

FIDIC-GAMA 2017



Conference on Infrastructure

7 - 10 May | Cape Town | South Africa

African Partnerships for Sustainable Growth

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**Engineering Skills in Africa –
Engineering Needs and Numbers Study in SADC**



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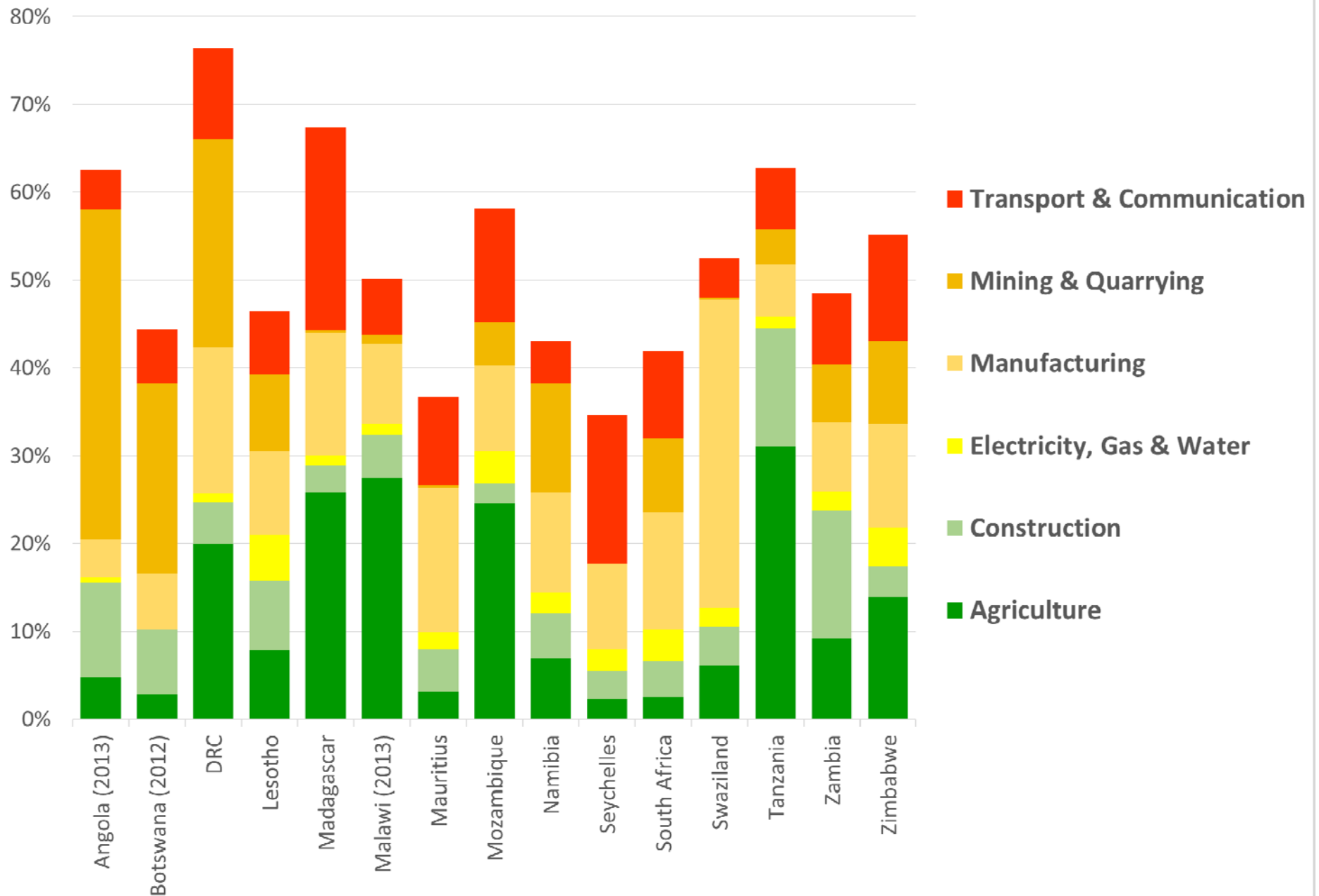


WHY THE STUDY?

