



Skills for and through SIPs

*What has been done and what still needs to be done to skill South Africans **for** SIPs and **through** SIPs*

2 September 2014



**economic
development**

Economic Development Department
REPUBLIC OF SOUTH AFRICA



**higher education
& training**

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA



Purpose

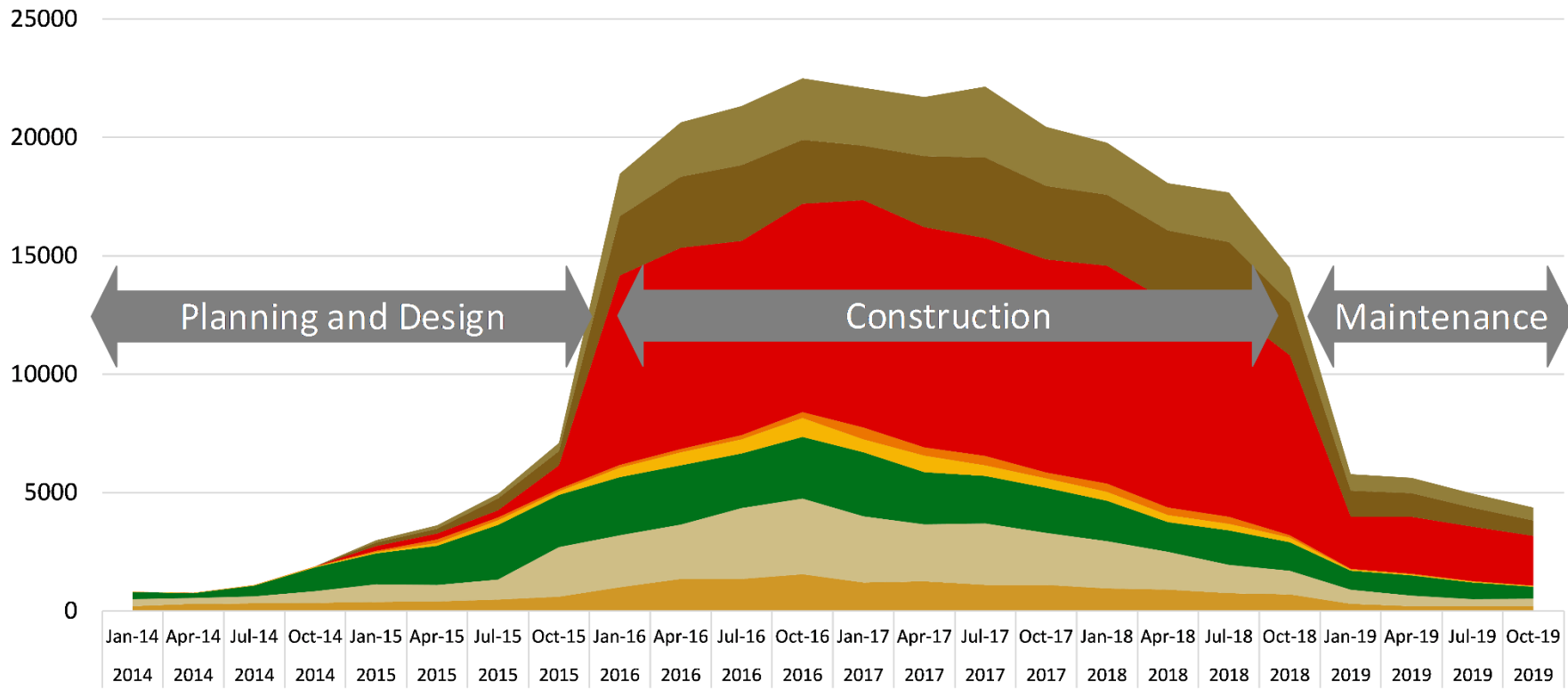
- Outline the skills **demand** for SIPs
- Invite **researchers** and **partners** to assist with improving the methodology
- Describe the learning pathways, **bottlenecks** and possible **solutions**
- To promote **broader engagement** on understanding and addressing challenges
- Inform education and training **planners** of occupations in demand for SIPs
- Direct the attention of planners to specific **interventions** required
- Encourage all with the **resources** to support the interventions identified
- **Report** to South Africans about the work that has already been done and still needs to be done in terms of generating South African skills.



