



CHET

CENTRE FOR HIGHER EDUCATION TRANSFORMATION

University Oslo Visiting UWC Co-operation and Statistics

Nico Cloete

DST-NRF CENTRE OF EXCELLENCE
SCIENTOMETRICS AND STI POLICY



UWC Institute of Post-School Studies

Higher Education Research and Advocacy Network in Africa (HERANA)



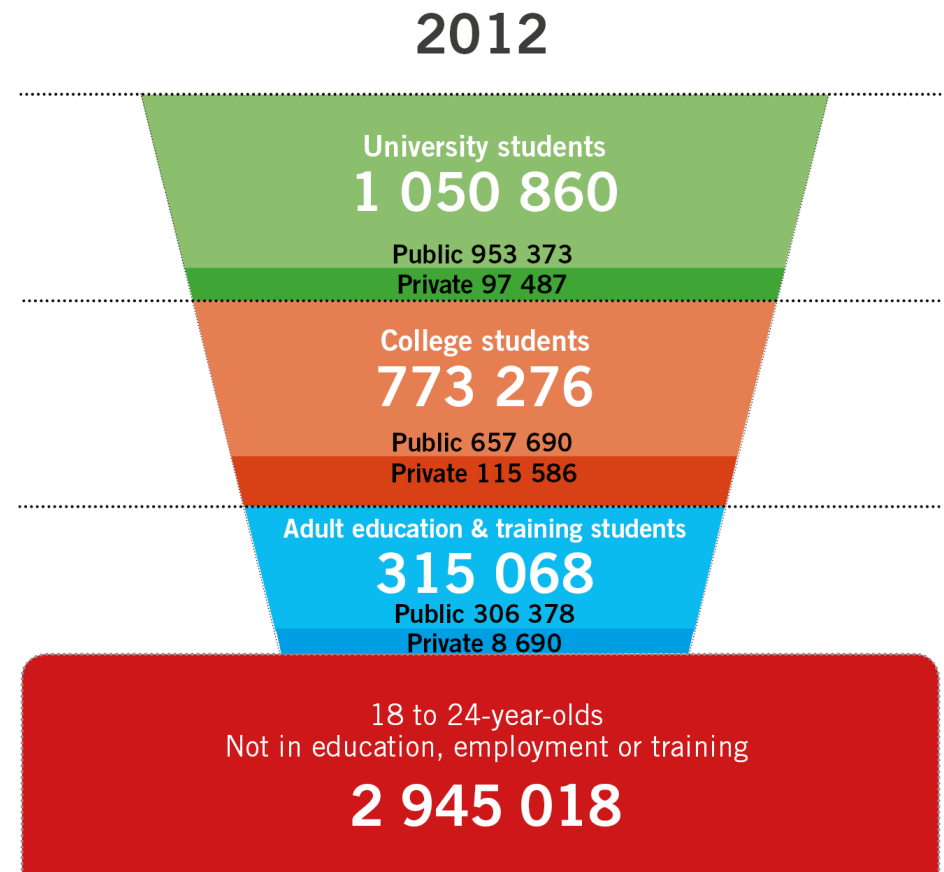
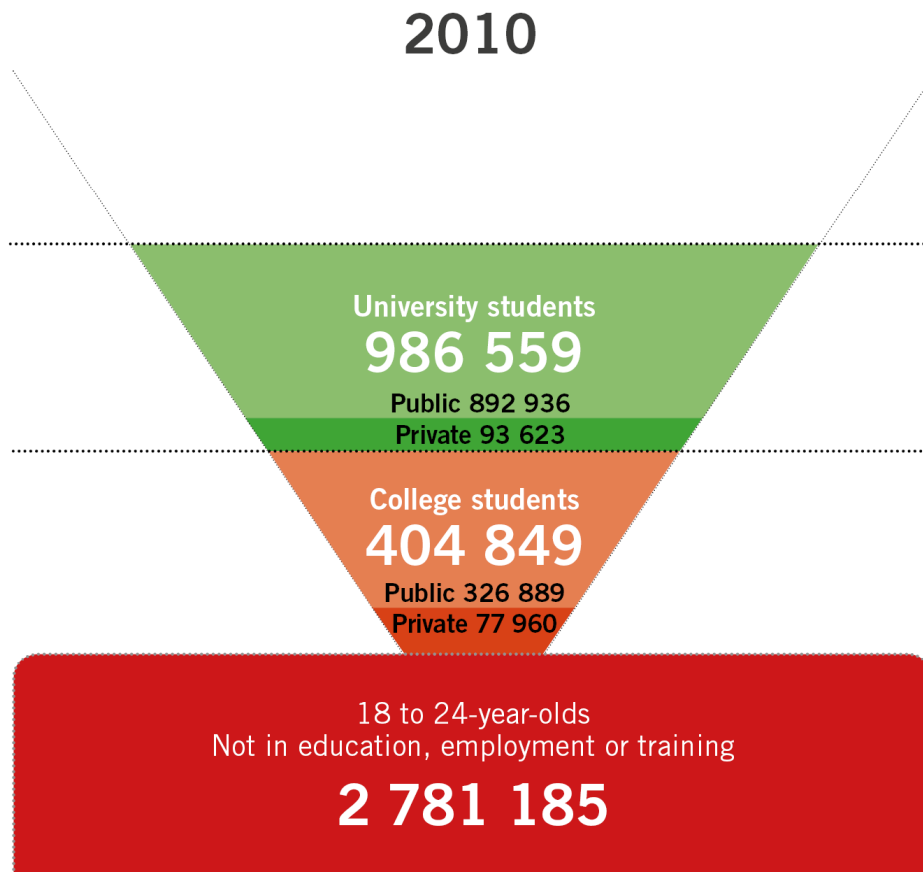
- Network of 50 participating academics and senior administrators (mainly planners) in 12 countries in 7th year
- Coordinated by Chet, UWC Higher Education Studies and Univ Oslo Education
- Participating African Countries and “Flagship” Universities
 - Botswana – University of Botswana
 - Ghana – University of Ghana
 - Kenya – University of Nairobi
 - Mauritius – University of Mauritius
 - Mozambique – Eduardo Mondlane
 - South Africa – UCT
 - Tanzania – University of Dar es Salaam
 - Uganda – Makerere University
- Produced two major books:
 - *Higher Education and Development in Africa (2011)*
 - *Knowledge Production and Contradictory Functions in African HE (2015)*

1. Research universities in low- and middle-income countries have crucial roles to play in developing differentiated and effective academic systems, and in making it possible for their countries to join the global knowledge society and compete in sophisticated knowledge economies
2. A research university is not an ivory tower and is relevant to the wider community; much of its research is carried out in collaboration, with funding and sponsorship from non-university sources.
3. Research universities are committed to the creation and dissemination of knowledge, in a range of disciplines and fields, and featuring the appropriate laboratories, libraries, and other infrastructures that permit teaching and research at the highest possible level
4. **Understanding the characteristics of the research university** and building the infrastructures and the intellectual environment needed for successful research universities is a top priority

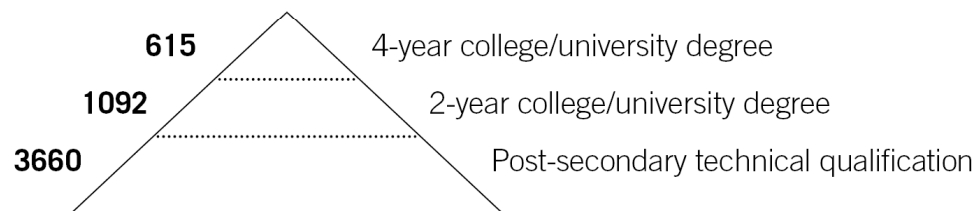
Altbach: 2013. The role of research universities in developing countries. *Studies in Higher Education*. 38(3): 316-330

