

BUILDING THE SKILLS BASE*

NATIONAL CLIMATE CHANGE DIALOGUE CONFERENCE

**12 November 2014; Gallagher Estate,
Midrand**

Mnikeli Ndabambi

www.weathersa.co.za

Core idea

- Get those who care about a particular occupation together to advise government and others on what needs to be done to ensure that blockages are addressed and scarcities avoided ...
- And to get these people to help in every way possible.

First step: which occupation/s?

- Important to focus on those occupations that are genuinely in demand and are scarce;
- Should adopt a systematic approach

Systematic route to identify scarce occupations

- Start with legislative mandate – what functions have to be performed?
- Which agency does what function?
- Is there a optimal organogram for each organisation?
- Compare what you have to that which is optimal
- Two kinds of 'gaps':
 - Vacancies / unfunded posts
 - Positions filled by people who do not have the right profiles (education, experience, ...)
- Are there non-training reasons for these gaps? If so, these need to be addressed (this process cannot address these problems)
- **List scarce occupations (and group them where closely related)**
- **NOW check across different functional areas and decide if you have some of the same occupations on your list. If yes, then ONE process must be followed to accelerate the production of that skill.**

For each occupation - learning pathway/s?



What subjects are needed from school?
Do students know about this/these occupations?

What qualifications need to be studied?
If there are alternatives, what are they?

Is there required simulated learning?
Is this at dedicated sites of learning? Laboratory? Training Centre?

Is there a requirement for supervised workplace learning?

Is there a final assessment that must be taken before a person can operate independently? Who is responsible for this standard?

Once qualified, is there a formal community of expert practitioners? How does a person acquire expertise?

NATIONAL CHALLENGES AT EVERY STAGE OF THE LEARNING PATHWAY?



Not enough students passing with the right subjects
Not enough students know about this occupation
Not enough training places / qualified lecturers ...
Too few students are enrolling in the relevant qualifications
Too many students drop out or fail the relevant qualifications
There are too few facilities for practical learning
Institutions do not have the required equipment/ materials **Not enough workplaces. Not enough qualified mentors/supervisors**
The assessment sites are inaccessible
There is no requirement / benefit to be derived from assessment
Not structured, left to a person's own initiative
International, difficult to access

South African Weather Service: Educational Plan For Weather and Climate For South Africa

SCARCITY OF HUMAN CAPACITY IN SOUTH AFRICA

- As other Scientific Institutions, SAWS is losing scientific personnel nationally and internationally.
- Nationally to other Departments and to Municipalities
- Internationally to other Meteorological Services
- Different Scientific Institutions also have non-integrated efforts to fill the critical skills gap. Efforts are very un-coordinated.

INTEGRATED EDUCATIONAL PLAN

- This Plan integrates national resources
 - to address the identified shortage of skills in weather, climate impact and climate risk reduction and air quality sciences critical to the country.
- This plan addresses key objectives and actions outlined in the National Development Plan (NDP) for South Africa.
- The overall important character of the plan lies in its integration
 - of priorities and objectives across most sectors in the NDP,
 - the mainstreaming of scientific and innovation skill sets that will drive economic performance beyond the specific needs of the meteorological and climate impact sciences.
- The contribution of meteorological and climate impact sciences is articulated in the NDP in respect of
 - contribution to sustainable economic development,
 - innovation as well as
 - creating resilience among communities.

CHALLENGES + IMPACTS

- Climate variability and extreme events are common in SA.
- Extreme weather events such as **floods**, **coastal inundations**, **droughts**, including **wildfires**, have increased, in some cases in frequency and intensity over the past three decades
- Surface air temperatures in South Africa have increased significantly since 1900.
 - Over the past thirty years, most of the country has warmed by about 1°C.
- SA data indicate areas with more extreme dry and wet seasons as well as increases in high daily precipitation amounts.
- Model projections, however, reveal that, by 2050, there will be **significant drying in most of the western and inland parts of the country with a possible wetter trend in eastern parts**.
- Notwithstanding the uncertainty of the science, climate impact loss estimations continue to grow. Costs of extreme weather events since the year 2000, for example, are estimated at R1 billion per annum.
 - Though this figure is conservative taking into account that it is often capturing only first-order impacts.

10

CRITICAL SKILLS-SAWS

Weather and climate impact sciences and their applications therefore are large in scope and include, amongst others:

- Meteorology;
- Climatology;
- Air quality;
- Agro-meteorology;
- Hydro-meteorology;
- Health;
- Early warning and disaster management;
- Alternative energy.

NATIONAL CLIMATE CHANGE RESPONSE

- The National Climate Change Response White Paper identifies climate change education as
 - fundamental to future development pathways and
 - the well-being of South African society.
- This would require, among other things,
 - that climate change and related environmental issues be included in all relevant aspects of formal education curriculum,
 - an emphasis on qualitative research of the human resource needs for a green transition as well as other societal adaptation strategies and needs.

MOVING FORWARD

- There is an urgent need to enable the development of
 - effective local adaptation and mitigation strategies
 - including effective national and local risk reduction efforts.
- For South Africa and the Southern African Region, it has therefore become essential not to only focus on **the long-term** climate in order to facilitate adaptation, but also on **daily weather patterns**, which in some cases have a more direct influence on the economy and social society.
 - in most cases, these influences exacerbate existing stresses (e.g. through floods, structural damage, agricultural disasters, disease outbreaks etc.)
- It is only through integrated efforts which can succeed when responding to these Climate Change and variability impacts.

MAIN DESIRED OUTCOME

- The main outcome of this project will be able to build capacity
 - that addresses the critical need that is already visible in the country (note, for example, the recent cases of flooding in the past few years, not least the impacts recorded towards the end of 2012 and 2013 and the extreme heat recorded in 2013)
 - also to address the scientific capacity needs that need to be developed.
- It is important for this project to establish the scientific need that the municipalities will have in the next 5, 10 and 15 years.
 - A questionnaire was sent to the Disaster Managers within the municipalities in an attempt to establish what they regard as important skills for them.

14

Created Occupational Teams

- Climatology and Alternative Energy, led by Prof Themba Dube
- Air quality and health environment led by Dr Gregor Feig
- Meteorology (inclusive of Marine) led by Dr Winifred Jordaan,
- Argo-meteorology led by Dr Nhlonipho Nhlabatsi
- Early warning and disaster management, led by Ms Modiegi Setshu
- Hydro-Meteorology (Investigate the options Dr W Jordaan)
- Oceanography (link with oceanography groups already in existence)



Thank you!!