Developing skills profiles – identifying sectors

- ❑ Agriculture, Forestry & Fisheries
- ❑ Basic Education
- ❑ Commercial and Office Buildings
- ❑ Communication
- ❑ Correctional services
- ❑ Crime prevention (SAPS)
- ❑ Energy
- ❑ Health
- ❑ Higher Education & Training
- ❑ Human Settlements
- ❑ Justice
- ❑ Manufacturing
- ❑ Mining
- ❑ Other (e.g. Public Works)
- ❑ Ports, rail, pipelines
- ❑ Public Transport
- ❑ Roads
- ❑ Social Services
- ❑ Tourism
- ❑ Water & Sanitation

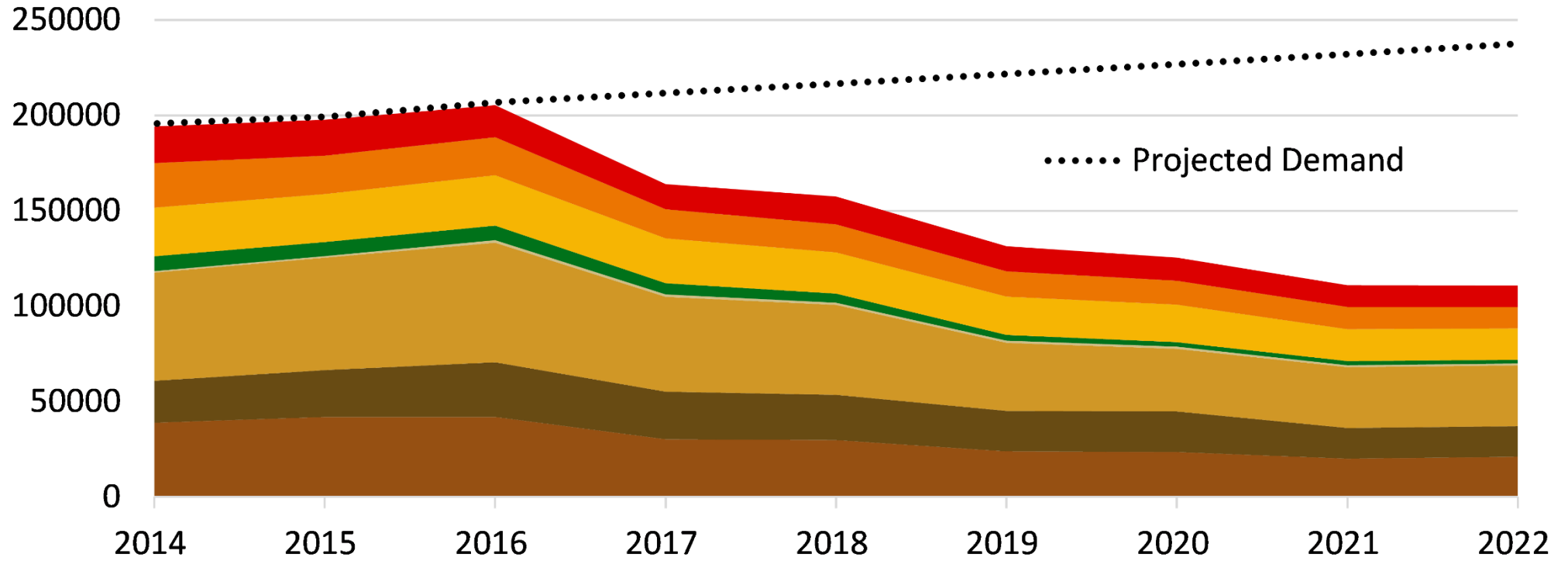
Typical skills prototype per sector



- 1: Managers
- 2: Professionals
- 3: Technicians and Associate Professionals
- 4: Clerical and Support Workers
- 5: Service and Sales Workers
- 6: Trades
- 7: Plant and Machine Operators
- 8: Elementary Occupations



Overall skills demand for all SIPs



- 1: Managers
- 2: Professionals
- 3: Technicians and Associate Professionals
- 4: Clerical and Support Workers
- 5: Service and Sales Workers
- 6: Trades
- 7: Plant and Machine Operators
- 8: Elementary Occupations