- **Africa** has backlogs – how do we address them?
- **Africa** has assets – how do we maintain them?
- **Africa** needs more economic infrastructure – how do we deliver?
- **Africa** has resources – how to develop tertiary industries?
- **Africa** has engineering students – are they being adequately educated?
- **Africa** has engineering graduates – are they being adequately trained to plan, deliver and maintain infrastructure?
- **Africa** has engineering experts – are we using their skills to develop skills, and carry out long-term planning?

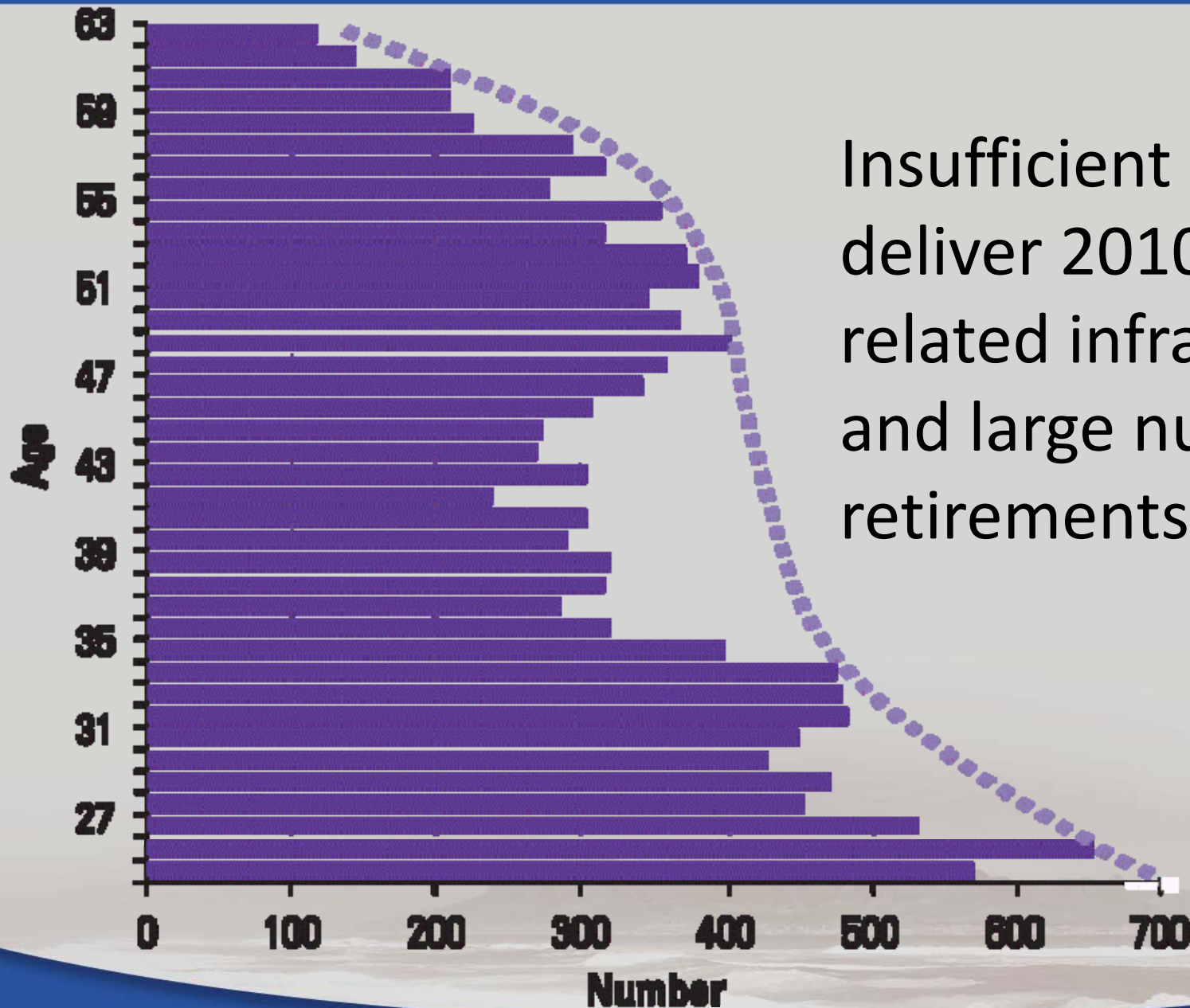


ENGINEERING SECTORS' CONTRIBUTION TO THE GDP

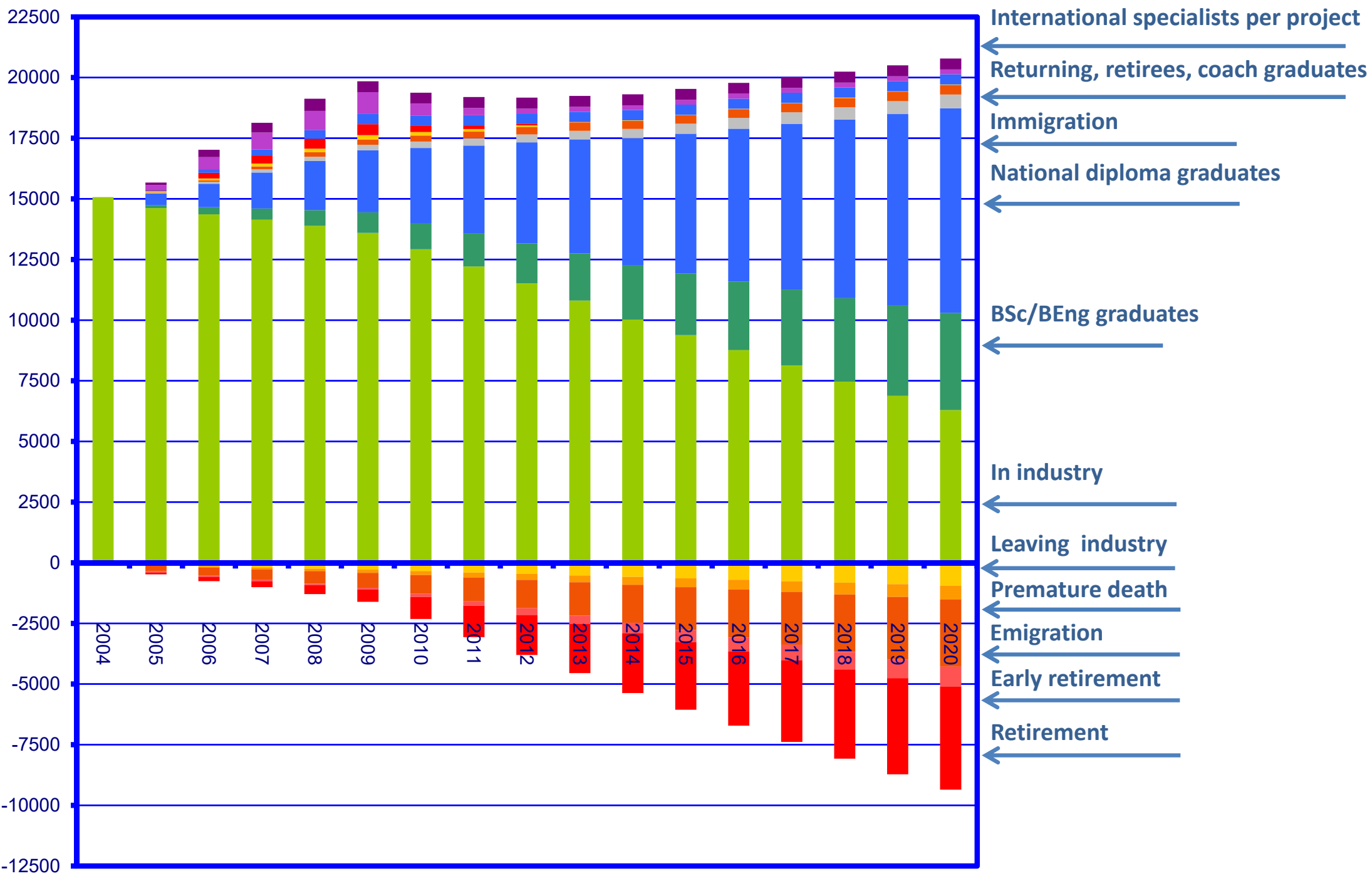




THE NUMBERS AND NEEDS STORY



Insufficient capacity to deliver 2010 SWC and related infrastructure, and large number of retirements looming





