretoria.	commercials farms and industry.
SLPs in Animal Production	Non-Credit Bearing	Offering of SLPs in Basic and Advanced Poultry (Broiler and Layers), Dairy (Milk), Piggery, Small Stock (Sheep and Goats) and Beef Cattle Production	N/A	Multi-Modal T&L and remotely from TUT Pretoria using existing staff.	Practical excursions shall be conducted in commercials farms and industry.
Diploma in Crop Production (DPCP19)	NQF Level 6 (360 credits)	The qualification capacitate learners to function effectively in the agricultural industry, with specific reference to value chains of vegetables, fruit, and field crops and promoting an entrepreneurial mind-set. The qualification pays attention to plant growth factors, resource requirements in crop production, crop protection, post-harvest technologies and economics.	50	2 Full Time Staff 7 Pat-Time Staff (Service Subjects) Other modules shall be offered using Multi-Modal T&L and remotely using existing staff from Pretoria.	Labs required for Practical sessions (Physics & Chemistry). Practical excursions shall be conducted in commercial farms and industry.
SLPs in Crop Sciences	Non-Credit Bearing	Offering of SLPs in Farm Management, Tractor Operation and Maintenance, Advanced Vegetable Production, Maize Production, Advanced Hydroponics Production, Irrigation Design and Maintenance, Open Field Vegetable Production, Record Keeping and Human Resource Management, Financial Management, Marketing Course, Farm Planning, Agricultural Extension Refresher Course, Advanced Crop Protection, Soil Analysis and Fertilizer Recommendation, Hydroponics Production System, Vegetables and Grains.	N/A	Multi-Modal T&L and remotely from TUT Pretoria using existing staff.	Practical excursions shall be conducted in commercial farms and industry.
Higher Certificate in Water Treatment (HCWT19)	NQF Level 5 (120 credits)	This qualification provides students with knowledge and skills required to register as a Class III process controller under Regulation 17 of the Water Services Act 108 of 1997. The graduate will operate water and wastewater treatment plants effectively, as process controller to produce high-	40	4 Staff required for service subjects 4 staff required (2x Lecturers, 1x Technician and 1x Lab assistant)	Labs required for Practical's (Water and Microbiology labs). Excursions shall be conducted in Water and Wastewater Treatment

		quality drinking water and effluents from wastewater treatment plants that comply with the General Authorisations of the Department of Water Affairs for effluent discharge into public streams (National Water Act 36 of 1998, Section 21).		Multimodal, blended, and remote T&L	Plants around the Province.
Diploma in Geology (DPGE19)	NQF Level 6 (360 credits)	The qualification will provide students with practical experience to carry out small scale mining in an environmentally friendly manner underpinned by thorough theoretical knowledge that will ensure that they are employable as technicians in the mining, hydrogeological, engineering geology and exploration fields. The programme has a high level of practical and theoretical training and the qualification is aimed at equipping students with analytical thinking skills and the ability to solve problems of a three dimensional nature that are required in the different geological fields.	30	Multi-modal T&L and remotely from TUT Pretoria using existing stuff. Extra 7 staff maybe required for the service subjects	Labs will be required for petrological work, chemistry, physics and chemistry. Fieldwork will be carried out in the Greenstone belts and the areas surrounding the proposed campus
Diploma in Horticulture	NQF Level 6 (360 credits)	The qualification will equip learners who wish to develop skills to propagate, grow, maintain and sell ornamental plants, and want to gain knowledge on horticultural management and entrepreneurship. Knowledge and skills obtained can be used in the management of horticultural businesses, garden centres, nurseries, city councils and government departments, and as assistants at research institutions like botanical gardens and the Agricultural Research Council. In addition, the knowledge gained in entrepreneurship and management will enable students to start their own businesses and create jobs in communities.	50	2 fulltime staff Extra staff required for 7 service subjects Other modules shall be offered using Multi-Modal T&L and remotely from TUT Pretoria using existing staff.	Labs and greenhouse space required for practical training sessions (Botany, Horticulture, Plant studies)
Diploma in	NQF Level 6	The qualification will equip graduates with	20	1 fulltime staff	Design studio (lab)

