

BRANCH: INSPECTION AND ENFORCEMENT SERVICES

CHIEF DIRECTORATE: OCCUPATIONAL HEALTH & SAFETY

**EFFECT OF GLOBAL WARMING
IN THE AGRICULTURAL SECTOR**

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Durban

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OUTLINE

- Introduction
- Heat stress and decent work
- Projected incidence of heat stress worldwide in 2085
- SA climate change projections
- Effects of heat in the workplace
- Case of Northern Cape: Kakamas
- Social and development impacts and relationship to NDP & SDGS
- Response to reduce social, economic and health impacts in the world of work
- Take home message



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INTRODUCTION

- Climate projections indicate an upward trend in the frequency and intensity of extreme weather events.
- The rise in global temperatures caused by climate change:
 - ✓ Make the phenomenon of “heat stress” more common.
 - ✓ Increases workers’ occupational risks and vulnerability to heat stress
 - ✓ Can lead to heatstroke and, ultimately, even to death.



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Heat stress and decent work

- Heat stress poses a challenge to Decent Work and requires more attention:
 - ✓ Negative impact economy
 - ✓ Economic losses occur at:
 - Worker and family level,
 - Organizational level and
 - Community level.
- The economic, health and social ramifications of rising heat in the workplace requires an urgent response from all stakeholders



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Heat stress and decent work

- Heat is an occupational safety and health hazard:
 - ✓ Excessive heat during work:
 - Creates occupational health risks
 - Restricts a worker's physical functions and capabilities, work capacity and productivity
 - Can lead to heatstroke, sometimes even with a fatal outcome



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Heat stress and decent work

- Workers in all sectors are affected, sectors are at risk because the work is more physically demanding and takes place outdoors.
 - ✓ Agricultural sector
 - ✓ Construction
 - ✓ Informal traders
 - ✓ Refuse collection
- Workers in indoor settings are also at risk if temperature levels are not managed properly
- At high heat levels, performing even basic office & desk tasks becomes difficult as mental fatigue sets in.



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Heat stress and decent work

➤ The economic losses due to heat stress:

- ✓ 1995 estimates ~ US\$280 billion
- ✓ Future projection show increase to US\$2,400 billion in 2030
- ✓ Impact of heat stress is more pronounced in lower-middle- and low-income countries.

