SA's urban sustainability challenge

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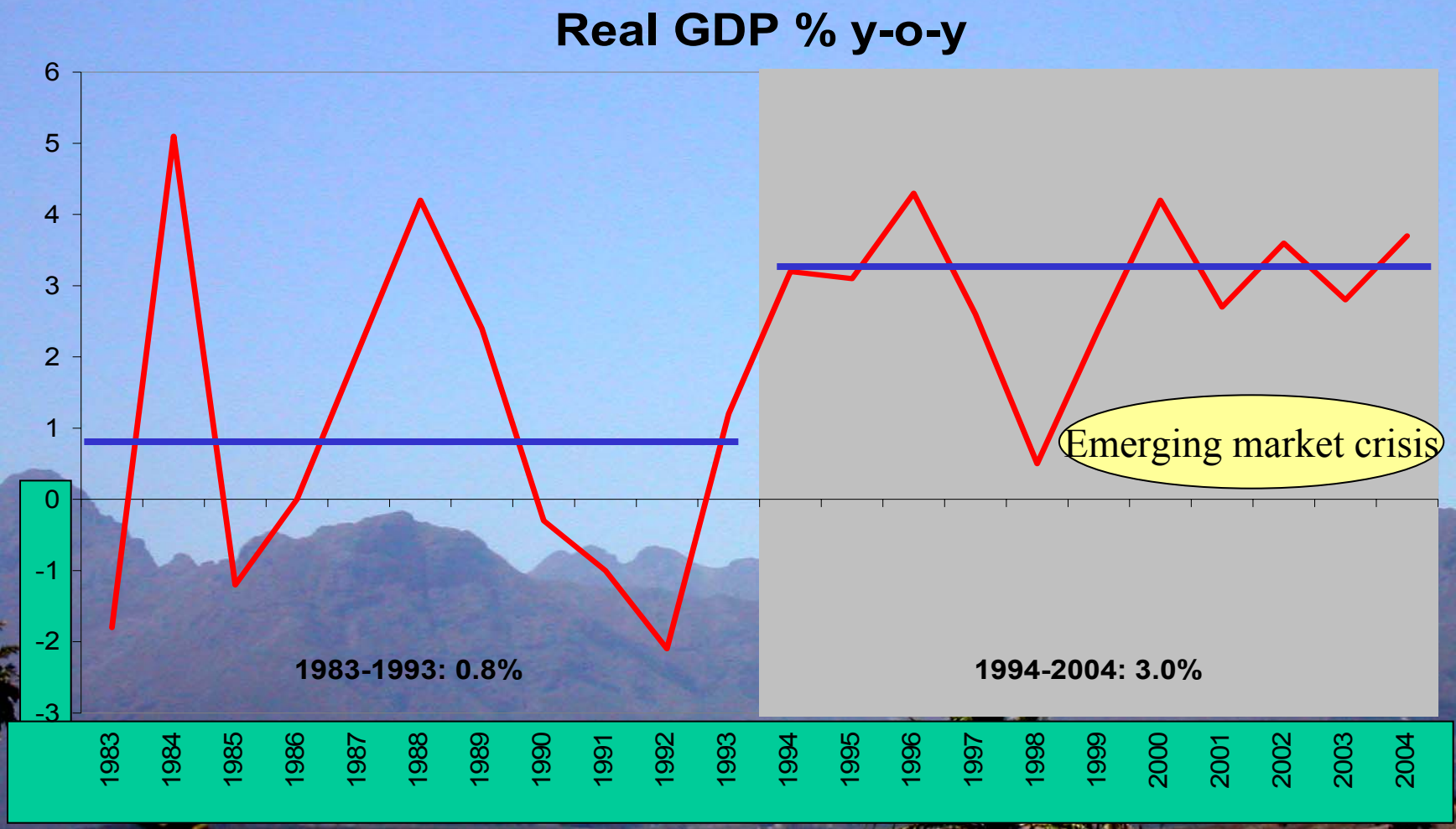
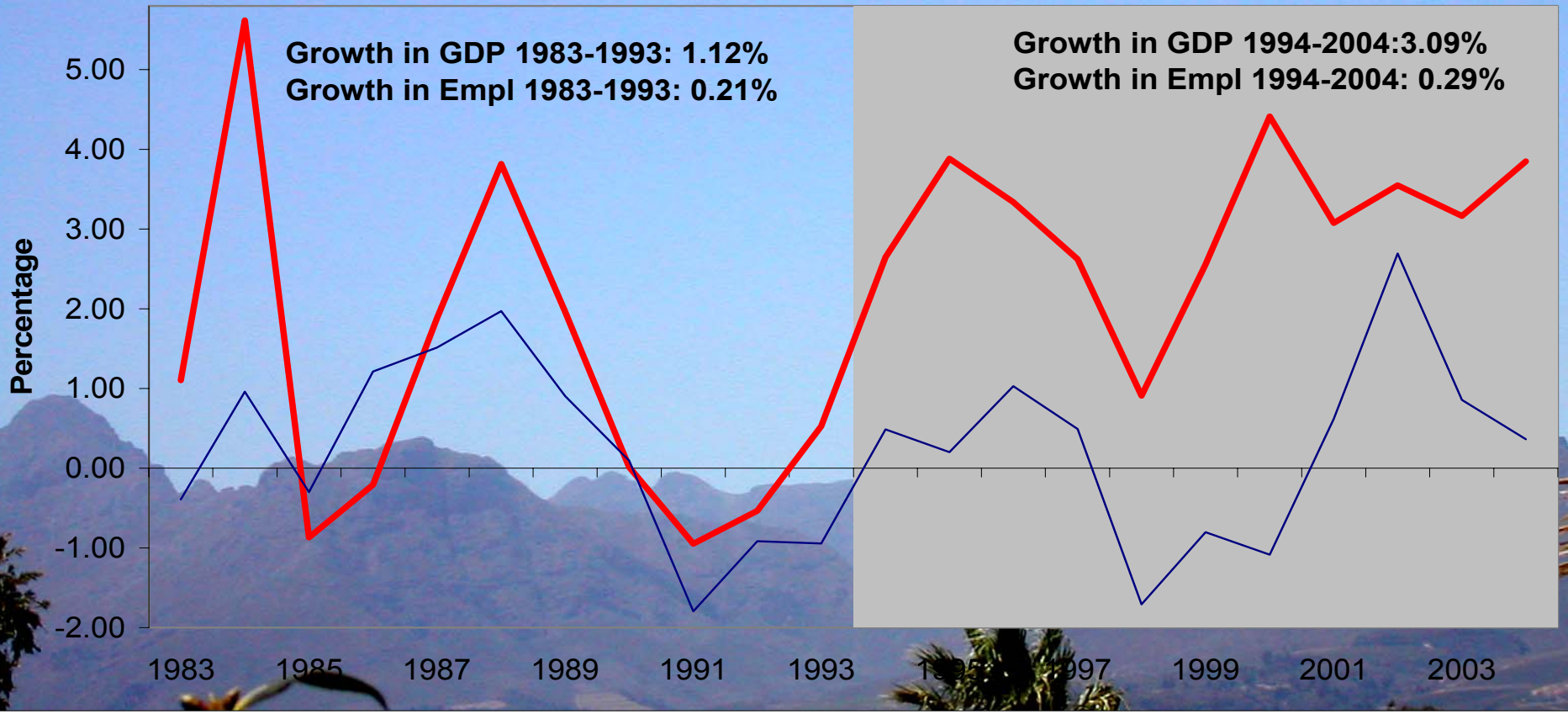
Material Economic Growth



