

A Marshall Plan - a link towards
Workforce Recovery and
Development

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March 4, 2008

We don't have the workforce we need to
meet the challenges we are facing

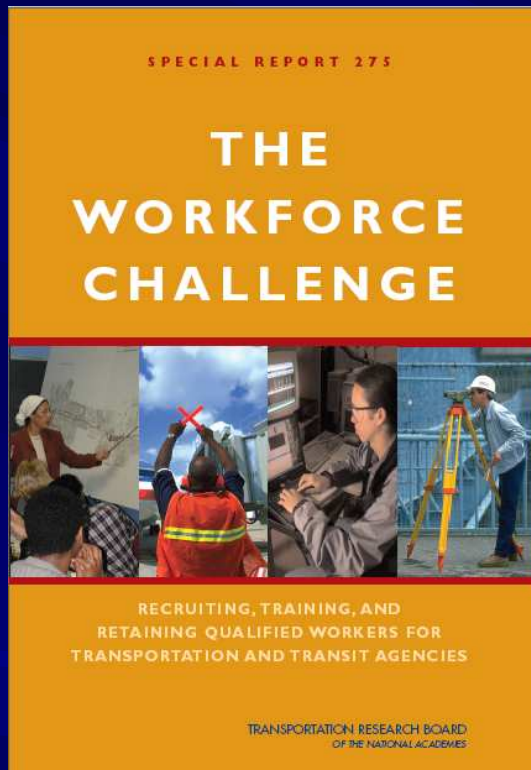
Global Workforce Issues

- *For the cost of one chemist or engineer in the U.S. a company can hire five chemists in India or 11 engineers in China.*
- *In the past two decades, US high technology exports have declined from 30% to 17%.*

Global Workforce Issues (cont)

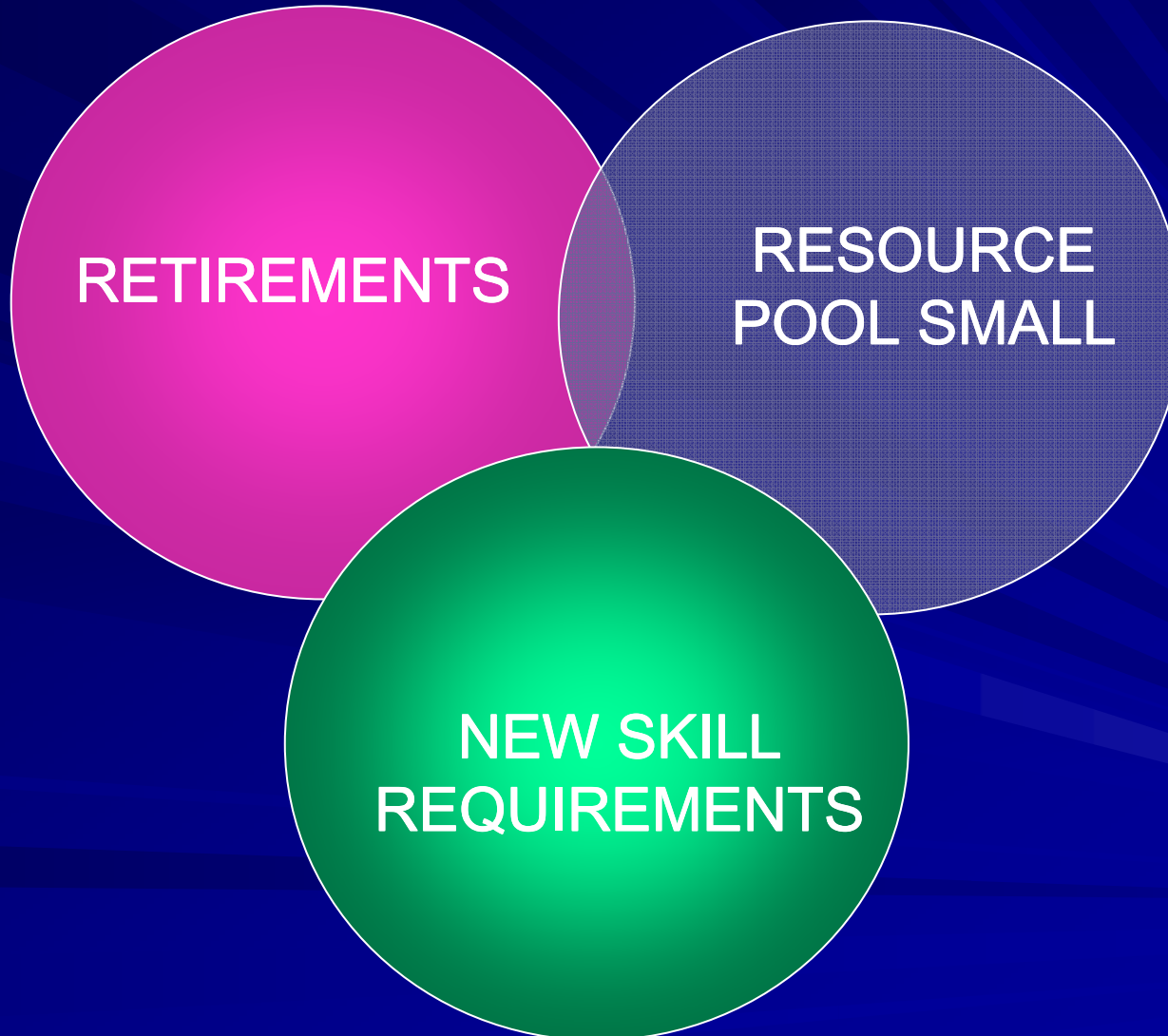
- *Of 49 industrialized countries, US placed 19th in science and 24th in math. **South Africa off the map!** [Trends in Intl Maths and Science Survey 1999 29/29 and 2003 45/45]*
- *US high school seniors perform below the average for math and science for 21 countries.*
- *Undergraduates receiving degrees in math and science: Japan - 66%; China - 59%; Germany - 36%; US - 32%; **SA -26%***