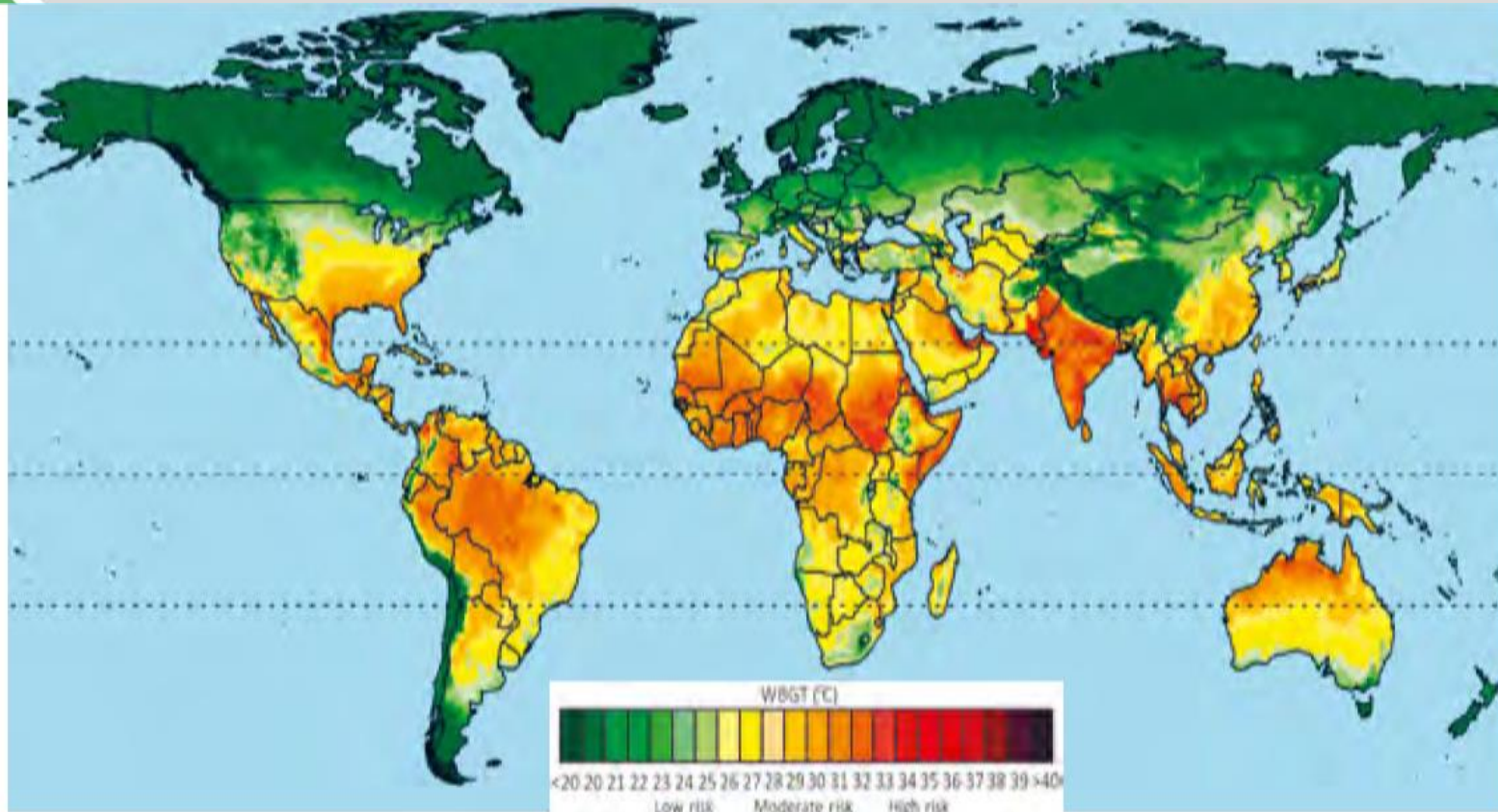


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Projected incidence of heat stress worldwide in 2085



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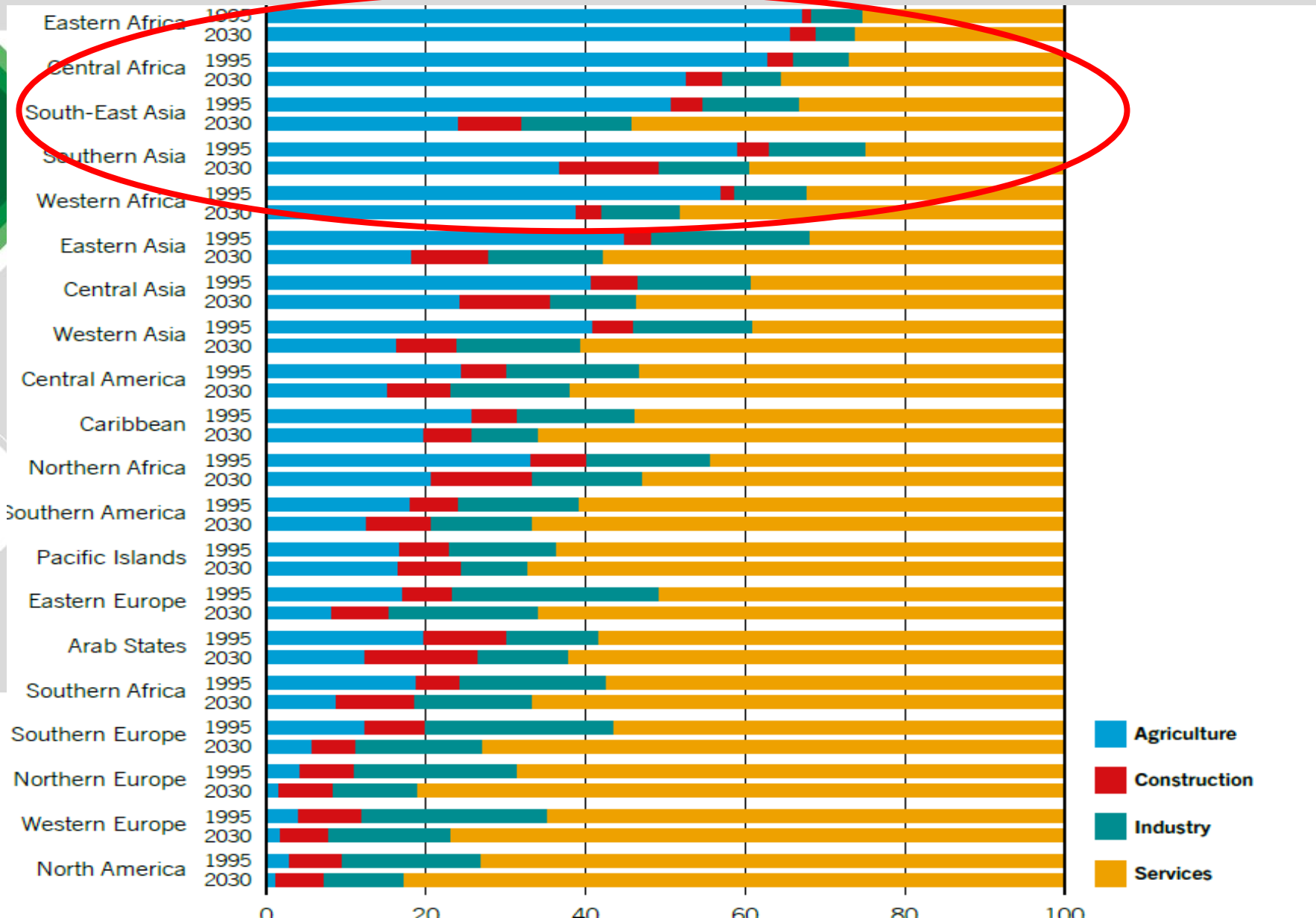
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Projected incidence of heat stress worldwide in 2085