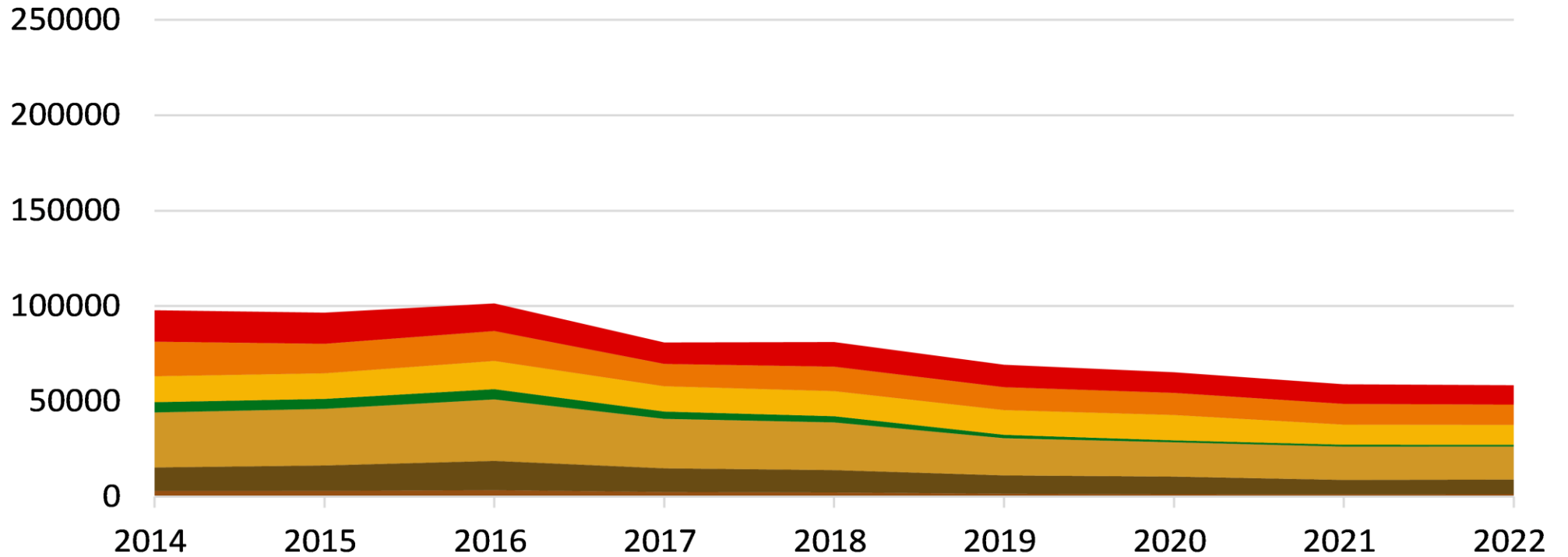


Developing skills profiles – defining scarcity

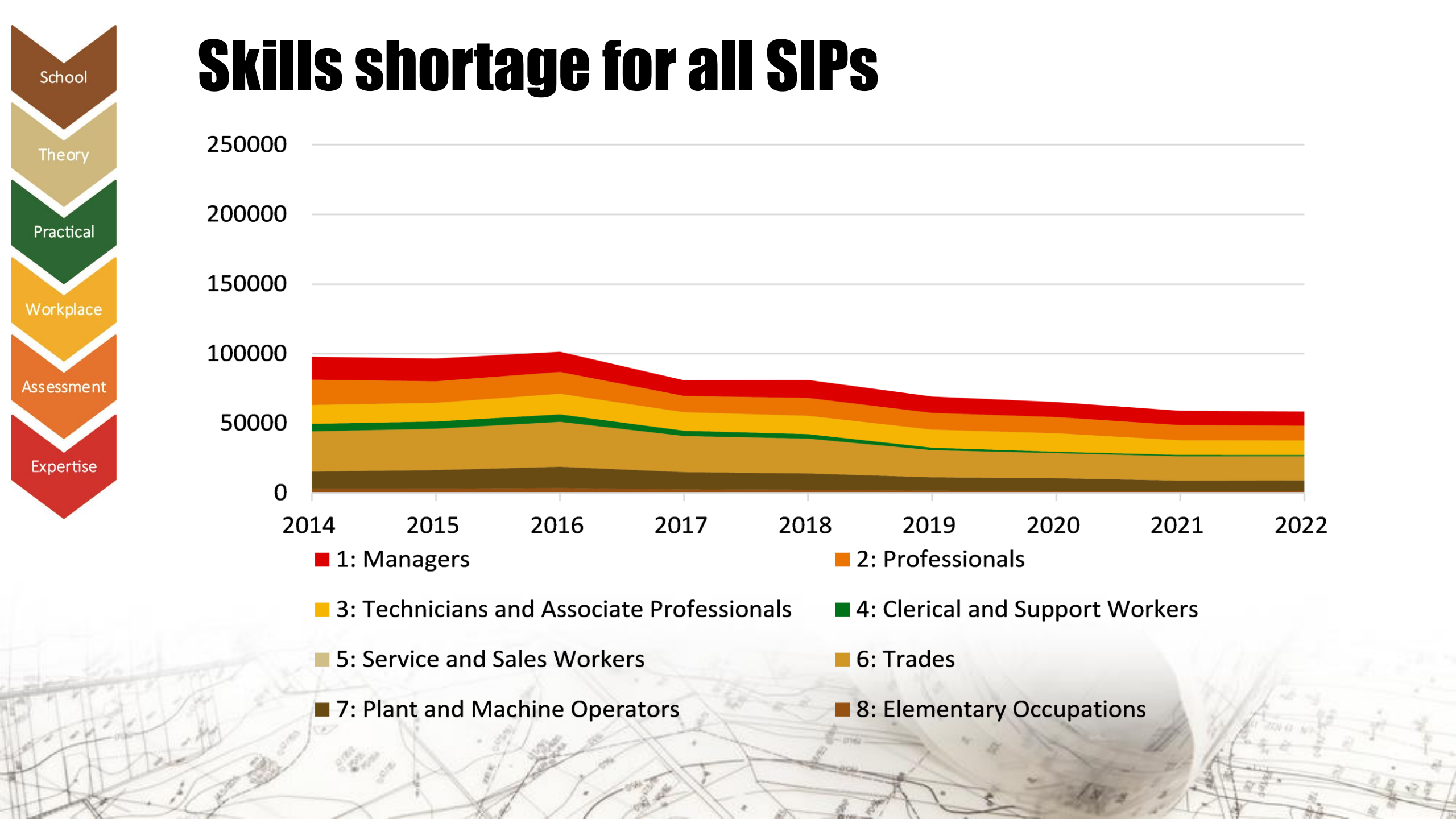
- Adequate supply
- Shortage (0-20%)
- Significant shortage (20-50%)
- Critical shortage (50-99%)
- Absolute scarcity (100%) i.e. not available



