

Baseline survey of the mining and minerals sector

MMSD - SA: RT6

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now at:

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SCOPE

- ◆ Industry description
- ◆ History
- ◆ Social interactions
- ◆ Economic impacts
- ◆ Small scale mining
- ◆ Supply chain
- ◆ Land access
- ◆ Drivers of change

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AIM

- ◆ Survey the interactions between mining and society in southern Africa
- ◆ ecological + social, labour, economic, industrial, political, world mining industry
- ◆ where is the industry situated at present
- ◆ Identify the major issues, approaches, impacts.

Industry description

- ◆ Contributions of mining
- ◆ **Criteria for major minerals**
- ◆ main producer of Cr, Co, Dm, Au, PGMs
- ◆ **>45% of world reserves for 8 minerals**
- ◆ SADC mining labour: 2 million
- ◆ **Employment multiplier**
- ◆ 43% of work force lost their jobs in 10y

Stages of processing

| | | |
|----|--------------|--------------------|
| Cr | Stainless | SA |
| Co | Manufactured | SA |
| Cu | Manufactured | SA, Zm, Zw |
| Dm | Cut | Bw, Mu, Na, SA, Tz |
| Au | Fabricated | SA, Zw |
| Fe | Manufactured | most |
| Pt | Manufactured | SA |

History of mining in southern Africa

◆ Stone Age

Broken Hill Man



<http://www.africa-insites.com>

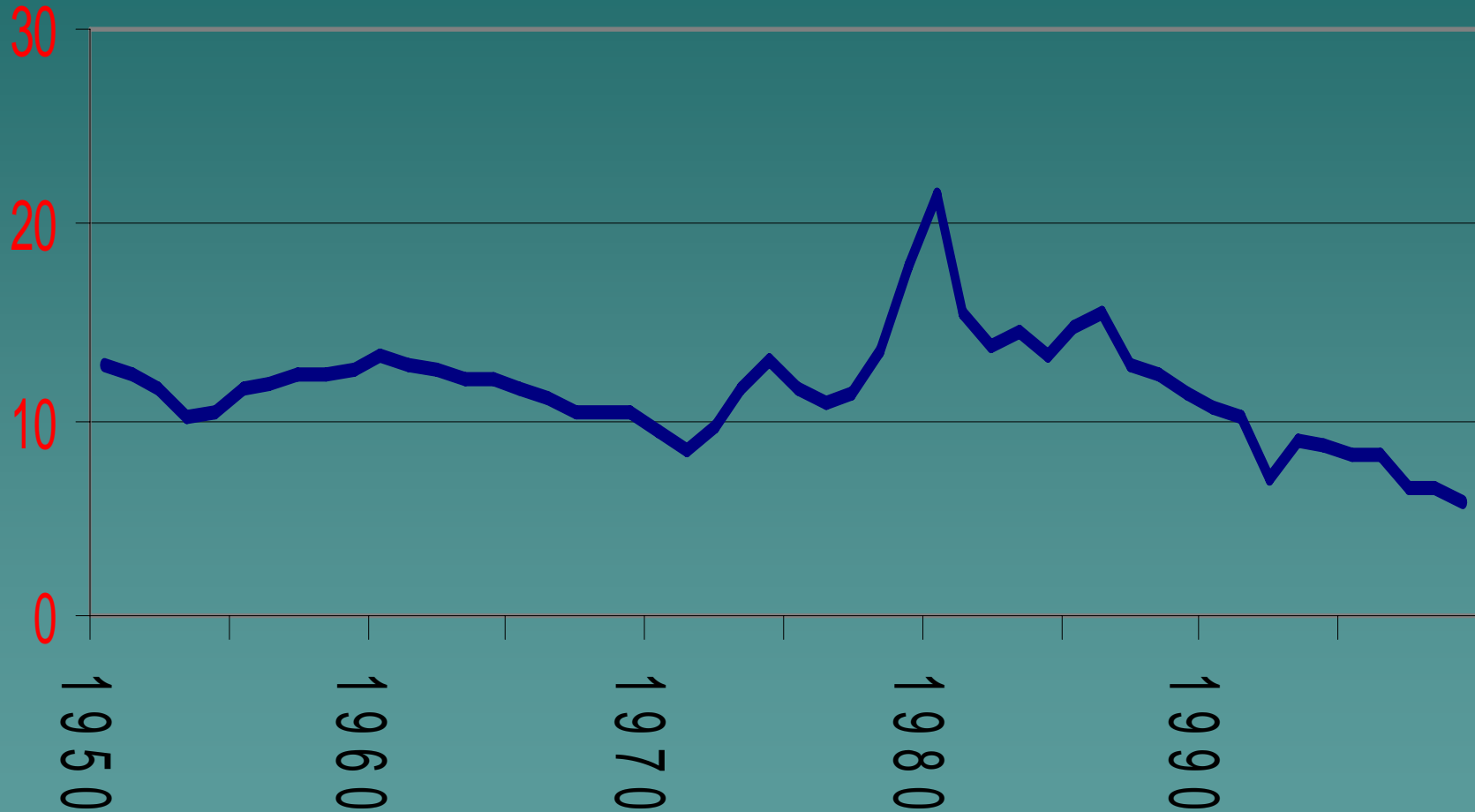
History of mining in southern Africa, contd.