GDP & Employment

Growth Rates (Non-Agricultural Sectors)



Trends & Forecasts

	1994-2004	2004-2014
GDP growth	3%	6-7%
Investment growth	5%	10%+
Job creation (p/yr)	200 000	500 000
Export growth	4,4%	10%
Inflation	7,3%	3-6%
Productivity improvement	2,8%	2-4%

How?

- Massive increases in public sector investment in fixed assets, in particular public infrastructures
- This will stimulate FDI and increased levels of private investment
- But what kind of infrastructure will be built? Who will spec it?

Official figs on poverty/inequality

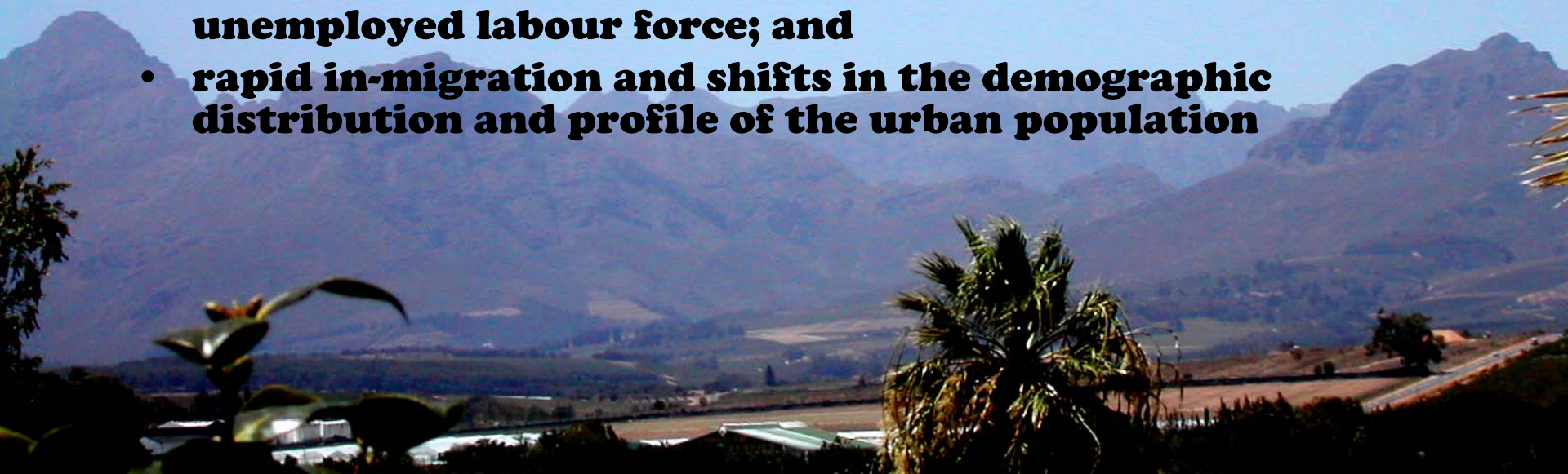
INDICATOR	2000	1995	MDG Target
Proportion of population living below international poverty line of US$1/day (or R87/month)*	11,3%	7,6%	*5.70%*
Proportion of population living below international poverty line of US$2/day (or R174/month)*	34,4%	30,9%	
Poverty gap at US$1/day*	0,031	0,018	
Poverty gap at US$2/day*	0,131	0,106	
Share of the poorest 20% in national consumption	2,8	3,4%	
Gini coefficient	0,59	0,59	

9 major cities

- 2 primary cities: sprawling polycentric Johannesburg-Pretoria metro complex (called Gauteng – a 'province') @ 14 m
- Durban metro complex @ 3,3 m
- Home to 37% of total pop of 44 m
- 4,6 m dwellings, 26% informal structures
- 38% of urban working pop unemployed – 1 m more unemployed in 2001 than 1996
- 7 secondary cities
- Hundreds of small towns/rural villages