Skills shortage for all SIPs



- 1: Managers
- 2: Professionals
- 3: Technicians and Associate Professionals
- 4: Clerical and Support Workers
- 5: Service and Sales Workers
- 6: Trades
- 7: Plant and Machine Operators
- 8: Elementary Occupations



Top 6 scarce skills after first assessment (2013)



Surveyor (including land and eng. surveyors)	500
Materials Engineer	450
Grader Operator	450
Programme / Project Manager	350
Electronic Eng Technician	300
Welders	220



The skills pipeline

School

Theory

Practical

Workplace

Assessment

Expertise

School

Theory

Practical

Workplace

Assessment

Expertise

- Career guidance and subject choices
- Quality of education and achieving grades required for occupation

- Funding, throughput – enhancing delivery
- Access, new qualifications

- Availability
- Equipment, simulators, instructors

- Enough workplaces to offer meaningful, structured experience
- Coaching, mentoring, funding

- Passing a trade test, professional registration, licensing, completing a learnership or QCTO Award etc

- Immigration, secondment, retirees
- Specialisation

+ Employment and related issues



Professionals and associate professionals

The occupations

Built environment professionals

- ❑ Draughtsperson
- ❑ GISc practitioner, technologist, technician
- ❑ Landscape architect, technologist, technician
- ❑ Land and engineering surveyor
- ❑ Quantity surveyor
- ❑ Planner

Construction professionals

- ❑ Construction project manager
- ❑ Construction manager
- ❑ Construction health and safety agent, manager and officer





Professionals and associate professionals

The occupations (cont)

Engineers

- ❑ Aeronautical engineer, technologist, technician
- ❑ Chemical engineer, technologist, technician
- ❑ **Civil engineer, technologist, technician**
- ❑ Electrical engineer, technologist, technician
- ❑ **Environmental engineer, technologist, technician**
- ❑ Industrial engineer, technologist, technician
- ❑ **Materials engineer, technologist, technician**
- ❑ Mechanical engineer, technologist, technician
- ❑ Mining engineer, technologist, technician

Scientists

- ❑ ICT
- ❑ Forestry
- ❑ Physicist
- ❑ Astronomer



Professionals and associate professionals

Schooling

- Common challenges
 - High symbols in maths, science and literacy required
 - Limited pool from whom to chose and a challenge i.t.o. transformation
 - Limited awareness
- Solutions
 - Address Basic Education challenges
 - **Work with National Career Advice Portal to improve information on careers, attend career days and give career talks on radio in all 11 languages**