TANZANIAN SEAP INITIATIVE

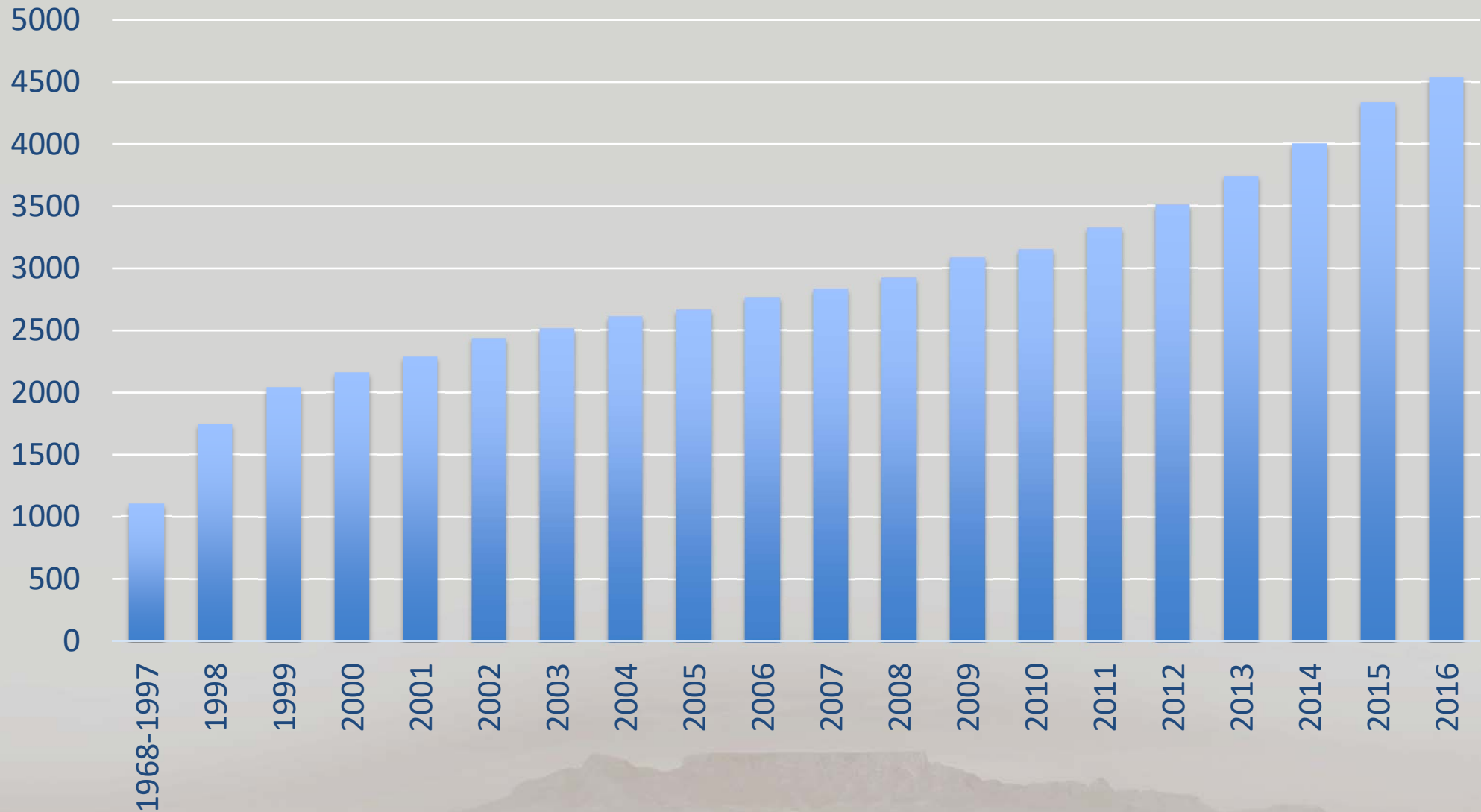
Needed to develop Tanzanian engineers to take over from expatriate capacity leaving the country.