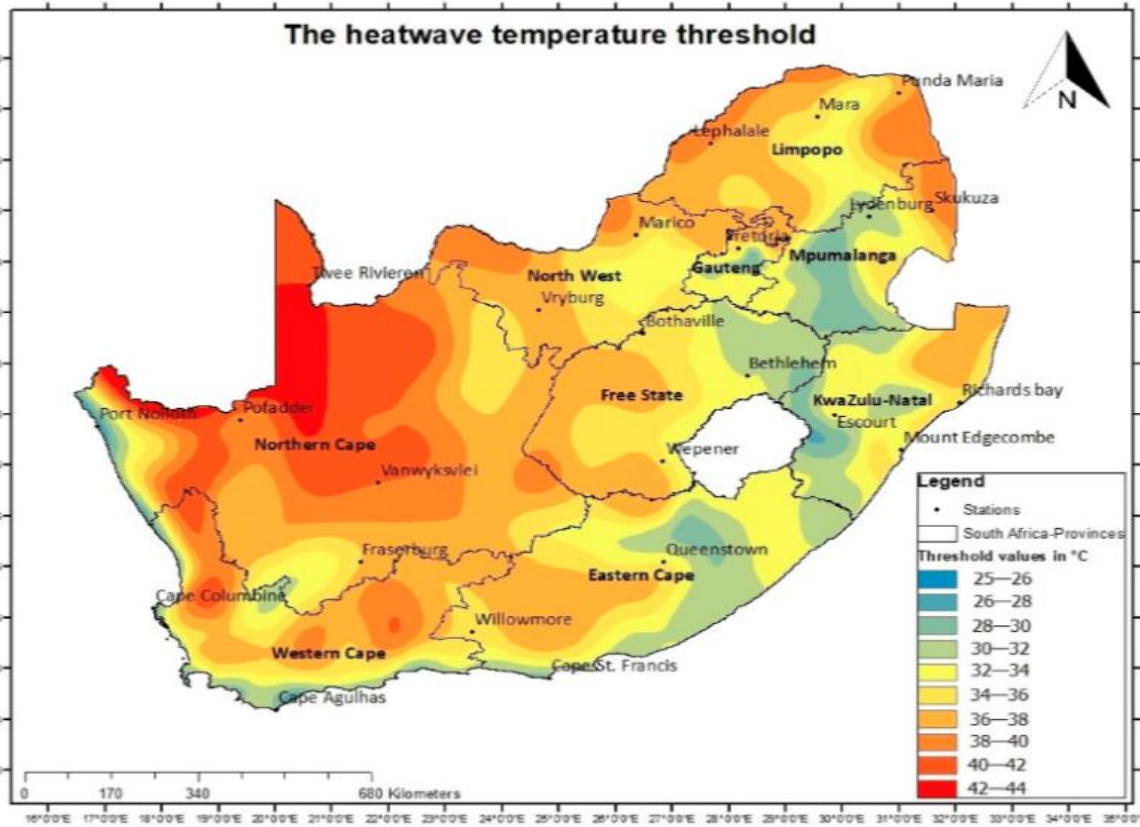
Region	Subregion	Mean annual temperature (°C)	Increase under 1.5°C global warming scenario (RCP2.6)		Increase under 2.7°C global warming scenario (RCP6.0)	
		1995	2025	2085	2025	2085
Africa	Northern Africa	+23.7	1.2	1.5	1.1	3.1
	Central Africa	+24.5	1.2	1.3	1.0	3.0
	Eastern Africa	+23.6	1.0	1.1	0.9	2.7
	Southern Africa	+19.5	1.1	1.2	0.9	3.0
	Western Africa	+27.6	1.1	1.3	1.0	3.0
Americas	Caribbean	+25.5	1.0	1.0	0.7	2.1
	Central America	+22.4	1.0	1.1	0.8	2.6
	South America	+21.1	1.0	1.1	0.8	2.5
	North America	-4.5	1.6	2.1	1.6	4.4
Arab States		+24.0	1.3	1.6	1.2	3.4
Asia and the Pacific	Eastern Asia	+6.3	1.3	1.7	1.2	3.2
	South-East Asia	+25.6	0.8	1.0	0.8	2.2
	Pacific Islands	+21.8	1.0	1.2	1.0	2.6
	Southern Asia	+20.5	1.1	1.4	1.0	3.0
Europe and Central Asia	Northern Europe	+3.8	1.5	1.8	1.5	3.3
	Southern Europe	+13.5	1.2	1.6	1.1	2.8
	Western Europe	+9.7	1.2	1.5	1.2	2.9
	Eastern Europe	-4.6	2.0	2.4	1.8	4.8
	Central Asia	+7.8	1.8	1.8	1.6	3.8
	Western Asia	+11.5	1.2	1.5	1.1	3.1