Key social trends

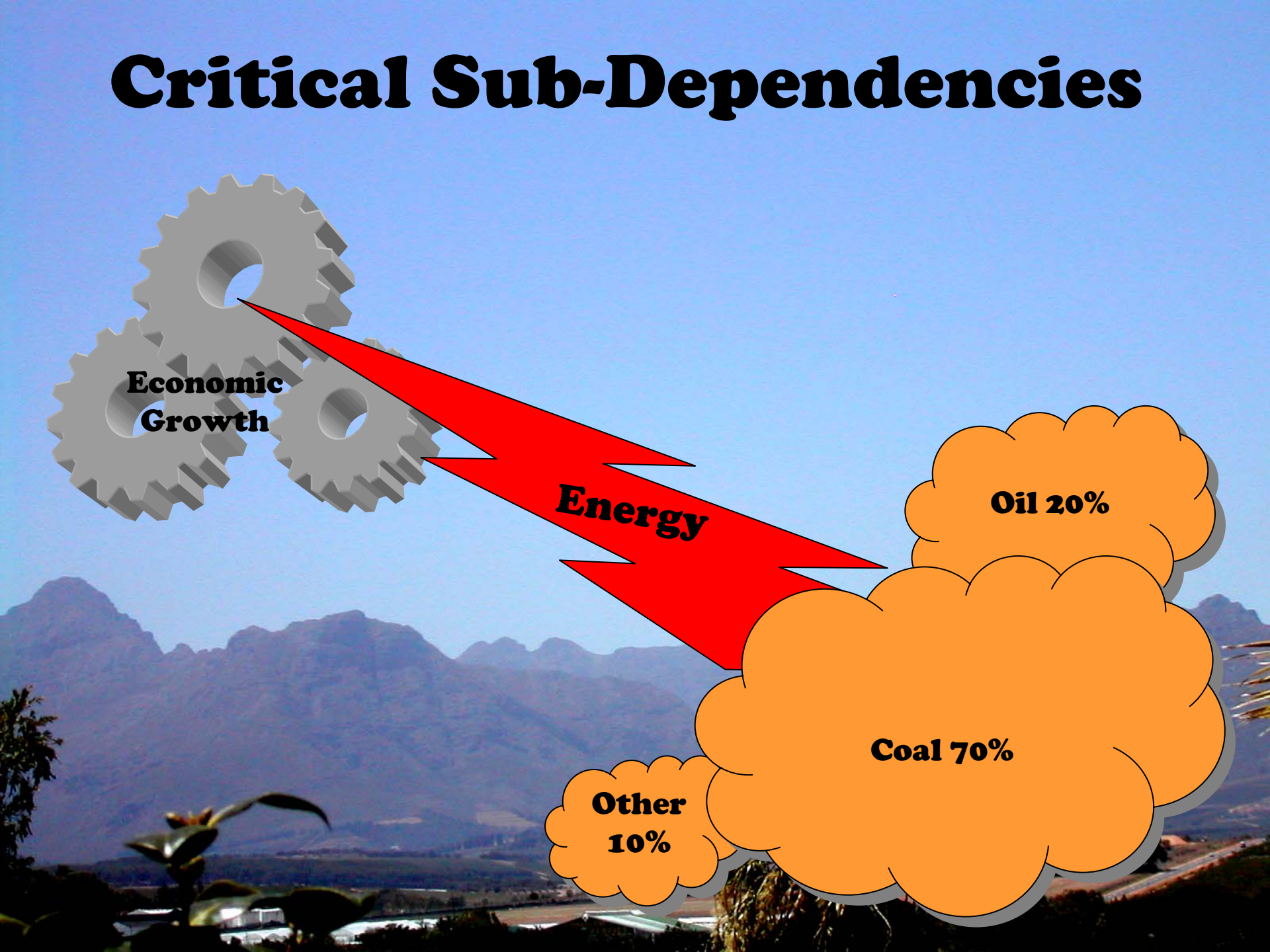
- no of households has grown faster than population growth rate → servicing obligations of the state were greater than population growth rates initially suggested;
- New jobs created, but the number of unemployed and rate of unemployment grown faster because of the rising labour force participation rate;
- changing structure of the economy means more jobs now available in service sectors rather than in traditional sectors – this requires a labour force with different skills to those available to the bulk of the unemployed labour force; and
- rapid in-migration and shifts in the demographic distribution and profile of the urban population