Cloete 2014: (2014) The South African higher education system: Performance and policy. *Studies in Higher Education*, 39 (8): 1355-1368

The South African Post-school System 2010 vs 2012

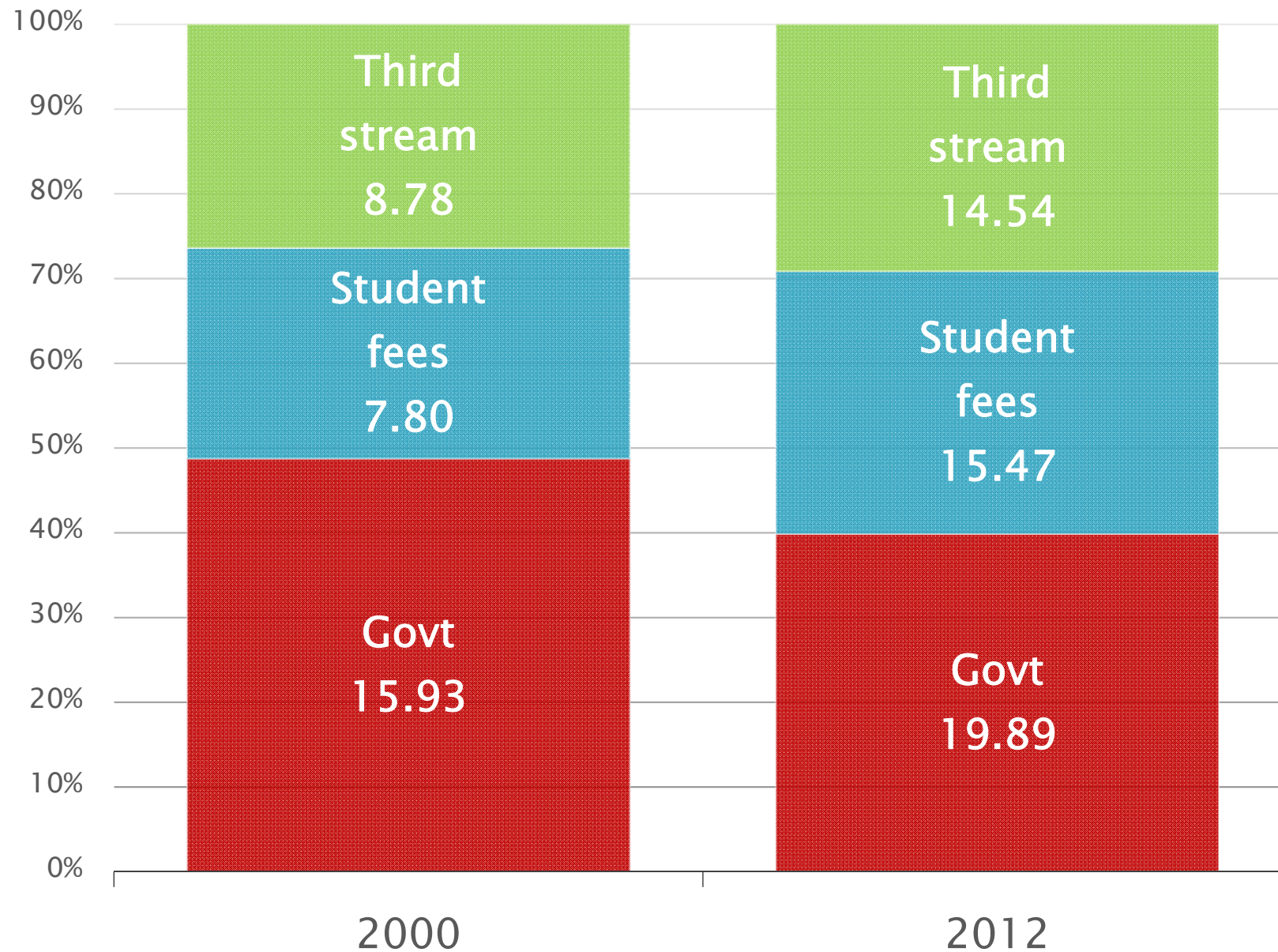


Shape of the US public post-secondary system
2009, number of institutions

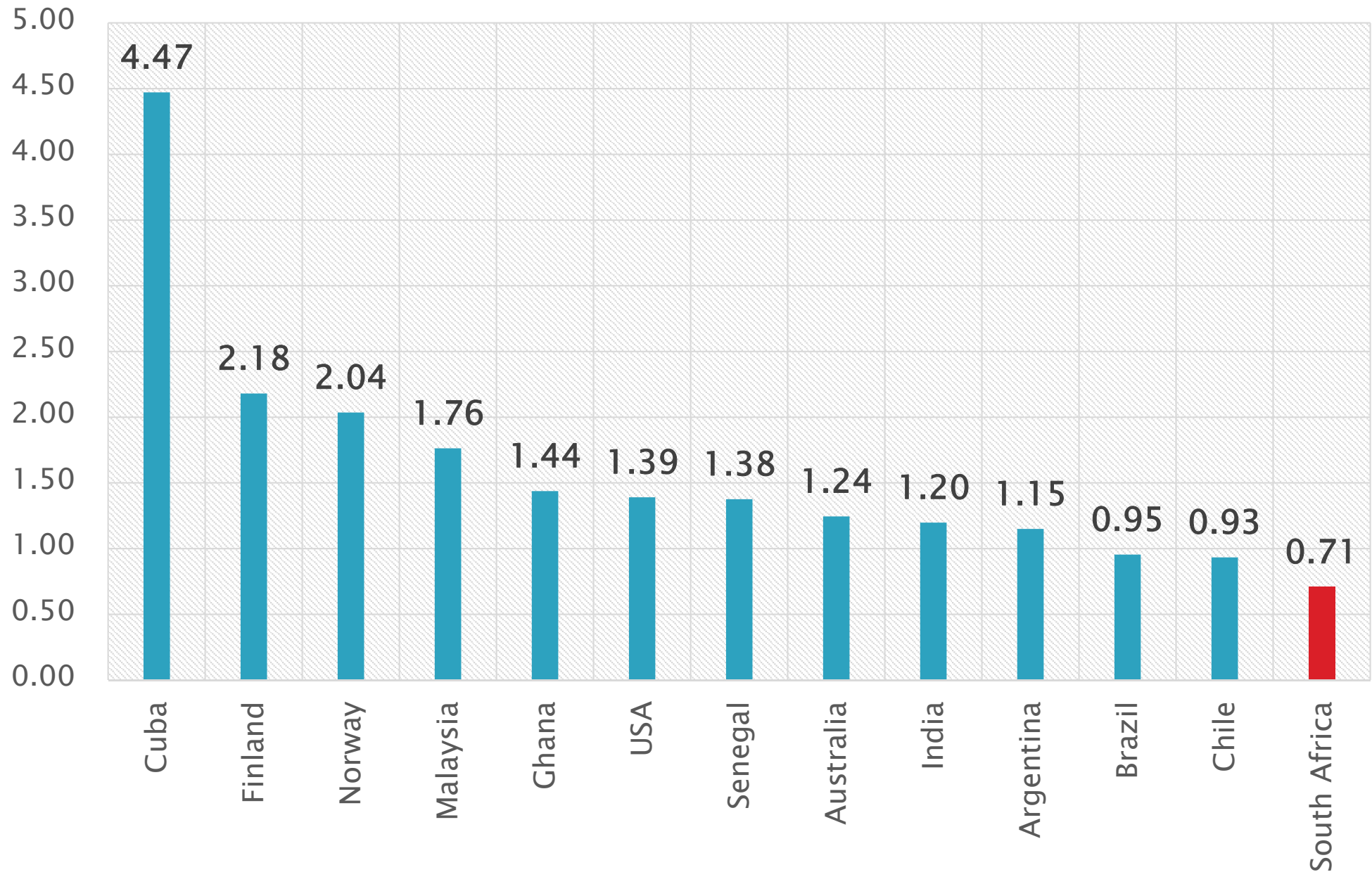


Higher education income sources, ZAR (billion)