Landscape Technology	(360 credits)	appropriate management and entrepreneurial skills to independently plan, cost, implement and maintain landscape projects. In line with local context, the learner will be equipped to promote sustainable landscape principles and apply critical thinking in resolving landscape problems. Graduates will also be able to innovatively create green spaces in communities and business environments to enhance the quality of life and contribute towards the conservation and sustainabilty of South Africa's plant resources and landscapes.		Extra staff required for 7 service subjects Other modules shall be offered using Multi-Modal T&L and remotely from TUT Pretoria using existing staff.	Computers and specialized software for landscape design purposes
Diploma in Food Technology	NQF Level 6 (360 credits	The students will be able to learn skills on how to make valuable products from the agricultural products. Subjects like Food Technology and Food quality and safety techniques, Food Product Development and Food Industry Management	50	Multi-modal T&L Extra 3 staff fulltime members may be required	Labs will be required for most of the subjects.
Diploma in Nature Conservation	NQF Level 6 (360 credits	The qualification will provide students' with knowledge and skills in the current theory, practice and methodology within the field of nature conservation South African contexts. The qualification will produce graduates with the requisite vocational knowledge and skills in nature conservation and conservation management and the ability to apply these throughout the South African conservation estate in aiding the transformation of the socio-economic landscape of South Africa.	50	3 fulltime staff (1 section head) plus 1 shared administrator. Six year subjects presented face to face in Giyani with three subjects multi-modal and block release from Pretoria	Labs required for practicals. Study materials and collections. E.g. Microscopes. Skulls, microsope, slides. WiFi for students to connect with lectures from Pretoria
Diploma in Eco-Tourism	NQF Level 6 (360 credits	The qualifications is designed for candidates who wishes to contribute to environmental and economically sustainable ecotourism. The outcome of the qualification is to produce a	20	2 fulltime staff 4 Part-time lecturers	1 Ecology Laboratory shared with Nature Conservation.

		graduate who will have ability to integrate knowledge of ecology and tourism to integrate ecotourism management and leadership knowledge with those of customer service and the operational specifics of a given ecotourism context. The qualification is more suitable for Giyani due to its proximity to the Kruger National Park. The programme will operate synergistically with the Diploma in Nature Conservation and staff members from both programmes can teach across qualifications. The following are possible job opportunities; ecotourism destination planners at local or provincial government, tour operating and consulting, curation of eco-destinations etc.			
BEd Honours	NQF Level 8 (120 credits)	The qualification will provide the qualified teachers with extensive pedagogical content knowledge to teach their major subjects. This will enable them to select, apply and transfer knowledge according to the subjects' and learners' individual pedagogical needs.	70	2 fulltime staff. Extra staff required for 5 service subjects. Other modules shall be offered using Multi-Modal T&L and remotely from TUT Pretoria using existing staff.	
Local Government Management :Public Affairs	NQF Level 6 (360 credits)	The purpose of this program is mainly to equip students to apply the relevant skills, knowledge and competencies essential to optimally fulfill the roles and responsibilities of local government councilors, officials or other employees involved in municipal affairs.	50	1 fulltime staff Extra staff required for 5 service subjects. Other modules shall be offered using Multi-Modal T&L and remotely from TUT Pretoria using existing	

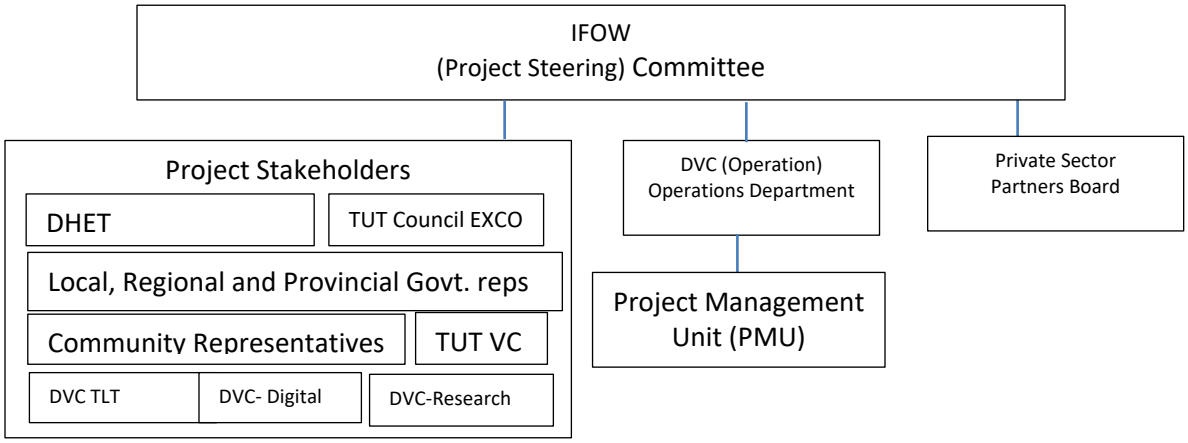
				staff.	
Advanced Diploma in Technical and Vocational Teaching	NQF Level 7 (140 credits)	The AdvDip (TVT) is a professional teaching qualification for lecturing at institutions that offer technical and/or vocational education and training programmes. The AdvDip (TVT) offers entry-level professional teaching preparation of graduates/diplomates to develop expertise in teaching in a particular TVET field or subject.	50	2 fulltime staff Extra staff required for 7 service and other specialised subjects. Other modules shall be offered using Multi-Modal T&L and remotely from TUT Pretoria using existing staff.	Labs and workshops required for Practical's. Specialised software
Diploma in Electrical Engineering	NQF level 6	To train technicians in the field of Electrical engineering who will meet the criteria for registration as a Professional Engineering Technician at the Engineering Council of South Africa (ECSA). An undergraduate student achieving a qualification will be skilled and competent to solve well-defined problems and to apply the principles of engineering by using both the theoretical and practical knowledge and proven techniques int the execution of technical tasks as per the ethical and professional standards required by the engineering profession in the industry.	40	5 Full time lecturers need for this program. This will be additional to the current staff. Although at some cases a multi modal T&L will be exercised, Engineering required laboratory work and hand on practice hence lecturer requirement is essential. 1 technician required to run the laboratory.	Electronics laboratory and digital laboratory are needed. Physics laboratory and computer laboratory is needed. This can be shared among Engineering qualifications.
Diploma in Mechanical Engineering	NQF level 6	To train technicians in the field of Mechanical engineering who will meet the criteria for registration as a Professional Engineering Technician at the Engineering Council of South Africa (ECSA). An undergraduate student achieving a qualification will be skilled and competent to solve well-defined problems and to	40	5 Full time lecturers need for this program. This will be additional to the current staff. Although at some cases a multi modal T&L will be exercised,	Basic Manufacturing Engineering Laboratory Control system laboratory where student can learn to program robots and pneumatics. There is a