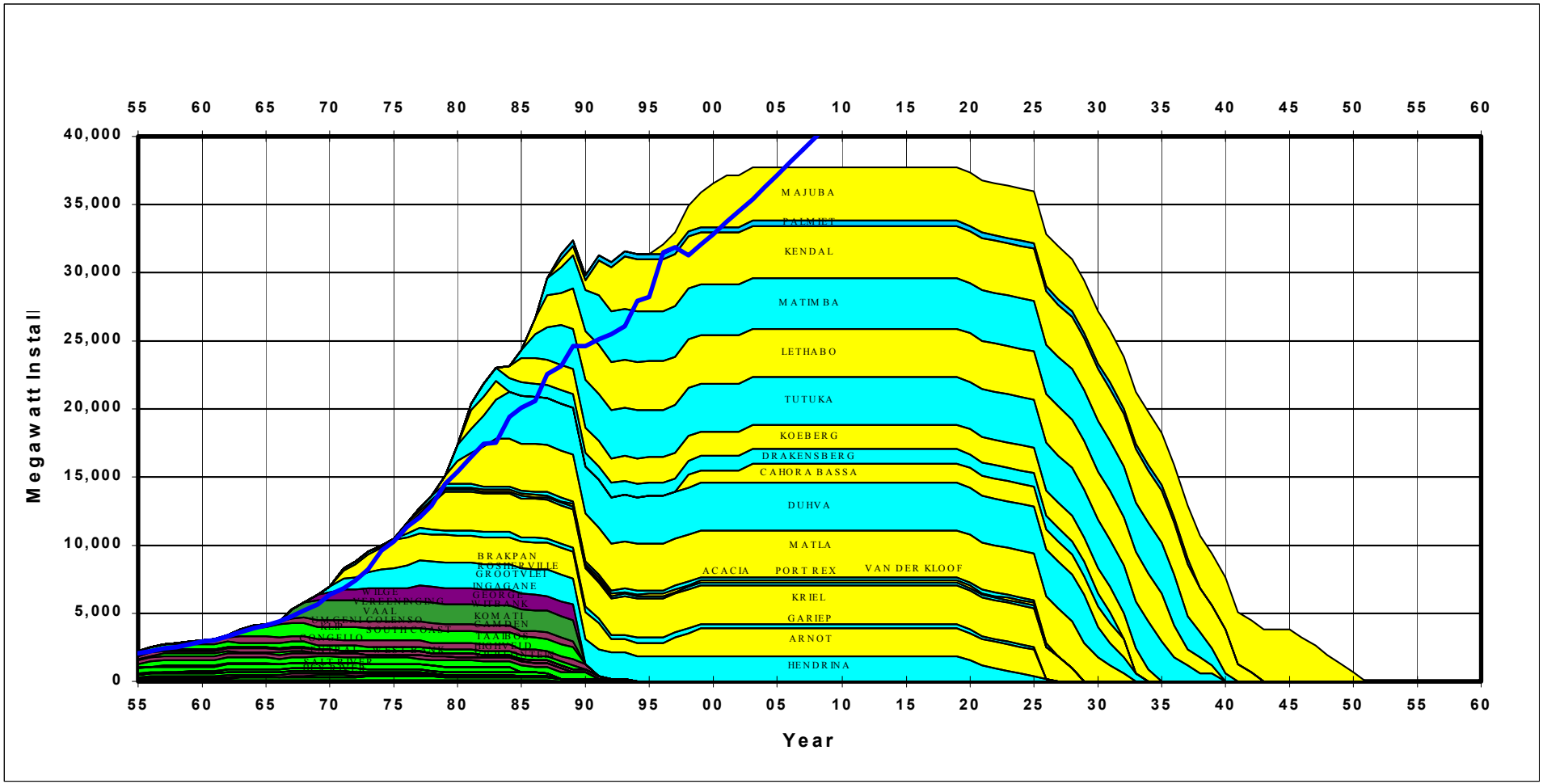
Unsustainable urban growth

- To date, jobless urban economic growth, rising inequalities
- Severe governance weaknesses
- Extremely inefficient on all indicators, water, energy, wastes, air pollution, soils