(Source: DHET, Financial Statements in Annual reports submitted by Universities)



Expenditure on higher education as % of GDP, 2012



SA HE System: Diagnosis of National Planning Commission (2011)



From numerous reviews (World Bank; Harvard; WEF)

1. low participation and high attrition rates
2. medium knowledge producing
3. insufficient capacity for adequate skills production
4. differentiated (but not a formal policy)
5. minority (± 5) of 'chronic crisis' institutions (gives HE bad press)

Shift from Equity to Development, and the Return of Equity (Transformation Oversight Committee, 2013)

SA continually paralysed by inability to prioritize between competing interest group (not the NPC)



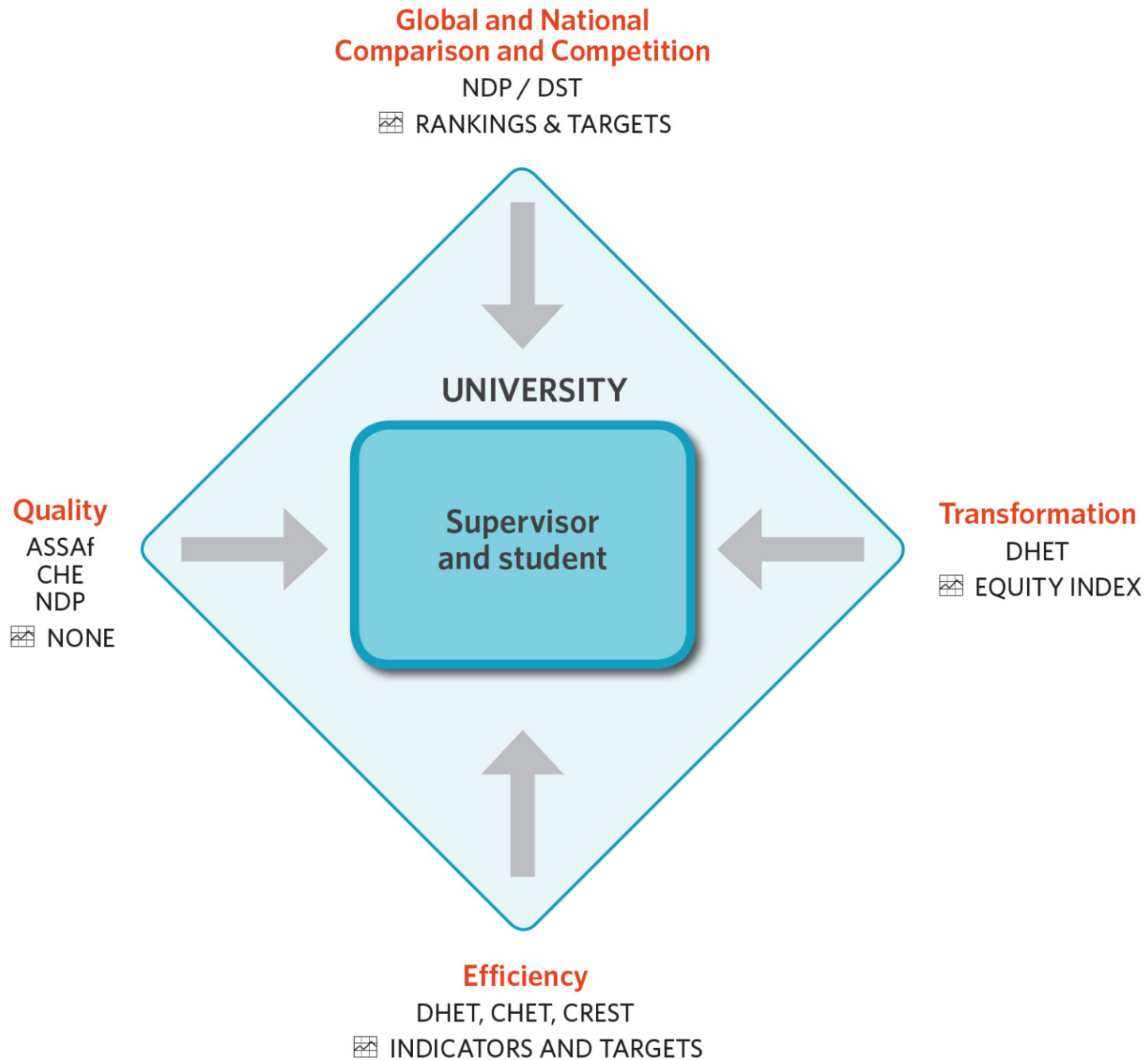
More PhDs

1. Castells – the university as engine of development in the knowledge economy (1991 Kuala Lumpur, World Bank; UWC 2001)
2. Knowledge more important than capital or materials
3. Talent, not capital is the primary source of competitive advantage
4. Unprecedented growth – China 50 000 pa, University Sao Paulo more than the whole SA system – traditional systems US, UK much slower
5. Number of doctorates far exceed number of places in US in 1970 50% of PhDs got tenure track position, by 2006 15% (100 000 new PhDs, 15 000 new academic jobs). In Germany only 6% aim for academic position.
6. What do they do – finance, research organisations, pastors
7. Silicon valley – innovation
8. Ms Zuma (AU commissioner, 2013) – Africa must produce ten's of thousands of PhDs – as long as they stay in SA.
9. Naledi Pandor DST Budget speech, July 2014 – SA must produce 6 000 per year and will ask government for R5billion
10. The PhD factories – is it time to stop? (Cyranski 2011 *Nature*)

Policy Goals: Differentiation

- From 1997 WP to DHET WP 2013 differentiation is accepted in principle and fudged in practice in terms of diversity vs differentiation and overt vs covert.
 - NDP: South Africa has a differentiated system of university education, but the system does not have the capacity to meet the needs of the country.
 - NDP Recommends:
 1. Improve the qualifications of HE academic staff from 34% to 75% (this is the number one recommendation).
 2. Produce more than 100 doctoral graduates per million by 2030.
 3. SA needs more than 5000 doctoral graduates per annum.
 4. Most of these doctorates should be in SET.
 5. Over 25% of university enrolments should be postgraduate.
 6. Strengthen universities that have an embedded culture of research.
 7. Performance-based grants to develop centres or networks of excellence.
- (p318-320)