TRB Special Report 275 - The Workforce Challenge

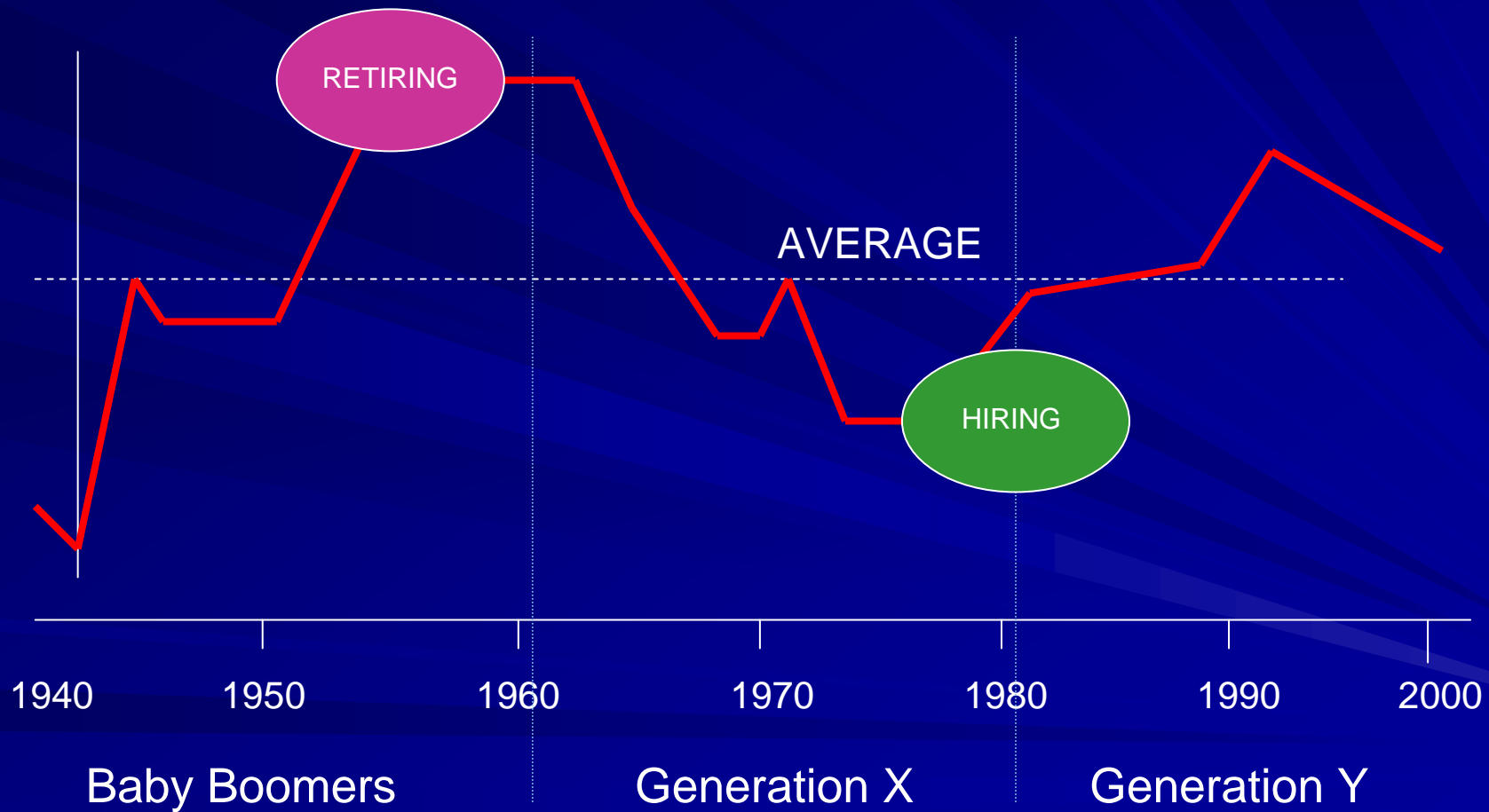


*“Recommendation 4:
USDOT, in partnership with
transportation agencies, the