Researched and decided to introduce:

- Structured Engineer Apprenticeship Programmes (SEAP) for graduates
- Continuing Professional Development (CPD) to ensure that engineers keep up to date and remain creative and innovative when problem solving
- Capacity Building to develop the capacity of consulting engineers



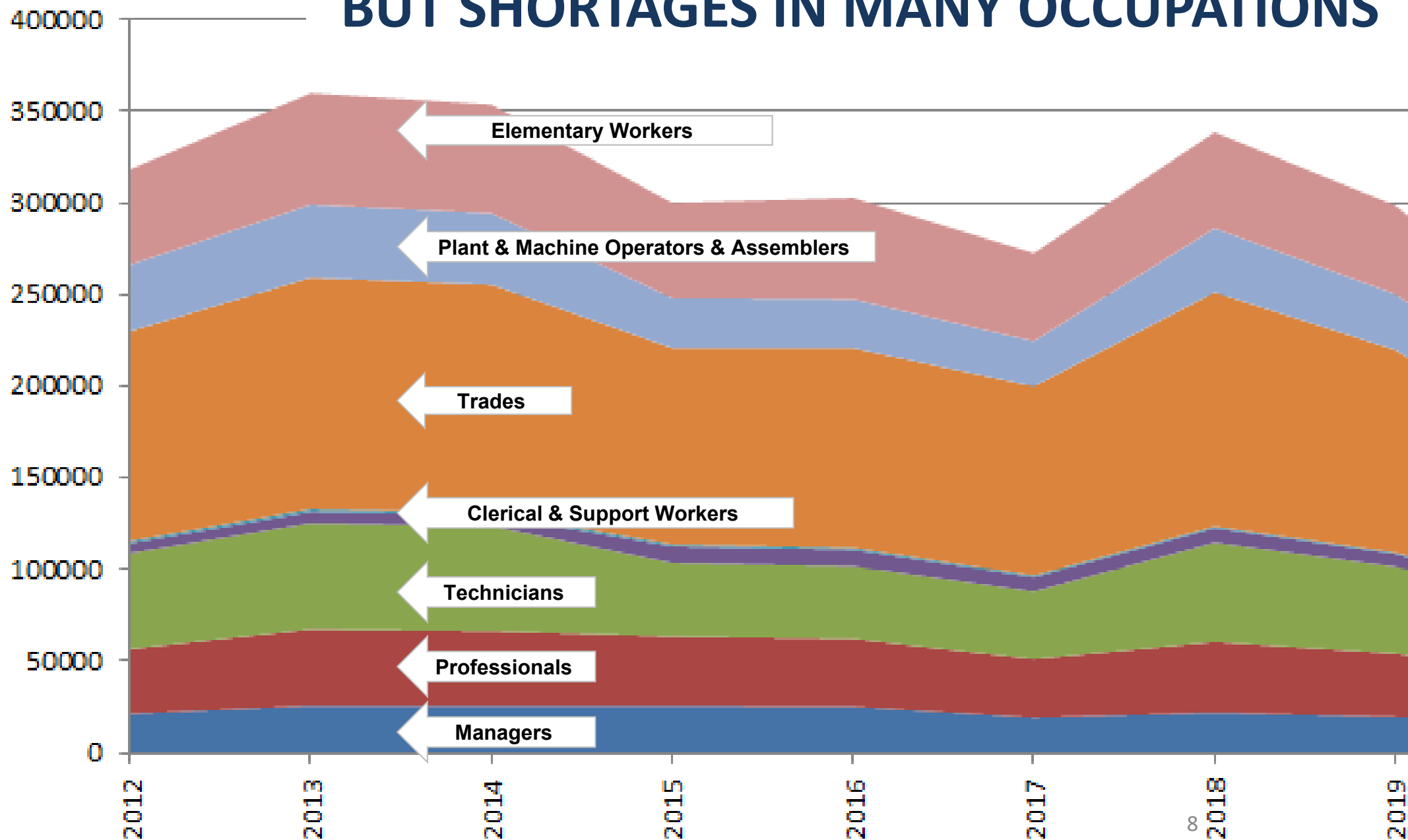
FROM A HANDFUL TO ~4500 P ENG IN 2016!





SA SKILLS DEMAND FOR STRATEGIC INFRASTRUCTURE PROJECTS

BUT SHORTAGES IN MANY OCCUPATIONS





THE SKILLS PIPELINE & SUPPORT REQUIRED



- Career guidance and subject choices
- Quality of education and achieving grades required for occupation
- Funding, throughput – enhancing delivery of tertiary institutions
- Access, new qualifications
- Availability of workplaces for internships and vac training
- Equipment, mentors, supervisors
- Enough workplaces to offer meaningful, structured experience
- Coaching, mentoring, funding
- Achieving professional registration
- Registering bodies and systems to assess
- Expertise through experience, CPD and specialisation
- Where shortages facilitate immigration, secondment, use of retirees



ENGINEERING DISCIPLINES TO BE STUDIED

- Agricultural
- Chemical
- Civil
- Electrical and electronics
- Industrial
- Mechanical including aeronautical and marine
- Mining and metallurgical
- Consider engineers, technologists and technicians



ELEMENTS OF THE STUDY

- Determine numbers in the workforce
- Determine needs based on current workload, demands of policies and planned projects
- Determine inflows
- Identify successful initiatives in place and understand lessons learned
- Determine gaps and how to address them by following existing successful models, and/or developing innovative solutions



WHAT DO WE NEED?