Sectoral composition of total employment by subregion, 1995 and projections for 2030 (percentages)



SA climate change projections



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SA climate change projections

- The number of HWs in the immediate future period of 2010 to 2039 is projected to be higher than the HW frequency in 1983–2012.
- Simulations for 2010–2039 indicate a slight increase in the overall number of HW frequency in South Africa
- Simulations were in agreement with observations that the northern parts of the country experiences the highest temperatures, as indicated by the higher number of HW occurrences.



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EFFECTS OF HEAT IN THE WORKPLACE

- The core body temperature of every human needs to be kept close to 37°C in order to avoid serious health risks.
- Actual heat stress on a working person is also affected by the:
 - ✓ Intensity of work (metabolic rate) and
 - ✓ Clothing used
- Another indirect effect of increasing heat is a likely increase of exposures to hazardous chemical agents
- At higher temperatures chemicals in workplaces evaporate more quickly and the chemical amounts that the workers inhale from the workplace air may increase creating an increased risk of poisoning.



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EFFECTS OF HEAT IN THE WORKPLACE

- Agricultural sector is the major employment sector in most of the subregions within Africa
- At the same time, the subregions exhibit moderate to high risk of exposure to heat stress.
- The combination of high agricultural employment and geographical location:
 - ✓ Makes the subregions prone to severe heat-related impacts, intensifying the associated health risks for workers
 - ✓ Increasing the number of working hours lost.