Critical Sub-Dependencies



Generation


55 60 65 70 75 80 85 90 95 00 05 10 15 20 25 30 35 40 45 50 55 60
40,000
35,000
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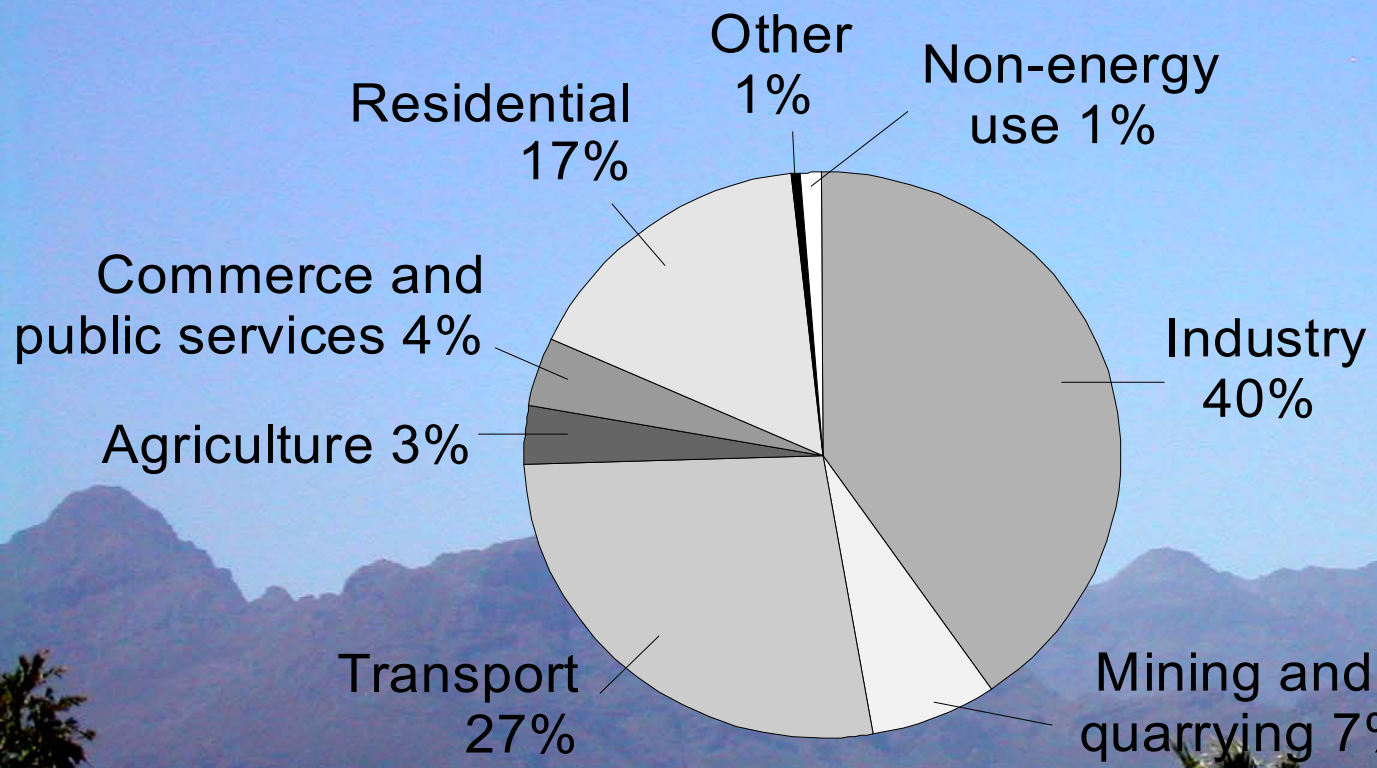
0
Megawatt Install
Year
MAJUBA
PALMIET
KENDAL
MATIMBA
LETHABO
TUTUKA
KOEBERG
DRAKENSBERG
CAHORA BASSA
DUHVA
MATLA
ACACIA
PORT REX
VAN DER KLOOF
KRIEL
GARIEP
ARNOT
HENDRINA
BRAKPAN
KOSHERVILLE
GROOTVLEI
INGAGANE
WITBANK
KOMATI
CAMDEN
TAABOS
HIGHVELD