- ◆ Start of industrial development
- ◆ Peak in 1970, then decline
- ◆ Historical theme: restrictions, living conditions, low wages, migrant labour.
- ◆ Impediment to growth
- ◆ Other minerals

Social interactions and trends

- ◆ Problems: displacement, envir. degradn
- ◆ **Employment; closure?**
- ◆ Contributions by companies:
implementation and sustainability
- ◆ **Interaction between poverty and envirt.**
- ◆ Companies now more conscious -
but approach still not systematic.

Mining: % of SA GDP



Economic impacts

- ◆ Absolute value increased
- ◆ Mining 43% of region's 1997 exports
- ◆ Then persistent decrease
- ◆ Beneficiated minerals → 59%
- ◆ Government revenue
- ◆ Picture changing: other minerals dominant
- ◆ But not yet compensated
- ◆ Prospects for mining revival

Small-scale mining

- ◆ For alleviating poverty, empowering communities
- ◆ Support programmes
- ◆ SA: inhibited SSM
now DME supports SSM
- ◆ Artisanal mining discouraged
- ◆ Rel. with large companies

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Relative values of Cr products

| | |
|----------------|-----|
| Chromite | 1 |
| Ferrochrome | 4 |
| Cr metal | 21 |
| St Steel sheet | 43 |
| St Steel tank | 147 |

Moved

Land access

- ◆ For mining, land = mineral rights
- ◆ Private rights = white
- ◆ Government policy:
- ◆ System prevents optimal development?
- ◆ Draft Minerals Development Bill
- ◆ Legislation in other countries

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Drivers of Change

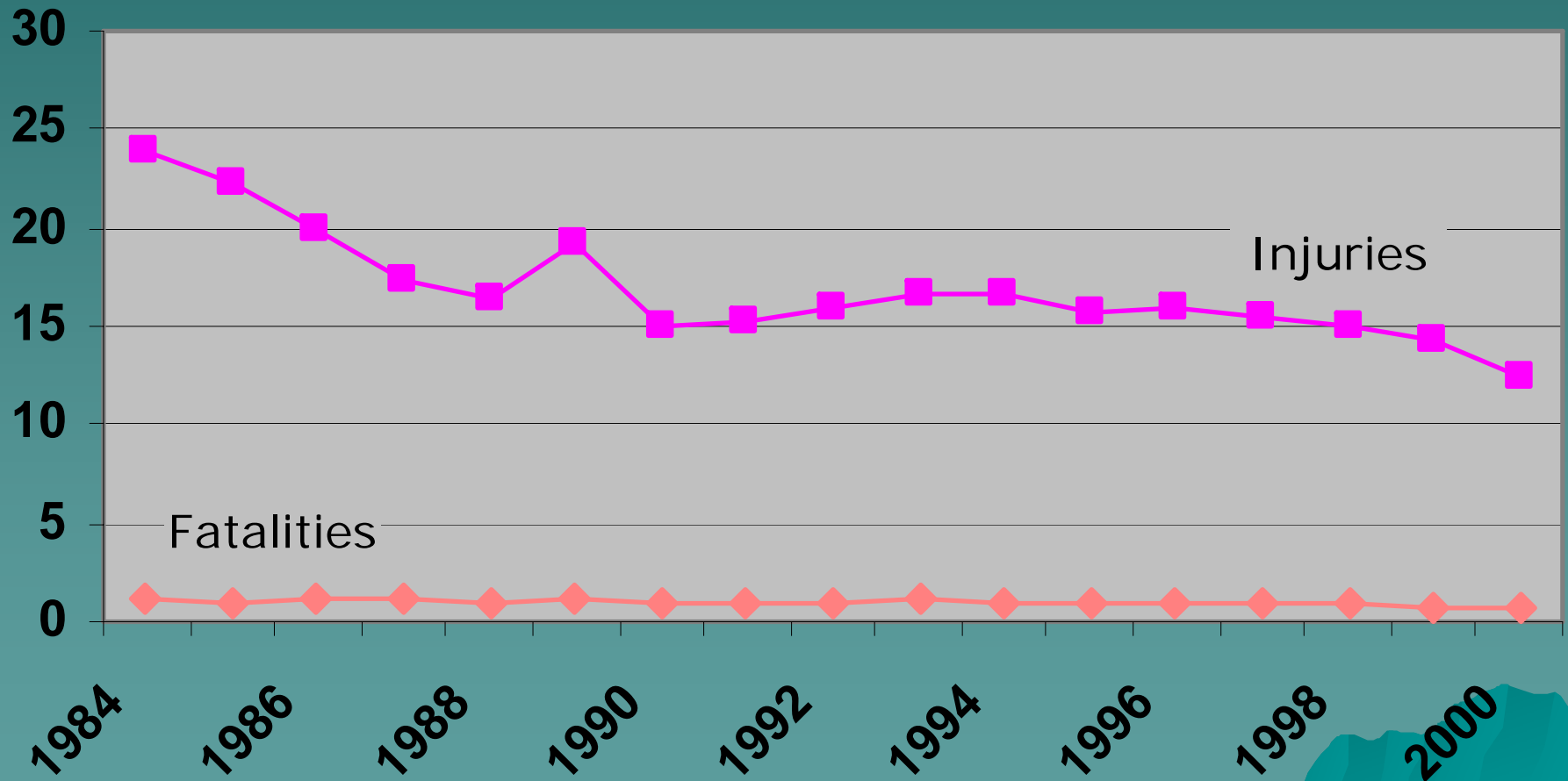
- ◇ Supply/demand considerations
- ◇ Restructuring and changing corporate profiles
- ◇ Technology
- ◇ Legislation and policy changes
- ◇ Regional initiatives
- ◇ External influences