private sector, educational
institutions, unions, and
employees, should undertake
an initiative that focuses on
innovation...”*

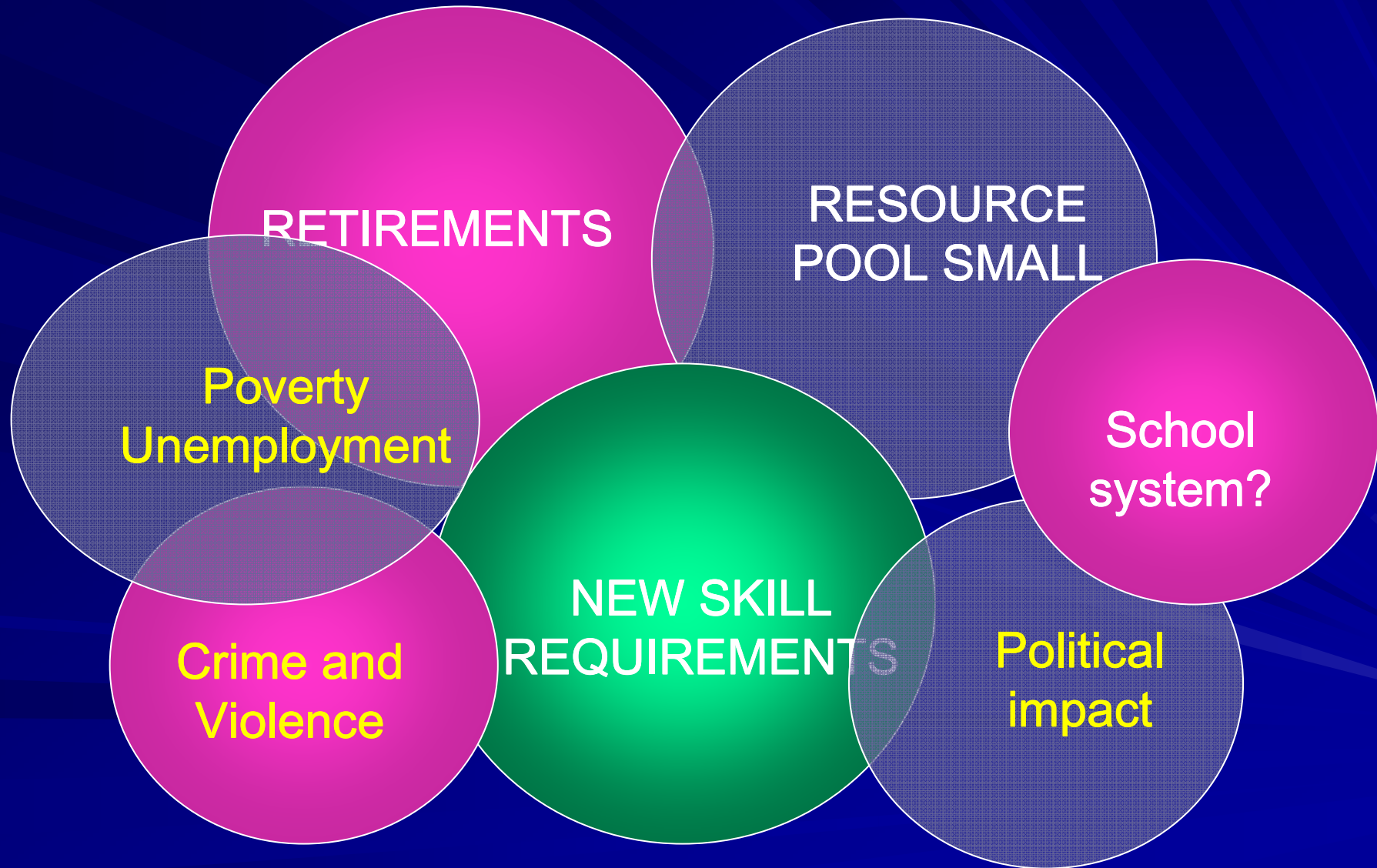
“The Perfect Storm”