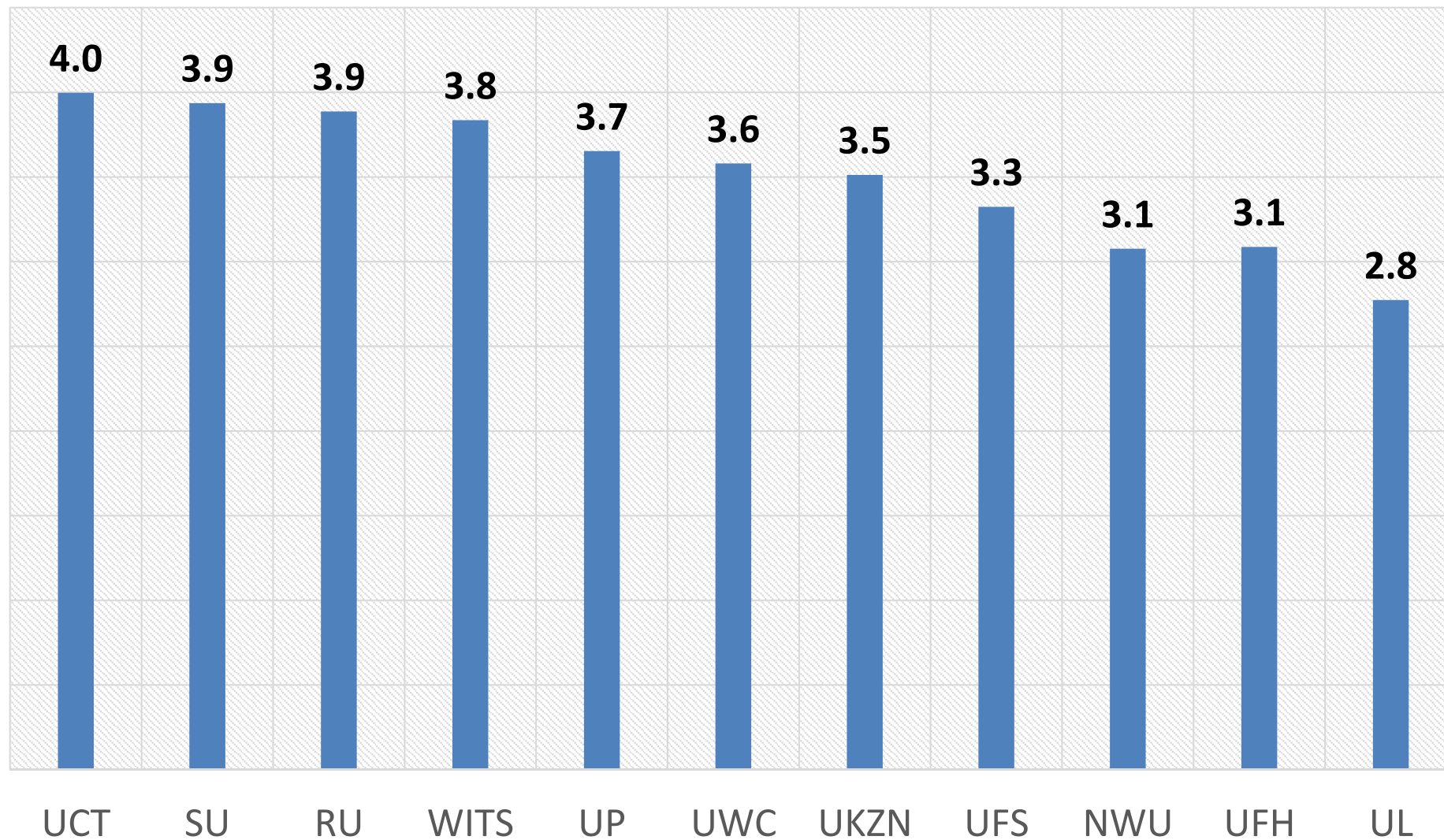
External/Policy pressures on doctorate production in SA



Possible university core goals and targets

Goal 1:	Strong enrolments in science and technology 40% headcounts and 50% Masters & Doctorates
Goal 2:	Strong doctoral enrolments 15% head count in Masters & Doctoral 3% in doctoral
Goal 3:	Favourable student to academic staff ratios SET 20:1 FTE: 25:1 other fields
Goal 4:	Experienced and well-qualified academic staff 50% academics PhD; 60% staff professor and senior lecturer
Goal 5:	High undergraduate pass rates 80% in SET; Average pass rate of 80%
Goal 6:	High outputs of total graduates and of graduates in SET fields 25% graduates of total enrol; 40% of total graduates
Goal 7:	High outputs of masters and doctoral graduates 25% of enrolments must graduate; 15% for doctorates
Goal 8:	High levels of new knowledge production by academic staff 1 research publication and 0.20 PhD graduates :per staff

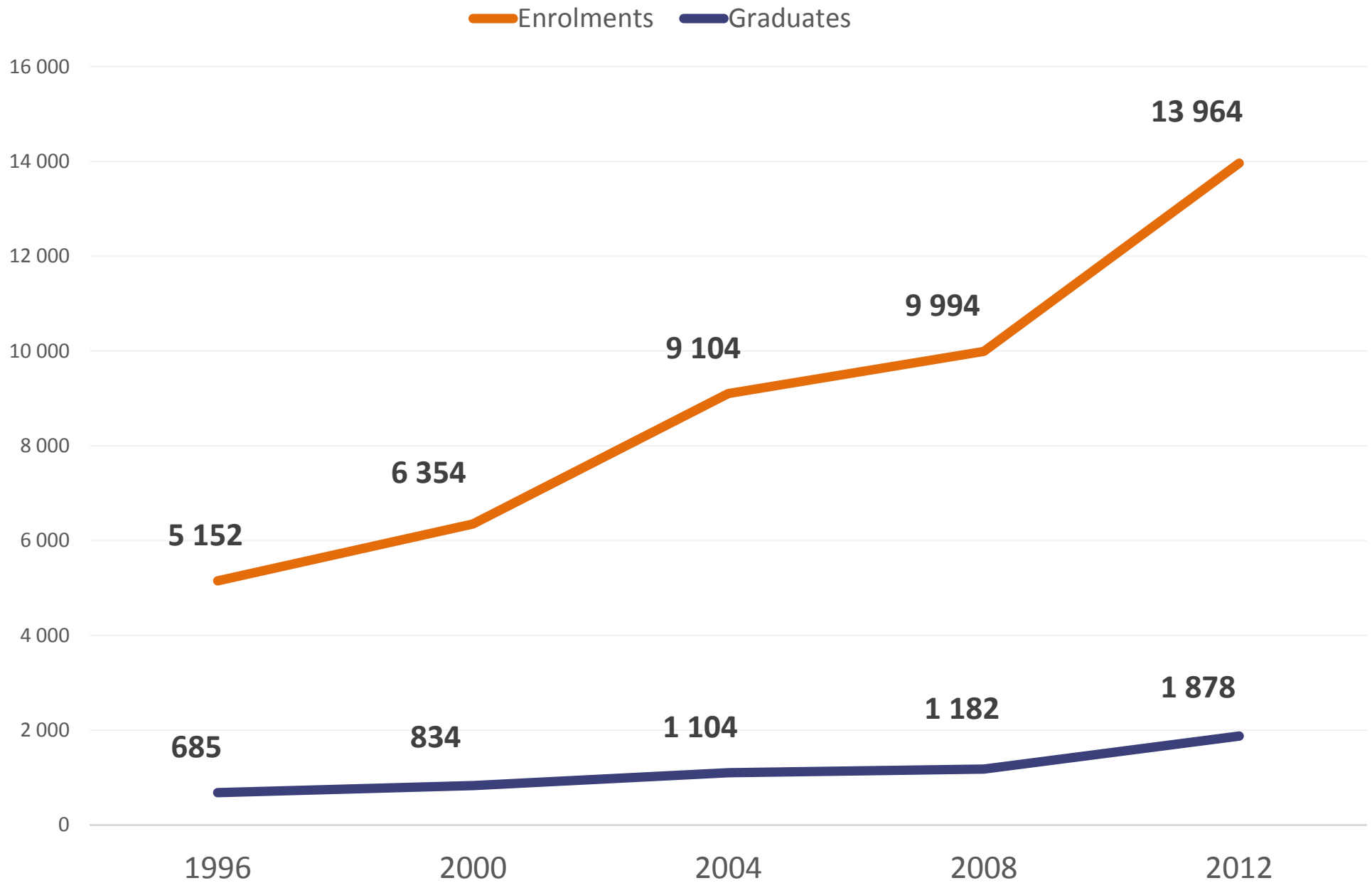
Differentiation based on performance indicators: Ranking universities on university goals & targets



