

REPORT BY FRED HUGO ON E&T MATTERS 18 AUG 2010

INTRODUCTORY REMARKS

Education and Training covers a wide scope including school learners, artisans, and engineering and technological professionals. Fields of study comprise science, engineering and technology. Furthermore, successful programmes have to address finance, economy and management apart from the technological and environmental facets. This was apparent from the proceedings of the SAAE international workshop held 3 – 4 March 2008. Many programmes, both formal and informal, have been launched nationwide to find workable solutions to enhancing workforce development.

In the recent past SAAE Exco had pinned its hopes on JIPSA as a means of providing guidance to senior executives in government through the expertise it has within its fellowship. Concurrently it had recognized that TRAC was a very successful Physical Science and related Mathematics programme for school learners. It has support from industry and works closely with formal education and technological government departments. Accordingly the progress is monitored and reported under E&T . For more information log on to TRAC website: www.trac.sun.ac.za.

As can be expected tertiary education has direct links with Exco albeit that reports are not provided in a formalized structure. Activities are generally organized through the learned societies. Nevertheless specific specialized topics both nationally and internationally are undertaken through the initiative of Exco. With the expectation of improvements in the HE sector it would be prudent to task Exco members actively involved in tertiary institutions to take responsibility for furthering and reporting on such activities.

Two specific structured modes are the linkage with Centre's of Excellence (COEs) and Centre's of Development (CODs) where fellows participate. These are of paramount importance linking to THRIP and SETA's. In this regard two noteworthy brief reports pertaining to CODs and TRAC respectively, are presented for the benefit of Exco.

CENTRES OF DEVELOPMENT (CODS) SET UP UNDER THE DEPT OF TRANSPORT

The Centre's of Development (CODs) were established under the auspices of the Department of Transport and located in the north, south and east of the country. The respective management offices are in Pretoria (UP), Stellenbosch (SU) and Durban (KZN). The managers are Proff Visser, Hugo and Everitt. At a recent management meeting of the three CODs in Pretoria on June 20, 2010, the following persons made presentations on important developments:

Mr. Mogomotsi Kgantsi – TETA: new S E T A landscape & funding structure

- They have a five year vision and they are updating their website to indicate “scarce skills!” Mr. Kgantsi indicated that the NSF has R500m funding available that will address particular projects to ‘bridge gaps’.

Mr. Andrew Bartlett - DHET : HRD Advisory Council (HRDSA) update.

- It relates to the defunct JIPSA with focus on Capacity Building.
- Ms Mnguni indicated that she engaged with DHET and explored their funding model. DHET indicated that tertiary institutions are required to meet certain criteria in terms of research and bridging programmes

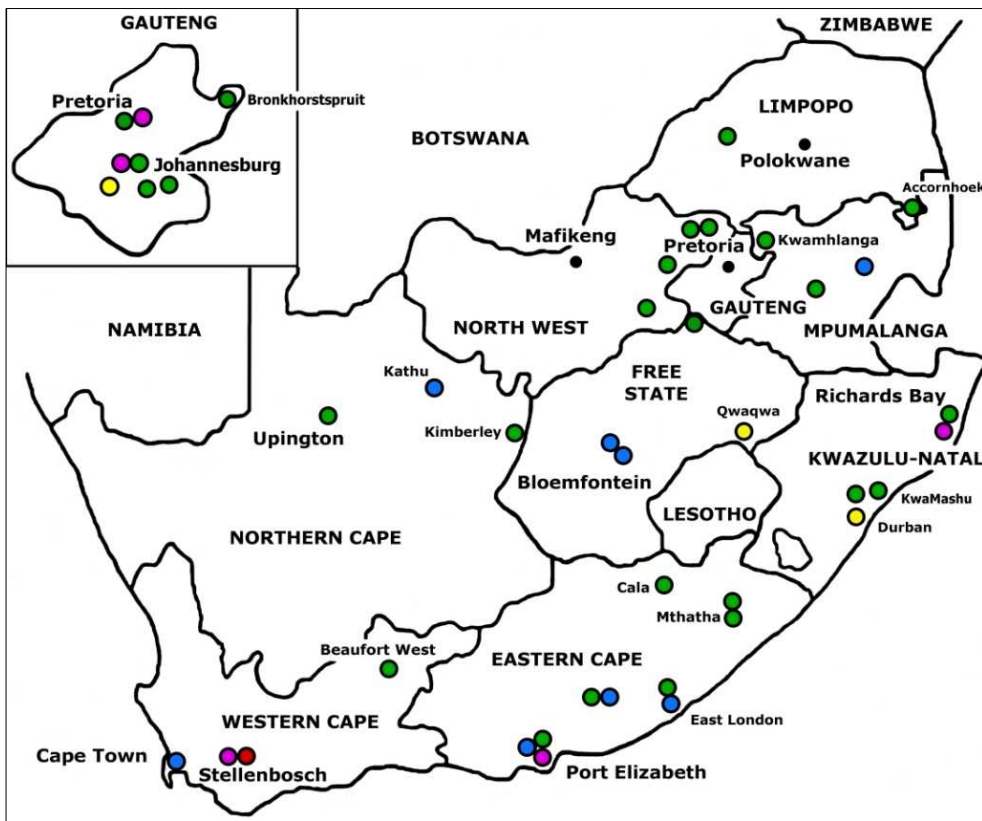
TRAC ANNUAL REPORT SUMMARY 2009

TRAC RESULTS, EXPOSURES, STATISTICS & IMPACT

Some important statistics and noteworthy matters:

1. There is contact with all of the Provincial Education departments.
2. The newly appointed Minister of Basic Education Ms Angie Motshehga is fully aware of TRAC and in fact she inaugurated the Observatory TRAC Centre. At the time she declared that a TRAC Centre was needed at Sci-bona Science Centre. It has come to fruition as the Gautrain TRAC lab!
3. Cooperation with the National Department of Education had unfortunately not evolved as hoped. Hopefully the HRDSA initiative under the Dept of Higher Education with the Minister, Dr Blade Nzimande will yield some results.
4. Updated TRAC statistics are discussed hereinafter.

DISTRIBUTION BEGINNING 2010



	CENTRE DESCRIPTION
	TRAC Head Office
	TRAC Regional Laboratory
	TRAC Satellite Laboratory
	Independent Laboratory
	TRAC Mobile Laboratory

During 2009 the following TRAC laboratories came into operation:

FIXED LABORATORIES:

- Gautrain Sci-Bono Fixed Laboratory
- UKZN Fixed Laboratory

MOBILE LABORATORIES:

- CSIR Atteridgeville Mobile Laboratory
- Grundfos Bronkhorstspuit Mobile Laboratory
- Group Five Acornhoek / Bushbuckridge Mobile Laboratory
- TWO Transnet Foundation Makapanstad Mobile Laboratories
- BRC Sasolburg Mobile Laboratory

The TRAC FS regional laboratory in Bloemfontein decided to break ties with TRAC SA to follow its own strategy as a region. It is therefore no longer part of the national TRAC program. In 2008 TRAC boasted 13 mobile laboratories, that grew to a total of 19 mobile laboratories in 2009. The total number of TRAC fixed laboratories at the end of 2009, was 8. A further 6 mobile laboratories are to become operational early in 2010. These are:

- Joy Mining Machinery Ogies Mobile Laboratory
- Murray & Roberts Lephalale Mobile Laboratory
- Group Five Projects Vosloorus Mobile Laboratory
- NWU / AngloGold Ashanti Potchefstroom Mobile Laboratory
- Altech Tembisa Mobile Laboratory
- Altech Mount Edgecombe Mobile Laboratory

International Ferro Metals Limited took over funding of the Brits Mobile Laboratory from Aveng for a period of 3 years, commencing January 2010.

Province	# Fixed Labs per Prov	# Mobile Labs per Prov	# Pending Mobiles per Prov	Fixed Lab Location	Name of Financial Partner	Mobile Lab Location	Name of Financial Partner	Pending Mobile Lab Location	Name of Potential Financial Partner
WC	1	1	8	Stellenbosch	ACSA	Beaufort West	None (Part-Time)	8 Education Districts	WCED
NC	0	2	0			Upington	None		
						Kimberley	None		
MP	0	3	0			Kwamhlanga	Nedbank Foundation		
						Ogies	Joy Mining Machinery		
						Accornhoek	Group Five		
GNS	2	3	1	Sci-Bono	Gautrain	Alexandra	WBHO	Tembisa	AIDC
				Observatory	Murray & Roberts	Vosloorus	Group Five Projects		
						Tembisa	Altech		
NW	0	4	?			Brits	IFM		
						Potchefstroom	AngloGold Ashanti		
						Makapanstad I	Transnet Foundation		
						Makapanstad II	Transnet Foundation		
FS	0	1	0			Sasolburg	Vaal Education Trust		
GNN	1	2	0	Pretoria	Gautrain	Bronkhorstspuit	Grundfos		
						Atteridgeville	CSIR		
KZN	2	3	1	Richards Bay	Murray & Roberts	Empangeni	Murray & Roberts	KwaMashu	African Bank
				UKZN	NDoT	Mount Edgecombe	Altech		
						KwaMashu	Ilembe Consortium		
LP	0	1	0			Lephalale	Murray & Roberts		
EC	1	6	0	P Elizabeth	Murray & Roberts	Cala	DoRT (EC)		
						Mdantsane	DoRT (EC)		
						Mthatha	Coega		
						Uitenhage	Coega		
						Fort Hare	Coega		
		Mthatha	WSU						
TOT	7	26	10						

FINANCES

	2007	2008	2009
Gross funding available	R 7.264m	R 10.743m	*R 21.209m
Expenditure	R 6.471m	R 9.418m	R 10.442m
Total exposures	124 958	173 320	269 566
Cost per exposure	R 51.79	R 54.34	R 38.74
* Includes advance payments received from sponsors for 2011 and 2012			

EXPOSURE STATISTICS.