		apply the principles of engineering by using both the theoretical and practical knowledge and proven techniques in the execution of technical tasks as per the ethical and professional standards required by the engineering profession in the industry.		Engineering required laboratory work and hand on practice hence lecturer requirement is essential. 1 technician	need for a machine programming laboratory for vocational industry certificate. Physics lab can be used for this student's practical's as well
Diploma in Mechatronics Engineering	NQF level 6	To train technicians in the field of Mechatronics engineering who will meet the criteria for registration as a Professional Engineering Technician at the Engineering Council of South Africa (ECSA). An undergraduate student achieving a qualification will be skilled and competent to solve well-defined problems and to apply the principles of engineering by using both the theoretical and practical knowledge and proven techniques in the execution of technical tasks as per the ethical and professional standards required by the engineering profession in the industry.	40	2 Full time staff members are required. A multi modal approach will be followed however there is a need for full time lectures with control system specialisation	Same requirements as mechanical engineering as above but different specialisations. Control system laboratory and programming requirements for this group
Diploma in Mining Engineering	NQF level 6	To produce competent mining engineers whose responsibilities would include the selection and managing of the optimal mining process applicable to the relevant mineral deposit to be mined. A qualified person with sufficient experience will be able to register with the Engineering Council of South Africa (ECSA) as a Professional Technician in this field of Engineering	40	9, since will be anew qualification, there is need for full time staff compliment, 2 staff members for year one, 3 staff members for year 2 and 3 staff members for year 3. 1 technician	Lab requirements for Physics, chemistry laboratory with focus of mineral. A rock analysis laboratory will be required and a survey laboratory will be needed as well. Optical microscopy laboratory Mine Design and Computing

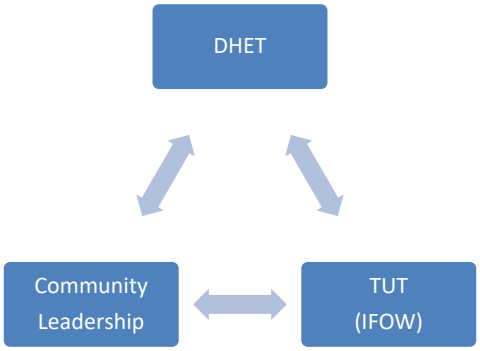
Diploma in Computer Science (DPRSF0)	NQF Level 6 (360 credits) offered over 4 years (extended programme)	The Computer Science qualification is designed to equip students with programming, analysis and design skills that includes back and front-end web development, mobile computing, software engineering and data science in a variety of business, scientific and social contexts. The emphasis of this qualification is to prepare students for a career in computer programming.	50	2 full-time staff for year 1, plus 1 additional for year 2, plus 1 additional for year 3. Plus 2 part-time in Year 4: Total complement required: 4 full time and 2 part-time.	1 x Computer Lab

C. DELIVERY MODEL (PMU-PHASES)

The Operations Department of TUT will implement the project. The Operations Department will report to the Project Steering Committee that will comprise of different stakeholders. A project management unit will oversee the project management and professional services of the infra-structure upgrades, re-development and modernisation. The project management unit will report to the Operations Department.