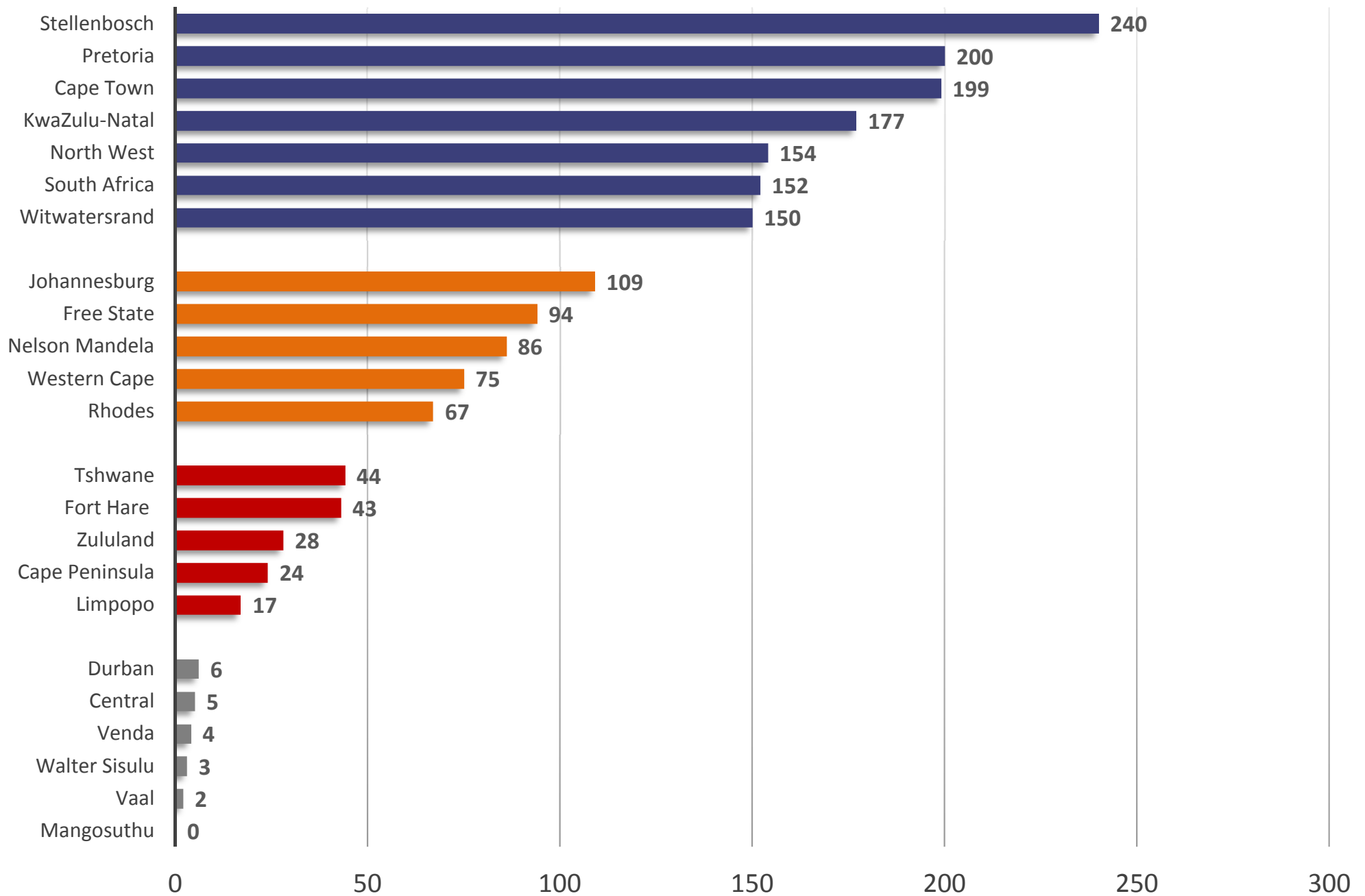
PhD production in SA vs a number of selected OECD countries, 2000 and 2011

Country	Average annual growth rate in total PhDs 2000 - 2011	Population 2011	2011 SET PhD graduates per 100,000 of 2011 population	2011 total PhD graduates per 100,000 of 2011 population
Australia	4.7%	22 324 000	15.9	27.2
Canada	3.3%	34 483 980	10.3	16.5
Czech Republic	9.6%	10 496 670	14.5	23.5
Finland	-0.2%	5 388 272	21.1	34.4
Germany	0.5%	81 797 670	24.2	33.4
Hungary	5.1%	9 971 726	6.5	12.4
Ireland	10.1%	4 576 748	20.3	31.6
Italy	11.1%	60 723 570	11.8	18.6
Korea	6.0%	49 779 440	14.0	23.4
Norway	6.4%	4 953 000	16.7	26.2
Portugal	3.5%	10 557 560	11.4	21.9
Slovak Republic	12.8%	5 398 384	16.1	31.0
Switzerland	2.2%	7 912 398	30.1	44.0
Turkey	7.4%	73 950 000	3.5	6.3
United Kingdom	5.1%	61 761 000	19.5	32.5
United States	4.5%	311 591 900	13.0	23.4
South Africa	4.5%	51 770 560	1.6	3.0

Comparison of enrolments and graduates, 1996 to 2012



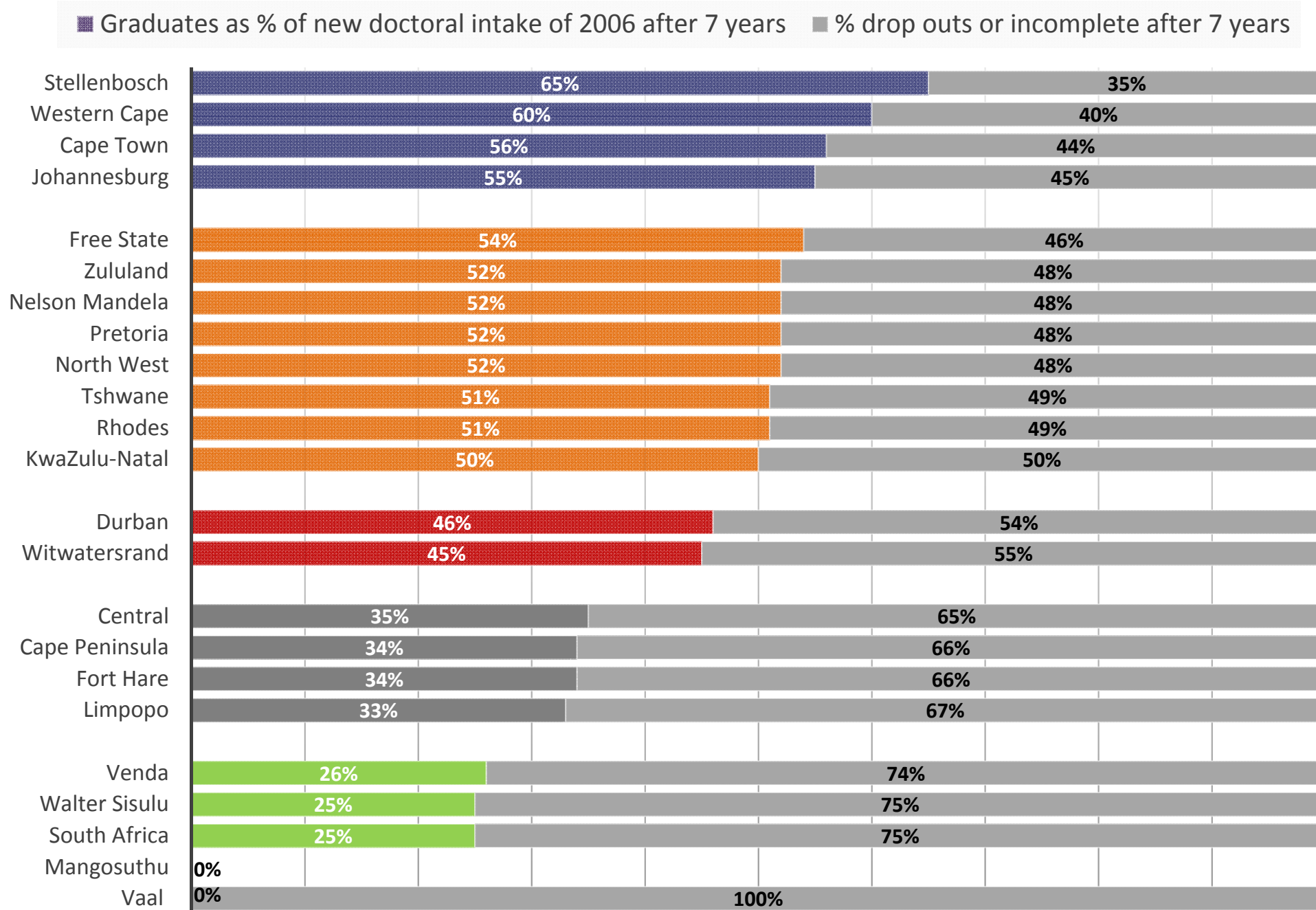
Doctoral graduates produced by universities in 2012