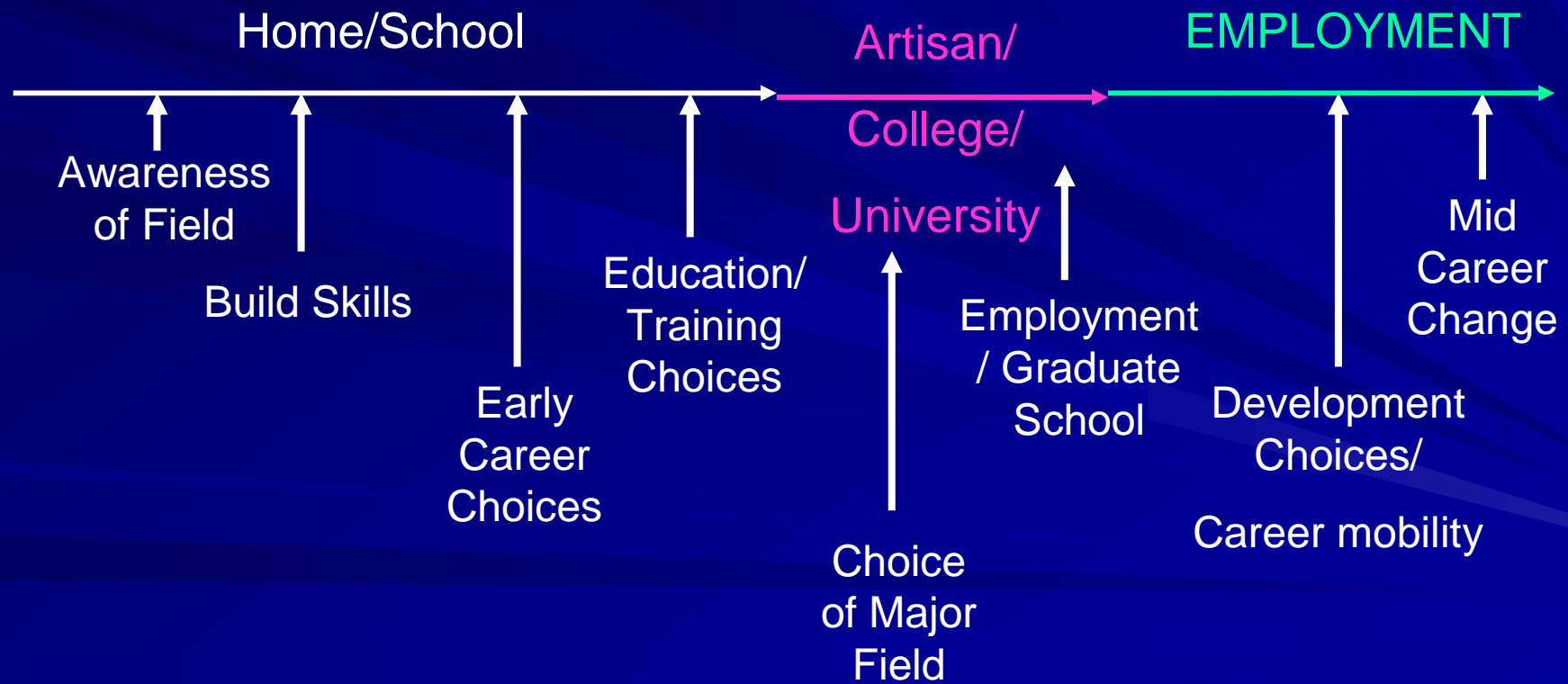
U.S. Birth Rates



Is a Tsunami lurking in SA?