Energy intensity

	TPES/capita	*TPES/GDP*	*TPES/GDP*	*Elec. consumption per capita (national average)*
	Toe/capita	*toe/000 1995 US$*	*toe/ 000 PPP 1995 US$*	*kWh/capita*
South Africa	2.51	0.63	0.29	4 533
Africa	0.64	0.86	0.32	501
South Korea	4.10	0.31	0.30	5 901
Indonesia	0.69	0.70	0.25	390
Non-OECD	0.96	0.74	0.28	1 028
OECD	4.78	0.19	0.22	8 090
World	1.67	0.30	0.24	2 343

Key: TPES = total primary energy supply, toe = tonnes of oil equivalent, PPP = purchasing power parity (i.e. adjusted to remove distortions of exchange rates), GDP = Gross domestic product

Energy users



Water

	Total system yield:	Total water requirements:
•	2000:13.227 x 109m3	12.871 x 109m3
•	2025 (base):14.166 x 109m3	14.230 x 109m3
•	2025 (high):14.940 x 109m3	16.814 x 109m3

Agric irrigation uses 50%, urban/domestic use 25%

Sustainable Resource Use

- Climate change
- Oil peak and oil-based fuels
- Energy
- Water & sanitation
- Solid waste
- Soils
- Coastal & marine resources
- Biodiversity
- Minerals
- Air quality

Key sustainability challenge

‘consumption neighborhood’

Or

‘sustainable neighborhood’

National – SA case

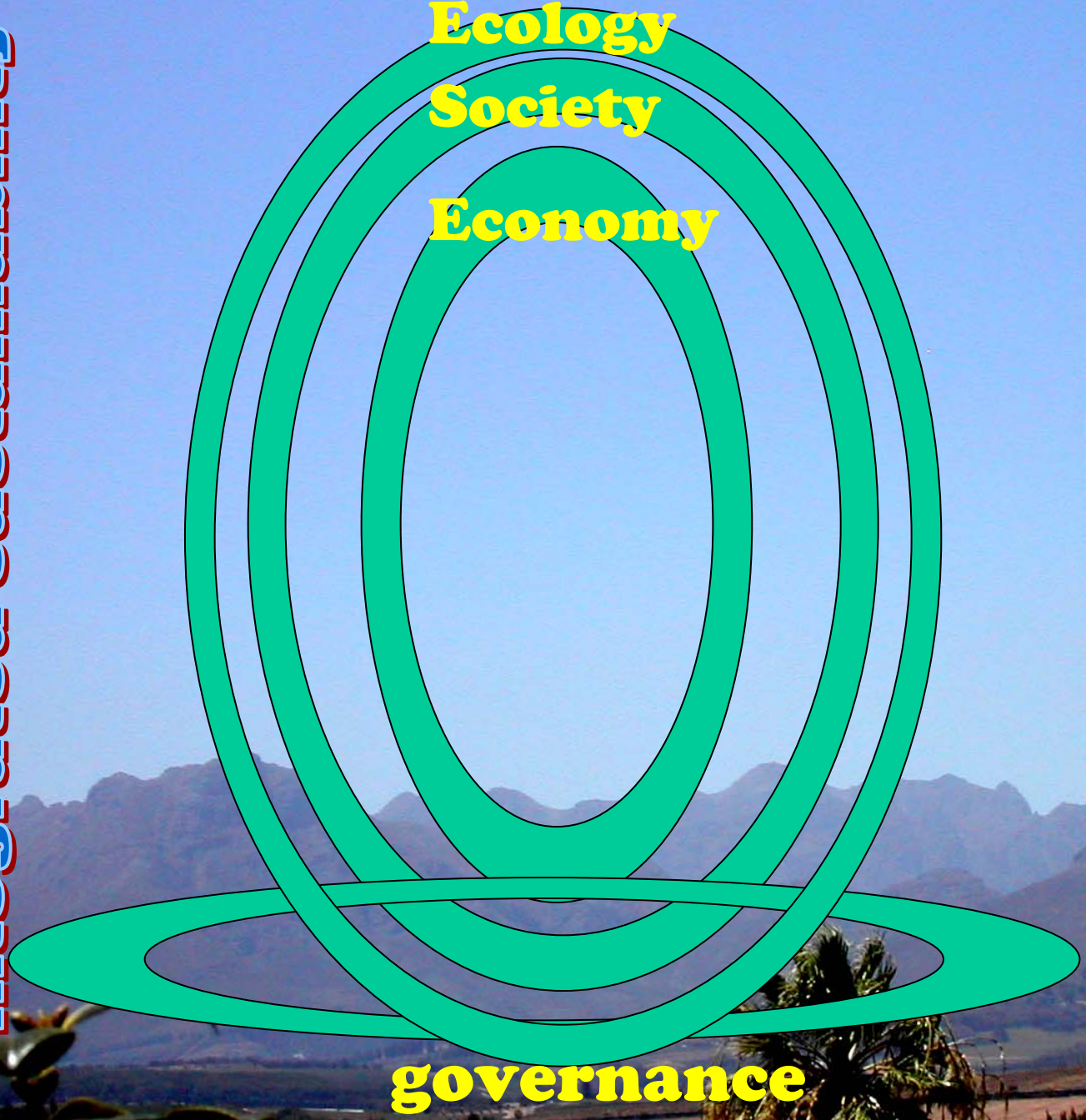
"...secure ecologically sustainable *development and use* of natural resources while promoting justifiable economic and social development."