Exposure Statistics	2005	2006	2007	2008	2009
Learner Exposures at Fixed Labs	9 866	19 959	40 921	61 099	68936
Bridging Program Students - Fixed Labs	2 811	2 512	1 593	1 364	382
Learner Exposures through Mobile Labs	4 075	20 674	55 612	95 690	191693
Learner Exposures at TRAC schools	7 723	12 383	9 171	3 387	3364
Learner Exposures - Informal Contacts	4 663	14 414	14 848	8 694	1599
Teacher Training	292	1 433	2 813	3 086	3592
TOTAL	26 619	68 863	124 958	173 320	269 566

ACADEMIC STATISTICS

The national Physical Science performance remains a matter of great concern. The percentage pass rate dropped from 54.9% to 36.83% from 2008 to 2009—a decrease of an astounding 18.07%. The performance of TRAC schools were slightly better than the national performance, in so much that the TRAC national average showed a lesser decrease in percentage pass rate of 15.1% - from 52.96% to 37.87% between 2008 and 2009.

Of special note is that the three mobiles operational in Mpumalanga had on average a decline of only 4.5% in pass rate, whereas the provincial pass rate in this province declined by 19.42%.

It is important to distinguish between fixed and mobile laboratories when comparing academic performance, as the factors impacting on repeated learner visitation due to transportation constraints, are experienced by our fixed laboratories. The following laboratories performed the best when considering academic performance as a gauge:

MOBILE LABS	Change in % pass rate	Provincial change in % pass rate
Grundfos Bronkhorstspuit	8.85	-19.42
Murray & Roberts Richards Bay	7.83	-12.69
Group Five Bushbuckridge	-1.73	-19.42
Coega Uitenhage	-4.5	-14.80

FIXED LABS	Change in % pass rate	Provincial change in % pass rate
Murray & Roberts Observatory	-0.92	-22.48
Gautrain Sci-Bono	-1.95	-22.48

SET STATISTICS

The grade 12 physical science learners were approached by TRAC during their final term at school in 2009, in order to determine their choice of tertiary study. The study was conducted in **198** schools, where TRAC is currently operational.

A total of **510** TRAC learners are currently registered in a SET study course in a tertiary institution in SA. A total of **104** learners are registered for a B Eng degree, whilst **111** are registered for a B Sc degree. Students that are enrolled for a B Tech degree, amount to **21**. A total of **179** students have registered for a SET related national diploma. A total of 73 students are enrolled for other SET study courses. What continues to be an aspect of worry, is that only **23** are going to venture into a career in physical science or mathematics education. This is a mere **4.5%** of the total learners who took part in the study. What is a joy, is that **20** learners obtained entry into tertiary institutions to study towards becoming a medical doctor. A mere **4** learners are registered for courses to complete an artisanship Of note are the number of registered students from the Murray & Roberts NMMU laboratory in Port Elizabeth—**144**. The TRAC EC region managed to obtain the highest number of SET students of all TRAC regions, being **229**, which is an average of **38.2** per TRAC point. Well done to TRAC EC!

BURSARY ASSISTANCE PROGRAM

TRAC is proud to relate that **197** suitably qualified TRAC learners were placed on our bursary assistance database during 2009 (**71** in 2008). The database was circulated to tertiary institutions and companies.

	Learners on# of TRAC database 2008	on# of TRAC points	Average per TRAC point	Learners on# of TRAC database 2009	on# of TRAC points	Average per TRAC point	Increase
Eastern Cape	25	6	4.17	43	6	7.17	72%
Free State	3	1	3.00	19	2	9.50	533%
Gauteng	18	3	6.00	50	6	8.33	178%
KwaZulu-Natal	12	3	4.00	23	4	5.75	92%
Mpumalanga	0	1	-	6	2	3.00	
Northern Cape	9	2	4.50	16	2	8.00	78%
North-West	0	1	-	11	3	3.67	
Western Cape	4	2	2.00	29	2	14.50	625%
TOTAL	71	19	3.74	197	27	7.30	177%

As it is the mission of TRAC to enable and encourage learners to follow careers in Science, Engineering and Technology, it was rewarding to report that **68** learners managed to obtain bursaries for SET studies in 2010 through the assistance of TRAC. This constitutes **34.5 %** of the **197** learners. In 2008 only 8 learners from a possible 71 received bursaries (11.3%). Below is a breakdown of the number of bursaries obtained by learners per TRAC region. It is of note that the TRAC EC region managed to assist the highest number of learners in obtaining bursaries for SET studies, being **30**. The Murray & Roberts TRAC Lab at NMMU in Port Elizabeth managed **12** bursaries, the Aveng TRAC Mobile Lab in Brits, **10** and the Transnet foundation TRAC Lab #2 in Makapanstad, attained **9**.

TRAC Region	Number of Bursaries
TRAC WC	5
TRAC NC	3
TRAC KZN	4
TRAC GNN	2
TRAC GNS	24
TRAC EC	30
TRAC TOTAL	68