Workforce Development Continuum



Key Workforce Challenges...

■ Long Pipeline

- How can we make an impact from elementary school through into tertiary education or into skilled trades?

■ Mid Career

- How can bring mid-career professionals productively into the STEM arena?

■ Professional Development

- How can we provide career development and growth while meeting new skill requirements?

■ Workplace Practices

- How can we provide what today's workforce is looking for?

Strategic Steps Towards Workforce Development

- If we pool our efforts and coalesce around *successful programs* and key areas, we can rise to the challenge.
- # strategic action areas should serve as starting points
 - *Interventions* parallel to long-term action
 - *Revise government policy*
 - Build on *current operational successes* such as *TRAC*
 - Utilize *Leadership* in all places
 - Establish *common issues* for the *community focus*
- We all share a responsibility to act and to ensure we have the workforce we need to take us into the future.

Strategy 1: *STEM* the *Tsunami* Promote Science, Technology, Engineering and Management

Concept

- Motivate and Mobilize organizations and professionals to participate in local efforts to promote *STEM*
- Partner with others interested in developing *STEM* skills (e.g., industry, professional bodies, foundations, FET colleges, universities, Govt agencies)

Objective

- **Widen the *STEM* pipeline** and raise the visibility of this challenging but very exciting career choice to make a difference to the state of the nation

Strategy 2: Connect Community into Science Engineering and Technology Career Pathways

Concept

- Create partnerships that promote these careers and prepare students for high need areas
- Provide short-term programs to introduce and attract students into the field

Objective

- **Increase the development of job candidates** to fill skill gaps within the local workforce entities

Strategy 3: Raise the Visibility and Attractiveness of *STEM* Careers

Concept

- Coordinate a national campaign to raise the visibility of *STEM* careers
- Promote the value of *STEM* careers to potential candidates in the educational pipeline

Objective

- Increase the size and talent of the *teaching* and *learner* pool

Strategy 4: Develop a Broad-Based Internship Program

Concept

- Develop a national internship clearinghouse to match students with organizations across the country

Objective

- Simplify the process for prospective interns and employers
- Raise the visibility of *STEM* careers

Strategy 5: Engage with Retraining Programs for Incorrectly or Poorly Qualified Graduates

Concept

- Retrain unemployed workers for industries with high-demand areas in specific skills
- Partner with provincial and national departments, career centres, and workforce boards

Objective

- Increase flow of skilled STEM workers

Strategy 6: Ensure that *STEM* Workplaces have the right *Environment*

Concept

- Transform the industry into a recognized “top place to work”
- Develop and implement “model” workplace practices that attract employees and improve career satisfaction (e.g. work/life balance, telecommuting, flextime)

Objective

- Widen the pipeline of interested candidates; improve retention of trained staff

Marshall Plan

Overall Objectives

- *Set achievable goals.*
- *Work towards the goals individually or through partnerships*
- *Consider sustainability!*

Marshall Plan

1. Establish feasible short-term interventions

- Retrain to suit needs
- Establish database of qualified artisans to recover resources
- Fast-track trade apprenticeships
- *Rationalise and promote STEM training and education*

Marshall Plan cont

2. Initiate long-term action/programmes

1. *Raise visibility of science, technology, engineering and management (STEM) careers*

Marshall Plan cont

3. Optimise the career pipeline
4. Maximise partnerships between roleplayers
5. Create opportunities and align interventions