Section 24 (b) of the Constitution

guiding principles

- Meeting of fundamental human needs via reduction in inequalities
- Valuing authentic cultural diversity, community solidarity, child-centred activities and citizen participation
- Entrepreneurship, equity and fair trade at all levels (global, regional and local)
- Health, well-being and soulfulness
- Transition to renewable energy alternatives and energy efficiency
- Zero waste via re-use of all waste outputs as productive inputs
- Sustainable transport, with a major focus on public transport
- Sustainable construction materials and building methods
- Local and sustainable food
- Sustainable water use and re-use of treated sewerage
- Enhancing biodiversity and the preservation of natural habitats

integrated sustainability



Towards sustainable neighborhoods

- There are 3 key challenges, currently not being met:
  1. ***Speed up innovation*** (social and technological).
  2. ***Transfer income*** from rich to poor in a way that is efficient and politically acceptable.
  3. ***Make process self-governing***, self-financing, independent of complex government programs, and replicable.
- Link the "Green-Red" Agendas:

  Use *existing* energy, water, and waste payments to finance social development.

Cape Town's footprint

- 4,28 ha/cap, ranging from 0,5 ha to 8 ha ha/cap
- 800 000 households, 300 000 are shacks
- 16% of households responsible for 50% of all residential waste – ave is 2 kg/p
- 61% of potable water used for flushing – 20% don't have toilets
- 56% of all energy from oil, 54% of all energy used by transport

Example: Cape Town Resource Flows (2006)

Resource	Expenditure
Electricity	R 3.0 billion
Water Supply	R 1.6 billion
Water Treatment	R 0.8 billion
Waste Management	R 0.6 billion
TOTAL	R 6.0 billion

Conservative 10% increase in resource efficiency

Using proven technologies and systems

Would be worth R 600 Million per year (€ 80 M).

Key technology interventions

- Eliminate 60% of electricity consumption via CFLs, SWHs, insulation, LP gas stoves
- Eliminate 40% of water requirement via grey water recycling
- Comprehensive solid waste recycling
- Transition to RE, incl biofuels, solar rooftops, wind, hydrogen (as decentralised carrier only)
- Capture mechanism for cross-subsidising pro-poor development