- Contact details of engineering voluntary associations
- Contact details of engineering registration boards
- Policies affecting engineering service delivery
- Studies and lessons learned
- National Development Plans
- Details of national and region projects being planned



WHAT DO WE NEED?

Contact details of technical & skills experts per infrastructure department. We need their views on support required, and to understand the number of engineering staff employed

- Agriculture
- Construction
- Environment
- Infrastructure
- Energy
- Housing
- Mining
- Public Works
- Rails
- Roads and Transport
- Science and Technology
- Telecomms
- Trade and Industry
- Water



WHAT DO WE NEED?

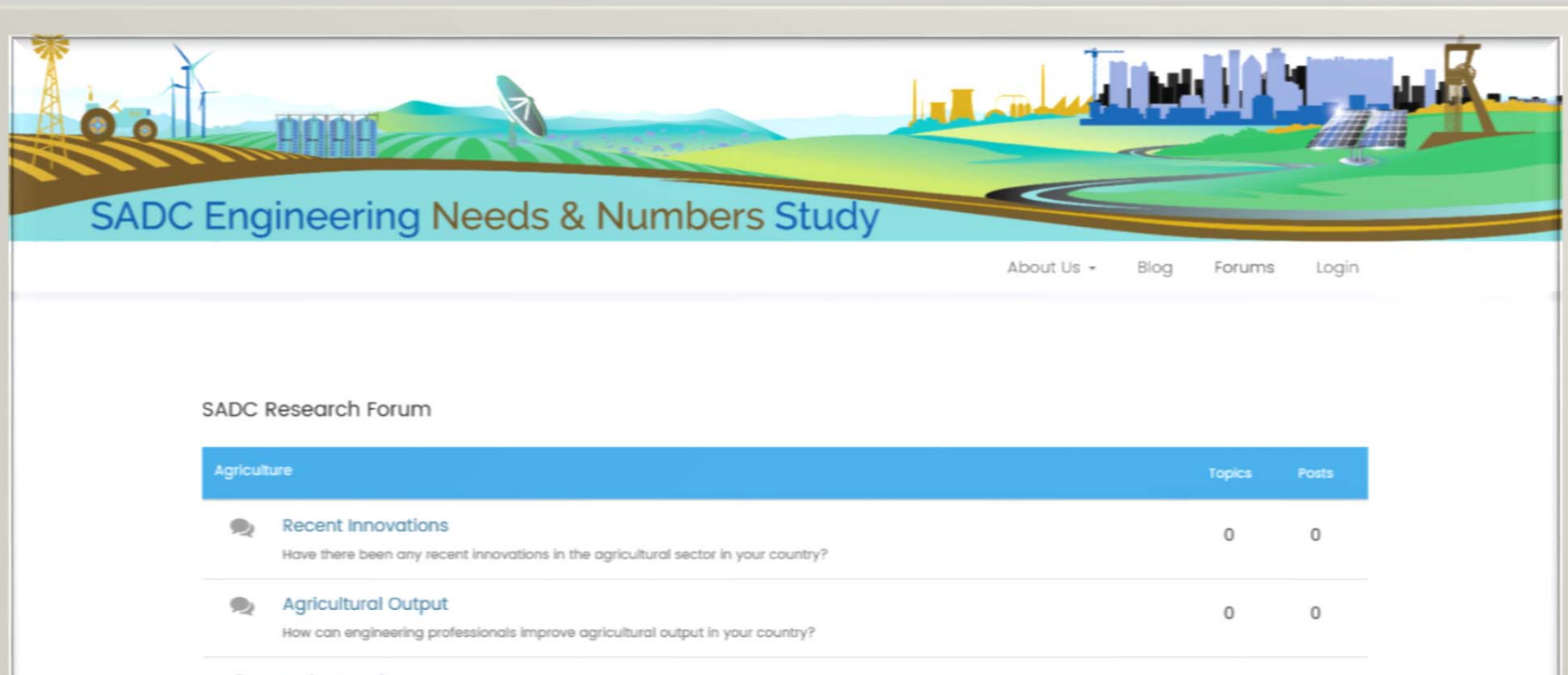
- Details of Technical Directors of largest city & no. of engineering staff employed
- Contact details of Deans of Higher Education Institutions delivering engineering qualifications
- Contact details of statistics department to establish engineering workforce