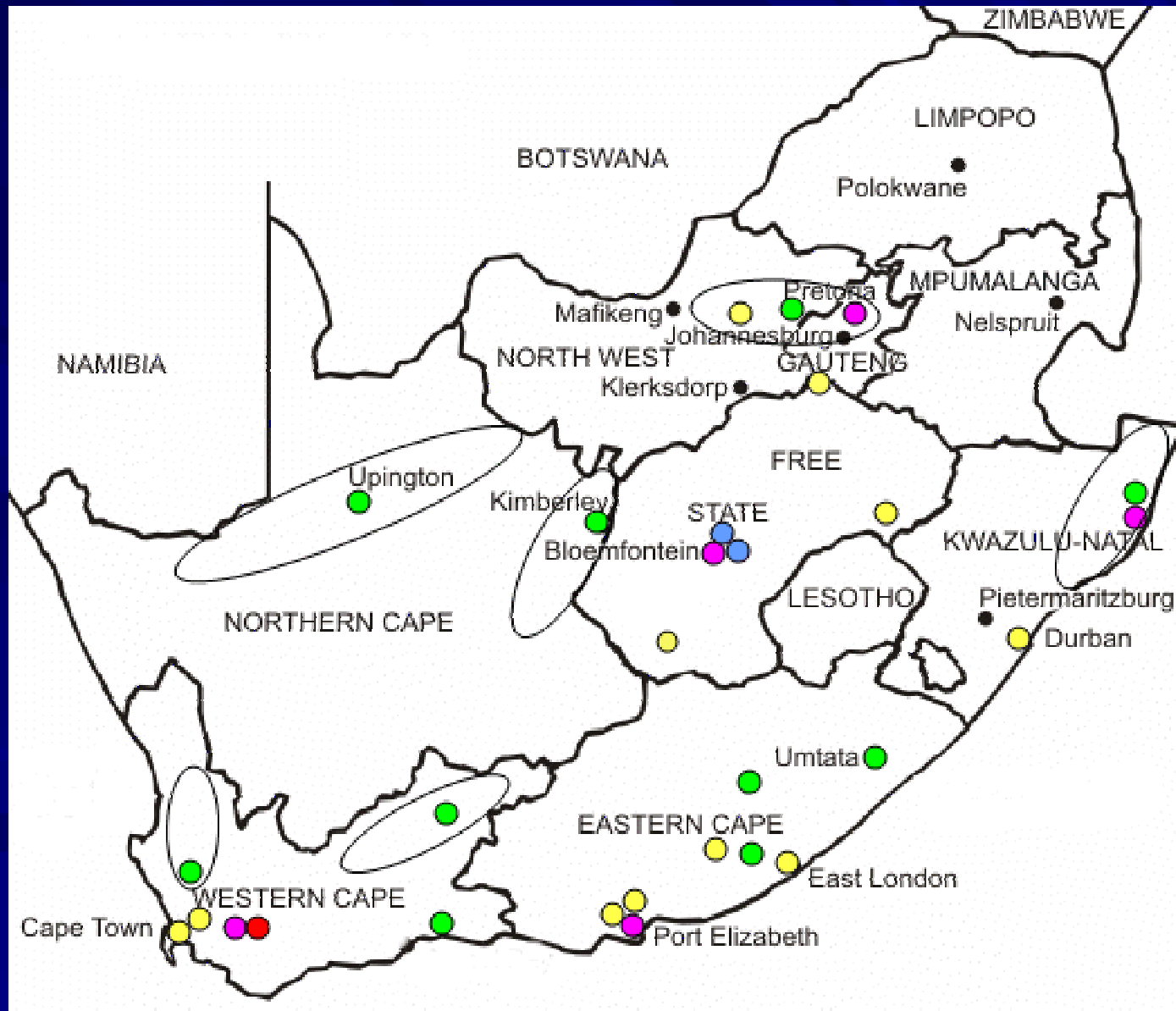
Marshall Plan cont

6. Activate and build community awareness towards STEM recruitment
7. Retain corporate STEM capacity within academic, government, industry and business sector

Conditions for successful unwrapping and implementation of the *Marshall Plan*:

1. A safe and secure environment
2. Revision of government policies
3. Adoption of Marshall Plan as a national strategy

Trac is nationally distributed!



Some *Trac* Statistics 2007

Summary of Scope of Activities:

- 6 Regional labs: WC, EC, FS, GNN, KNN, GNS
- 8 Satelite labs
- 2 School labs
- 8 Mobile labs of which 6 are full-time
- Dinaledi schools

Exposures 2007

- 112 875 learners (~67 000 - 2006),
- 2 800 teachers (1433 - 2006)

Staff

- 13 Male, 12 Female, Demographics approaching parity

Summary of Sponsors:

- M&R ; SANRAL ; DOT ; PGWC ; Univ SB; AVENG ; WBHO; SASOL

Working Together for Workforce Development

- How do we build consensus for change?
- How can we build upon current efforts and partners' strengths?
- How can we coordinate related initiatives?
- What might this look like?

We can and should protect ourselves against a *Tsunami* however, then we need to do what needs to be done!