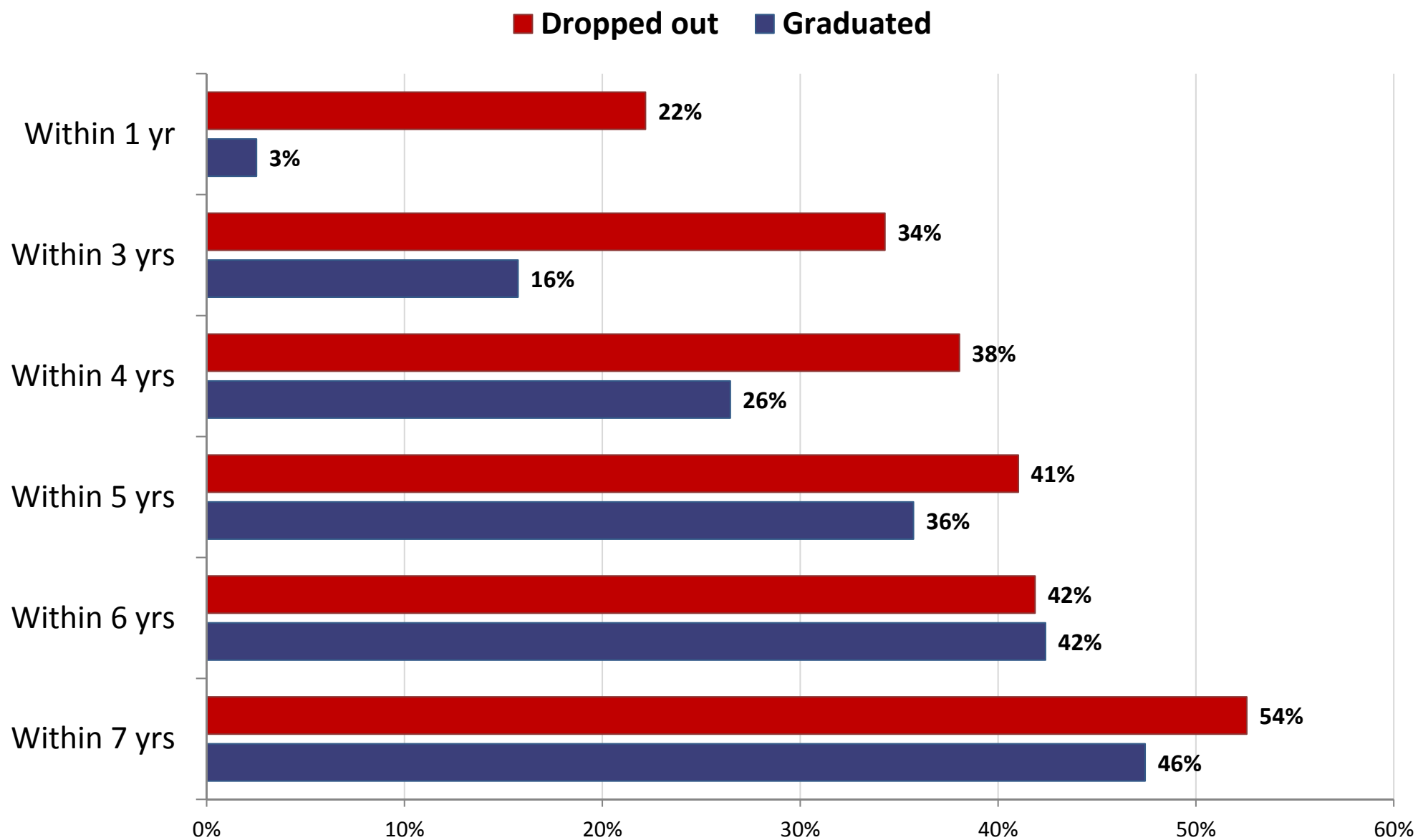
Average Annual PhD Graduate Growth Rates (1996 to 2012)

	1996	2000	2004	2008	2012	Average annual growth rate (1996-2012)
Universities						
Western Cape	6	20	23	42	75	17.1%
Limpopo	4	4	20	14	17	9.5%
North West	42	51	87	100	154	8.5%
Stellenbosch	68	83	115	120	240	8.2%
Cape Town	73	104	99	151	199	6.5%
KwaZulu-Natal	68	70	98	136	177	6.2%
Rhodes	27	28	40	27	67	5.8%
Witwatersrand	67	81	93	106	150	5.2%
Free State	46	59	58	55	94	4.6%
Pretoria	107	114	187	180	200	4.0%
Fort Hare	0	3	2	11	43	
TOTAL	508	617	822	942	1 416	6.6%

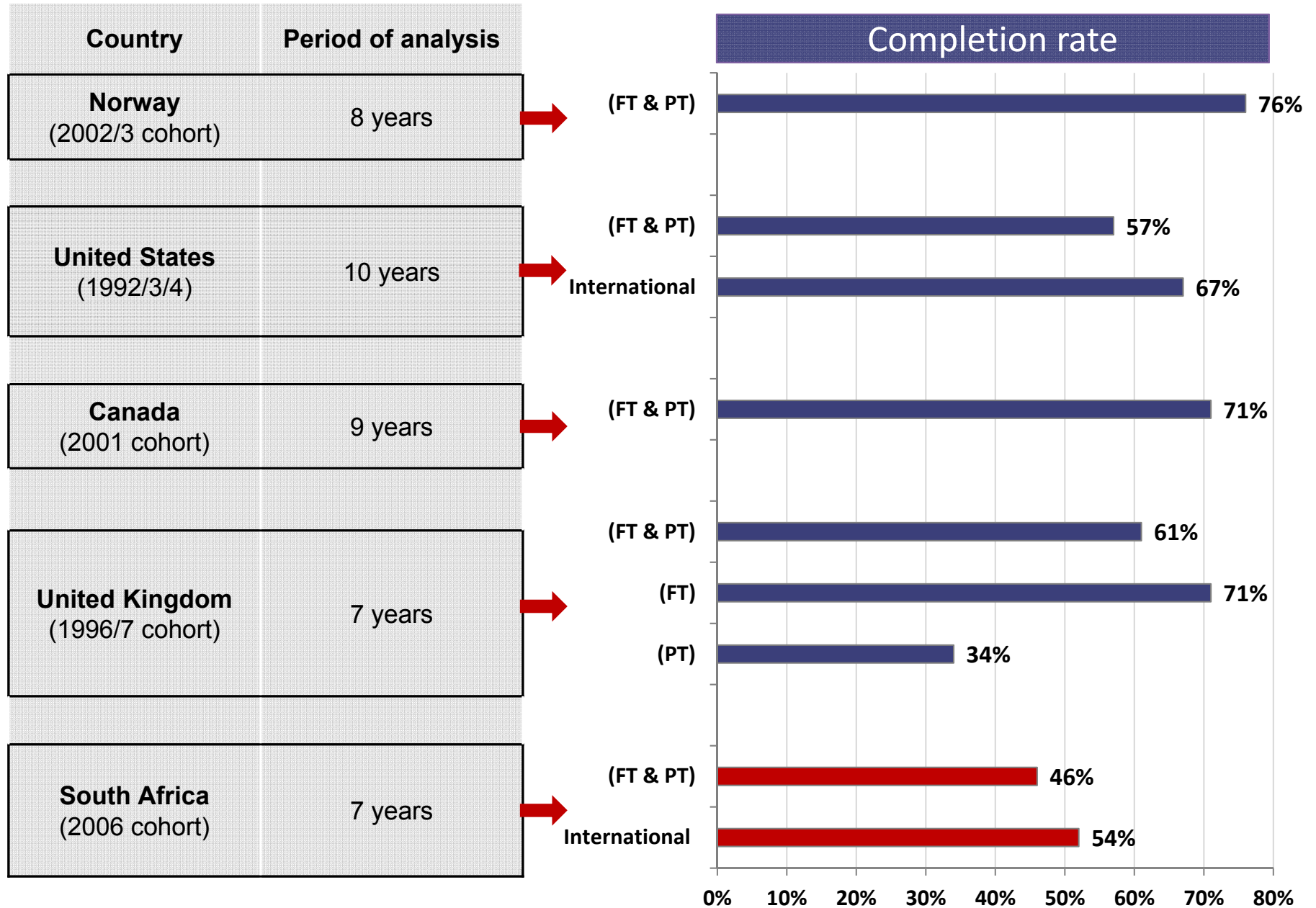
Progress of 2006 intakes of new doctoral students after 7 years by cluster