VISIT STAND 12 TO LET US HAVE ANY CONTACT DETAILS YOU HAVE



WHAT DO WE NEED?

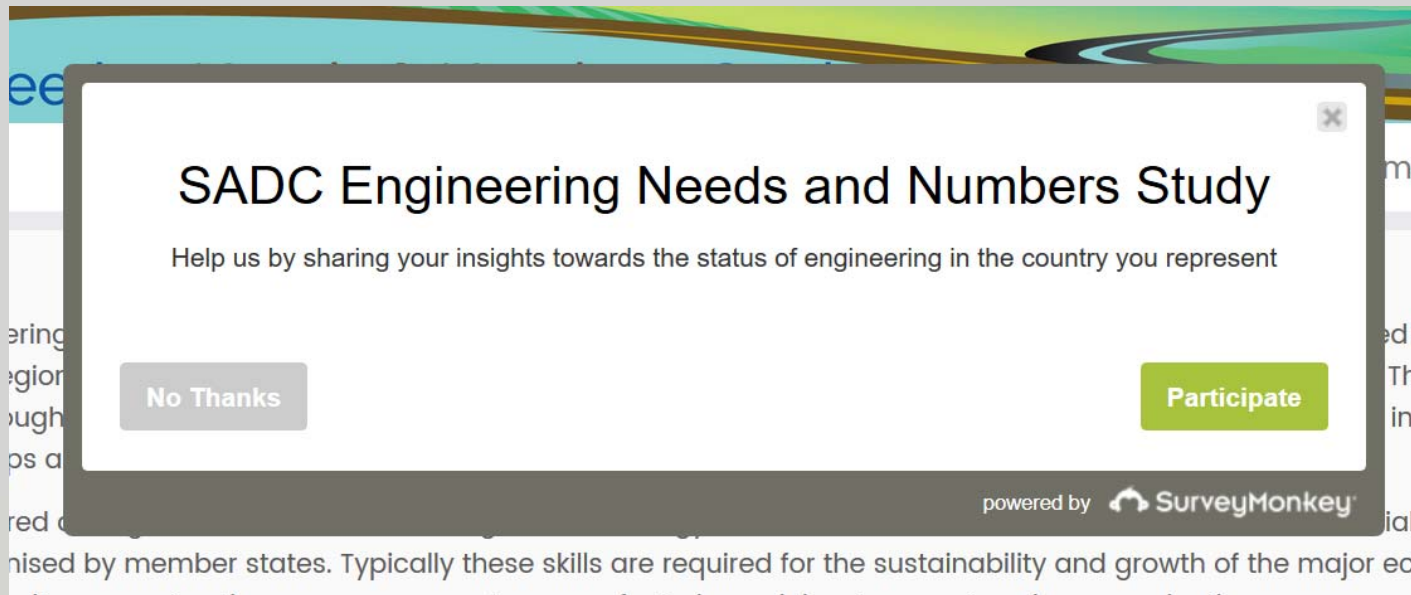
- **YOUR** views on skills challenges and solutions – whether from a SADC country, or delivering services in SADC
- For you and other engineering experts and strategists to register on our Needs and Numbers information sharing portal <http://needsandnumbers.co.za>





WHAT DO WE NEED?

- For you to complete our online survey – go to:
<https://needsandnumbers.co.za>



VISIT STAND 12 TO SHARE YOUR VIEWS



WHAT'S IN IT FOR YOU?

IF YOU

- Fill in questionnaires on our stand, or
- Complete the online survey, or
- Register on our portal, or
- Share views, trends and experiences

**YOU STAND A CHANCE OF WINNING A
SAMSUNG GALAXY TAB E**

**VISIT STAND 12 TO SHARE DATA, CONTACTS AND/OR
SHARE YOUR VIEWS!!!!**

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Thank you for attending



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