Professionals and associate professionals

Theory

- Common challenges
 - Low throughput and inadequate numbers entering industry
 - Inadequate numbers enrolling or inadequate number of institutions
 - New qualifications required
- Solutions
 - Modernise and increase amount of **equipment** and expand facilities
 - Reduce high student to lecturer ratios – attract, develop more lecturing staff by making scholarships available, **funding Chairs, subvention, increasing salaries** etc
 - Increase support staff
 - Increase tutoring, use of e-learning and range of student support
 - **Increase number of bursaries available**
 - **Develop new qualifications where required**
 - Greater % of DHET subsidy should reach the departments developing professionals



Professionals and associate professionals

Workplace-based learning

- Common challenges
 - Limited opportunities in the workplace
 - Poorly structured training
- Solutions
 - Develop structured programmes including mentorship and coaching
 - Recognise candidate training as a learning pathway
 - **Encourage employers to take on candidates** and SETAs to fund training during the candidacy phase
 - Encourage SETAs to work with VAs to manage programmes
 - **Public sector to use Gazette 36760 to ensure their staff adequately training**



Professionals and associate professionals

Assessment

- Common challenges
 - Small Councils have insufficient capacity to establish robust review system
 - Costly to establish new qualifications, occupations, professions
 - Not all occupations recognised on OFO
 - RPL not in place in all Councils
- Solutions
 - Offer seed funding and subsidise review process to establish new Councils and new qualifications, occupations, professions
 - Link Councils with the OFO committee to make recommendations
 - Fund the development of RPL systems where required



Professionals and associate professionals

Expertise

- Common challenges
 - Insufficient expert/experienced capacity
- Solutions
 - Companies to support CPD
 - Encourage postgraduate studies
 - **Support secondments**
 - **Employ retired professionals to offer expertise and mentor**
 - Harness international specialists where necessary



Operator and elementary occupations – challenges

- Lack of standardised/accredited training programmes
- Informal/in-house training
- No clearly defined career pathways
- Insufficient or inadequate training providers
- Inadequate equipment, facilities
- High cost of training
- In the case of operators need for relicensing ever 3 years
- Mobility of workers (in view of localisation of labour)



Elementary occupations – solutions

- Standardisation of qualifications – develop:
 - Qualifications – QCTO and/or modules of employable skills
 - Learning material
 - Practical facilities e.g. simulators and equipment
 - Logbooks for workplace learning
 - AQP
- Career progression
 - Outline learning & occupational pathways
- Implementation of cidb Skills Standard





cidb Skills Standard – overview

- **Gazette No. 36760 of 2013**
- Collaborative effort - cidb, DPW, DHET, DED
- Standard provides for structured workplace training towards the attainment of national outcomes leading to:
 - Occupational qualifications
 - Trade qualifications
 - University of technology diploma (P1 and P2)
 - Candidacy for professional registration



Solutions from government's side

■ Universities

- Block grant (enrolments, graduation, research outputs and a special factor to remedy past disadvantage)
- Earmarked grants (for special purposes)

■ Colleges

- Formula funding of programmes
- Earmarked funding

■ SETAs

- Occupational qualifications, learnerships, internships, apprenticeships, candidacy programmes ...
- Bursaries ...
- Partnerships with colleges and universities
- Equipment, infrastructure and the like
- R 800m committed to date



From government's side

- **National Skills Fund**

- Funds have already been allocated to key projects
- Systematic planning for further applications needed

- **Other government departments**

- National Treasury: Infrastructure Skills Development Grant
- Department of Public Service & Administration: Internships
- Dept. of Cooperative Government: MISA
- Department of Public Enterprises for SOCs
- Other sectoral departments are contributing to skills development too e.g. Department of Transport, Health, ...

- **All government departments**

- Provide structured workplace learning opportunities



From the private sector

- Invited the private sector to join government in supporting learning opportunities in support of the SIPs – there are multiple opportunities to do so – see the Report
- All SIP Implementing Agencies urged to implement the cidb Training Standard
- Commitments can be made on the Portal so that commitments can be consolidated

<https://sip-skills.onlinecf.net>



Need for materials technicians and technologists

- Senior Materials Tech/Technologist
 - Qualification and registration required?
 - Determine demand and requirement
 - Identify institutions prepared to offer qualification
 - Curriculum development and approval
 - Enrolment planning and approval (3 year cycle)
 - Provide facilities including classrooms, laboratories, equipment etc
 - Appoint lecturers and develop detailed material
 - Advertise course
- Laboratory Manager and Testers
 - Qualification needed
 - Set up National Laboratory Association as AQP
 - What progress, what help needed