Project Steering Committee Struture



- DHET Ministry
- TUT -Institute for Future of Work (IFOW)
- Cummunity representatives (Khatsani Educational Initiative, Rixaka Forum, RLU)

The Project Committee structure will ;

- Meet regularly
- Manage the stratrgic focus of the initative
- Manage all strategic stakeholder engagement
- Manage the overall eco-system of the initiative
- Develop the overall govermance framework
-

Figure 12. Governance Structure for Project to Upgrade the Campus Infra-Structure.

D. COSTING AND FUNDING REQUIREMENTS

1. Deferred Maintenance costs

The estimates for deferred maintenance cost of the Giyane campus (since 2013) are R217,35m.

2. Estimates for Infra-structure Upgrades

The estimates to convert the correct campus infra-structure into a Smart campus infrastructure is R176,5m, as provided in the table below.

	Smart Campus Infra-structure Sub-System	Estimated Costs (R m)
1	Modern See Through Fence	20,5
2	Smart Security System	13,5
3	Fire and smoke detection and fire suppression	8
4	WIFI connectivity	18,4
5	BMS	5,9
6	UPS and Gen set	17,3
7	Teaching with Technology Equipment	26
8	Retrofitting of light fittings to energy efficient fitting	10,5
9	Retrofitting of aircon fittings to energy efficient units	33,6
10	Digitisation and update of current building plans	4,8
	Total	158,5

Table 20: Infra-structure upgrades or new installation to achieve Smart Campus Status.

Infra-structure required to improve student life at the campus is estimated at R163,5, as per the table below. This includes provision of sports infra-structure, and the use of sustainable technologies such as renewable energy and water.

Item #	Additional Required Facilities	Estimated Costs (R m)
1	Solar farm	100,0
2	Boreholes for drinking water and irrigation	10,0
3	Soccer and rugby stadium	23,0
4	Cricket stadium	7,0
5	Tennis courts	5,0
6	Volleyball court	3,5
7	Olympic swimming pool	5,0
8	Landscaping upgrades	10,0
	Total	163,5

Table 21: Infra-structure Required To Improve Student Life At The Campus

Infrastructure required to expand the community engagement and industrial development of the industries in Giyani is estimated at R81,8m as provide in the table below.

Item #	Facilities to Expand Campus Offering	Estimated Costs (R m)
1	Development of houses where there are servitudes	5
2	Engineering Building	20
3	IoFW Building	20
4	Business Incubation Centre	5
5	Extension of Car Parkings	7
6	Student Bus Terminal	2,5
7	Student Taxi Terminal	2,5
8	Helipad	1,8
9	Roads and pavement extensions	7
10	Convenient Student Centre (ATMs, cafeterias, pubs)	11
	Total	81,8

Table 22: Infra-structure Required To Expand Community Engagement Offering of the Campus

3. Summary of cost estimates

Item #	Infrastructure Description	Estimated Costs (R m)
1	Deferred Maintanace Costs	217,35
2	Smart Campus Infra-structure Sub-System	158,5
3	Additional Required Infrastructure	163,5
4	Infrastructure Required to Expand the Offering of the Campus	81,8
	Sub-Total	621,15
5	Proffessional fees	74,54
	Total	695,69

Table 23. Summary of the Infra-Structure Requirements for the Giyane Campus.

It is proposed that the refurbishment, re-development and modernisation of the campus be implemented over a five-year period and over four phases of the project. Items to be attended to in the first two years are deferred maintenance and smart campus infra-structure. The table below provides the proposed implementation plan and project phases.

	Phase 1 (2022, R m)	Phase 2 (2023-2024, R m)	Phase 3 (2025, R m)	Phase 4 (2026, R m)
Defferred maintanace	R217,35			
Landscapping	R15,00			
Phase 1 Proffesional fees	R27,88			
SmartCampus Infrastructure		R158,50		
Phase 2 Proffesional Fees		R19,02		
Facilities to Expand Campus Offerings			R81,80	
Phase 3 Proffesional Fees			R9,82	
Additional Required Facilities (Less Landscapping costs)				148,5
Phase 4 Proffesional Fees				17,82
Total Costs Per Phase	R260,24	R177,52	R91,62	R166,32
Cumulative Costs	R260,24	R437,76	R529,37	R695,69

Table 24. Proposed Phased Implementation of Infra-Structure Requirements.

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