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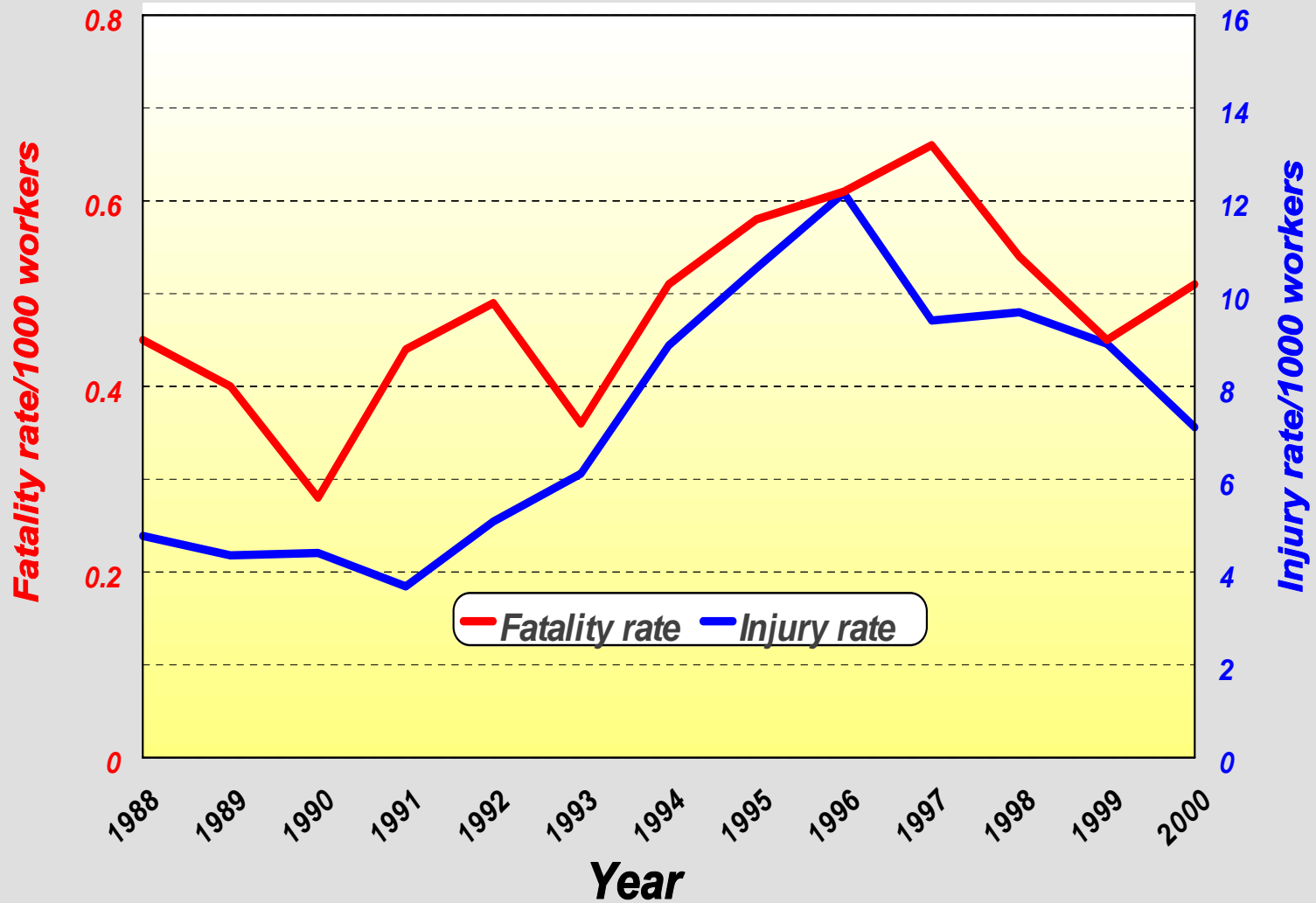
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All Mines Fatally and Injury Rates 1984-2000

Rates per thousand at work, projected for 2000



Fatality and injury rates in South African platinum mines



Supply chain issues

- ◆ Value added: up to 380x calculated
- ◆ Inputs required for processing:
- ◆ Constraints: e.g Steel: 60 Mt reserves
- ◆ HCFeCr: transport costs
- ◆ PGMs: Technologies for refining