Drop-out and completion rates of the 2006 new entering doctoral cohort

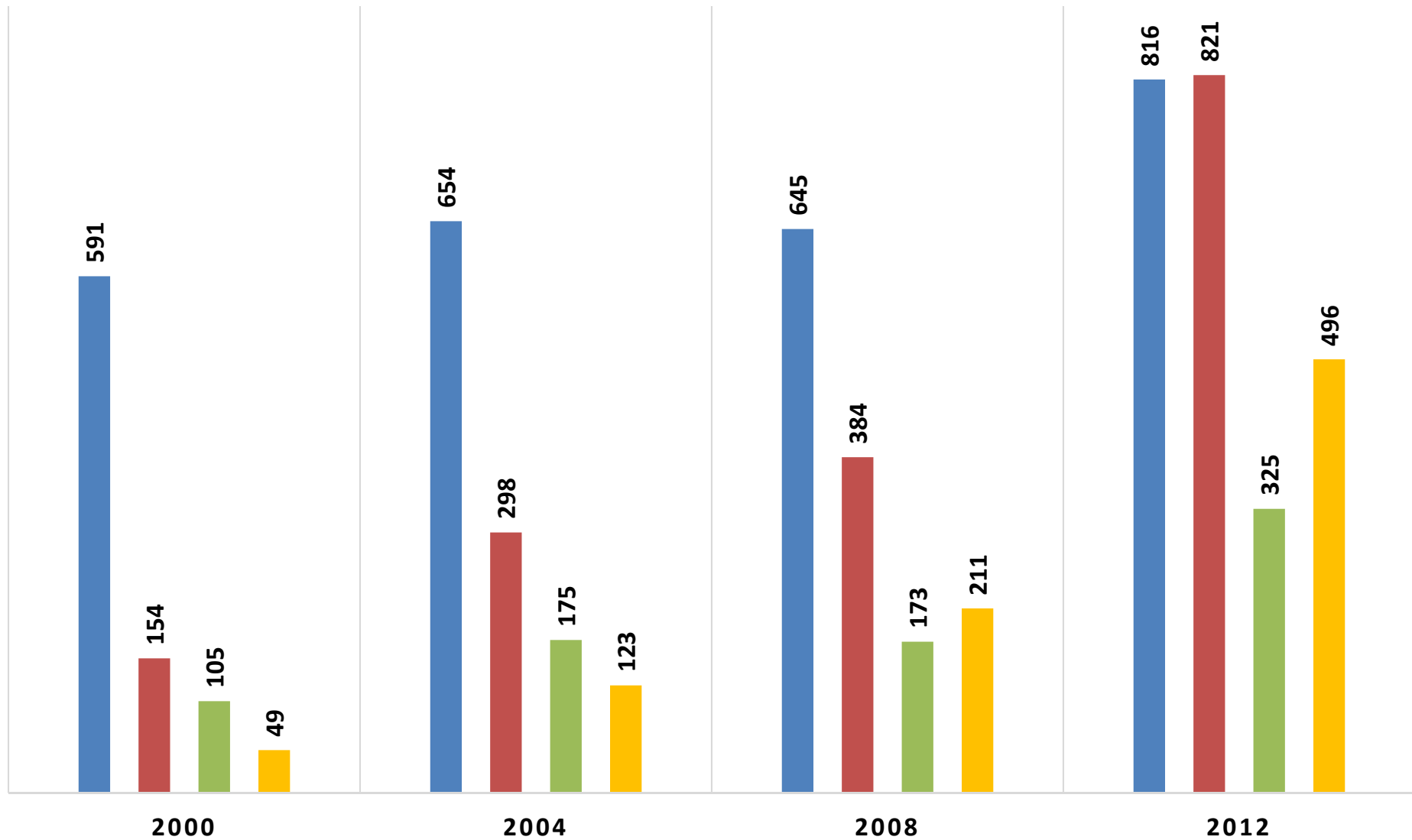


Comparison of international PhD completion rates

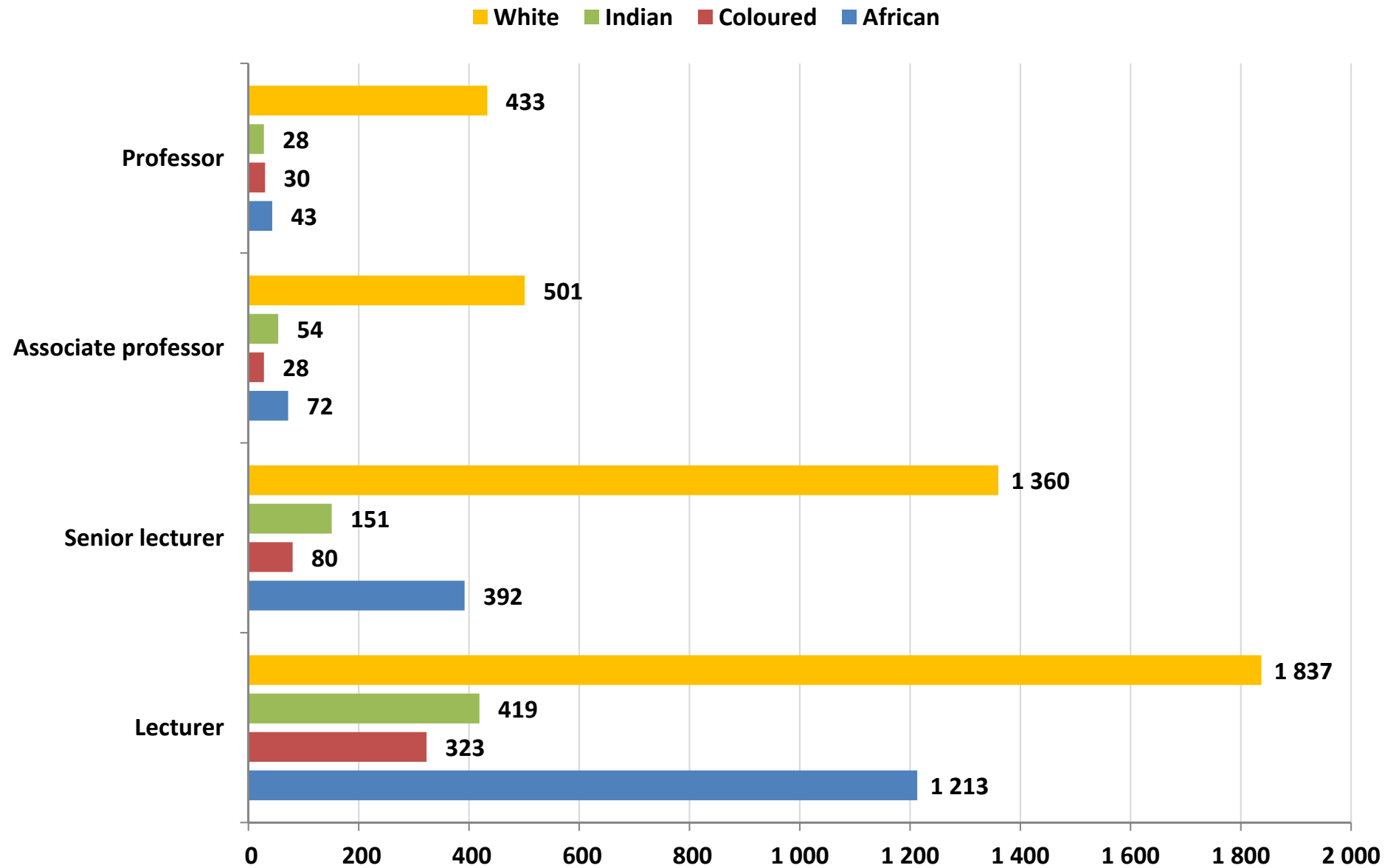


Increases in white and African PhD graduates (2000–2012)

■ Whites ■ Africans All ■ South African Africans ■ Rest of Africa Africans



Permanent academic female staff according to rank (lecturer to professor) (2012)



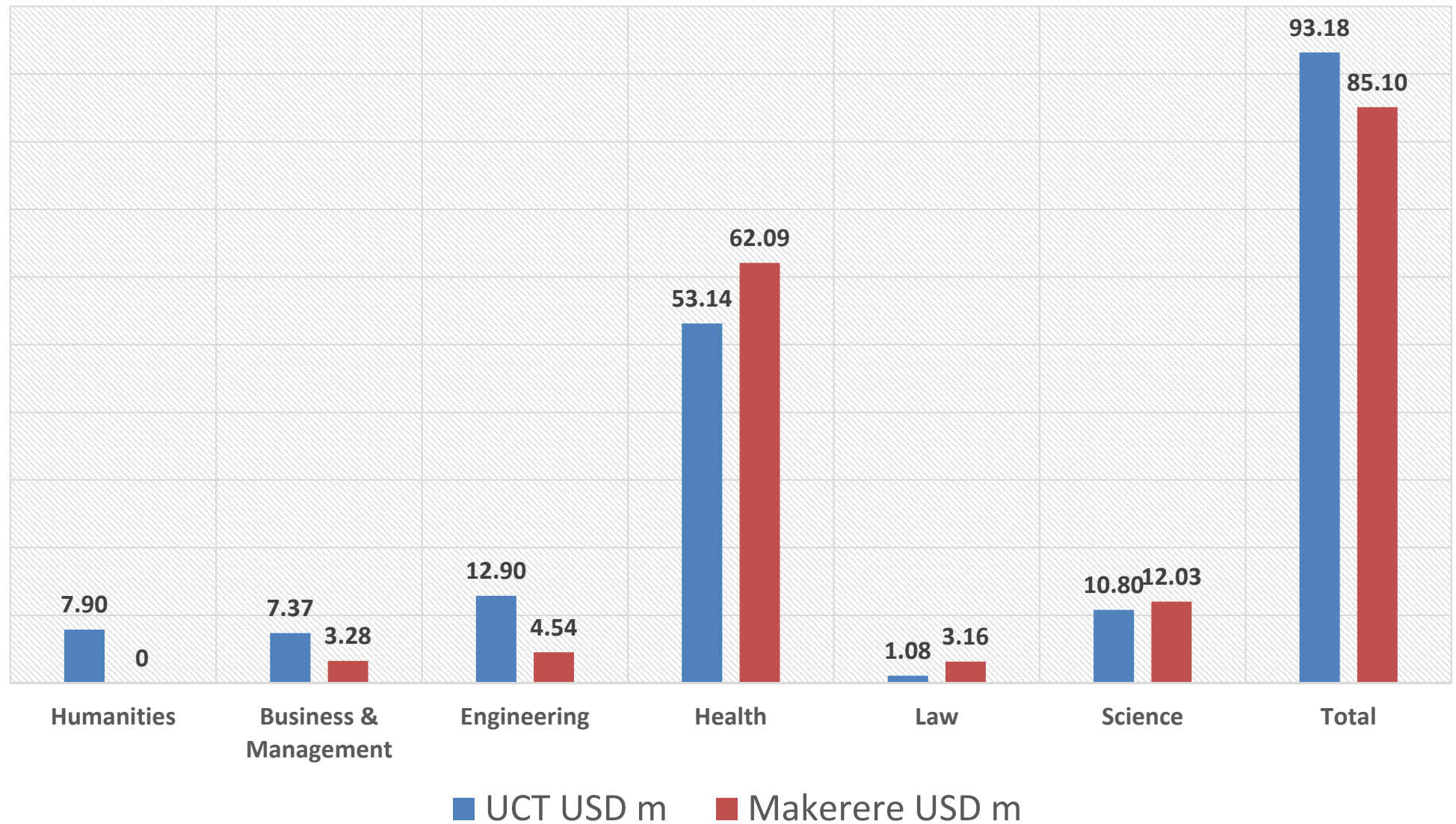
Qualitative Study on 25 Productive Departments (SSH)

- All departments are aiming to increase the number of doctoral graduates, but all with concerns for quality.
- The traditional research-based model to produce PhDs is still the dominant route
- Increasing numbers of PhD students, accompanied by more diversity among them, have been accompanied by changes in pedagogy - courses
- Departments in the last decade shifted towards greater management of doctoral education
- The greatest challenge that students face is in securing funding for their studies
- A number of departments have started to work with students before they formally register for a PhD
- The preparation of supervisors is increasingly formalised and Supervisors are more selective in accepting PhD students
- A number of departments have identified their research strengths or niche areas and are streaming PhD studies into that structure
- Most 'successful' model – UCT Economics – not a PhD model, a department model
- The question of “production” and “reproduction

Co-operation

- An extensive study of bilateral country investments and foundation partnerships to support higher education in Africa, Maassen and Cloete (2010) concluded that 'none of the donor countries involved subscribes to the knowledge economy (HE as engine of development) approach in their development cooperation policies with respect to higher education
- Funder contradictory intentions and practices - want impact, but organisational instability and lack of programmatic funding undermines impact – the link between development aid and foreign affairs a major problem
- HERANA, funded by Carnegie, Ford and Norad – only Carnegie remain – till 2016 which will have been 10 years
- A UWC graduate has initiated a new funding model. Three funders, R300million, projects defending the constitution and a SA Panel determines who gets the funding
- Collaborate with ONE university in the South or with themes or research areas?
- The successful cooperation I know started with cooperation before money came, money elaborated and strengthened it, it did not initiate it
- Do you need to put your eggs in one university basket?
- The **LADDER TO THE STARS** is very appropriate considering that SKA, by 2016 the biggest science project in the world will be in Cape Town with all 4 higher education institutions participating ! Frans van Vught may like this!

Research income by field (USD million, 2013)





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