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Case of Northern Cape: Kakamas

- For the period of 9 – 20 January 2023, there was a consistent heat wave, the average was about 41⁰C, and this was cumulative exposure for the workers.
- Four farm workers lost their lives due to heat stroke
- Nature of work
 - ✓ Harvesting of grapes
 - ✓ Cutting of residual grapes that are not fit for harvesting
 - ✓ Preparation and loading of carts (for drying of grapes)



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Case of Northern Cape: Kakamas

- Preventive measures by the farmers:
 - ✓ Provision of clean & cool water
 - ✓ Policy on cool clothing (not enforced)
 - ✓ Rest periods
 - ✓ Change in shift patterns (earlier start time)
- Observations:
 - ✓ Generic risk assessment (same consultant)
 - ✓ Impervious, non-venting and non-sweat-wicking clothing as this was the case with all the farm workers;
 - ✓ Labour intensive work;
 - ✓ Not all farm workers had access shade through the shade provided by the covered vineyards
 - ✓ Not all farm workers had access to clean and cool water
 - ✓ NO prompt emergency response
 - ✓ Possible use of alcohol



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Case of Northern Cape: Kakamas

➤ Recommendations:

- ✓ Provide adequate rest breaks, preferably under shade or in a cool rest area.
- ✓ Appropriate mechanical aids to reduce workloads and that tasks performed in hot agricultural environments are well designed ergonomically to minimize physical stress.
- ✓ Tropical reflective clothing and head gear where heat gain is mostly by radiation;
- ✓ Employers should make available sufficient quantities of clean drinking water,
- ✓ Adequate supervision
- ✓ Prompt emergency response



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SOCIAL AND DEVELOPMENT IMPACTS AND RELATIONSHIP TO NDP & SDGS

- Work is an essential part of social and economic development at all levels:
 - ✓ the family,
 - ✓ the local community,
 - ✓ the country,
 - ✓ the region and
 - ✓ the whole planet
- The effect of rising heat in the workplace will continue to present multi-faceted challenges on family income, health and nutrition, inequalities and jobs and community sustainability



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SOCIAL AND DEVELOPMENT IMPACTS AND RELATIONSHIP TO NDP, AU AGENDA & SDGS

NDP Outcome	Agenda 2063 Goals	SDG	FOCUS	CLIMATE CHANGE: IMPACT OF RISING WORKPLACE HEAT
2	3 (Healthy and well-nourished citizens.)	3	Good Health	<p>Large-scale exposure to heat injury and health risks such as:</p> <ul style="list-style-type: none"> - heat stroke, exhaustion and even death will frustrate efforts to improve health. - Migrants can be especially vulnerable to health risks as they may not have access to health care and occupational health and safety services in their destination country.
4	4 (Transformed economies)	8	Good Jobs and Economic Growth	<p>New heat extremes make it more difficult for international standards and guidelines for occupational health and safety of workers to be respected, and economic consequences are large in scale.</p>



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SOCIAL AND DEVELOPMENT IMPACTS AND RELATIONSHIP TO NDP, AU AGENDA & SDGS

NDP Outcome	Agenda 2063 Goals	SDG	FOCUS	CLIMATE CHANGE: IMPACT OF RISING WORKPLACE HEAT
7	1 (A high standard of living, quality of life and well-being for all citizens.)	1	No poverty	<ul style="list-style-type: none"> - The lowest-income groups, in particular agricultural workers, small-scale and subsistence farmers, and casual workers in urban areas in tropical and subtropical developing countries are worst affected. - Social protection systems in these countries tend to provide only limited coverage.
14	17 (Full gender equality in all spheres of life..)	5	Gender equality	<ul style="list-style-type: none"> - Many heat-exposed occupational functions involve women and men differently, especially in developing countries. - Pregnancy adds to the risks of heat exposure.



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RESPONSE TO REDUCE SOCIAL, ECONOMIC AND HEALTH IMPACTS IN THE WORLD OF WORK

- Green jobs – to respond to climate change challenges
- Preventive policies and actions are therefore sorely needed at local, national, regional and global level.
- Adaptable workplace policies to respond to identified challenges
- Special programmes for identified sectors
 - ✓ Health nutrition
 - ✓ Capacity development and strengthening



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RESPONSE TO REDUCE SOCIAL, ECONOMIC AND HEALTH IMPACTS IN THE WORLD OF WORK

- Businesses strive to become more sustainable, OHS professionals need to demonstrate:
 - ✓ A broad range of competencies, to embed good health, safety and wellbeing effectively in workplace cultures.
 - ✓ Strong technical skills, they need both soft and business skills that equip them to influence and drive change.

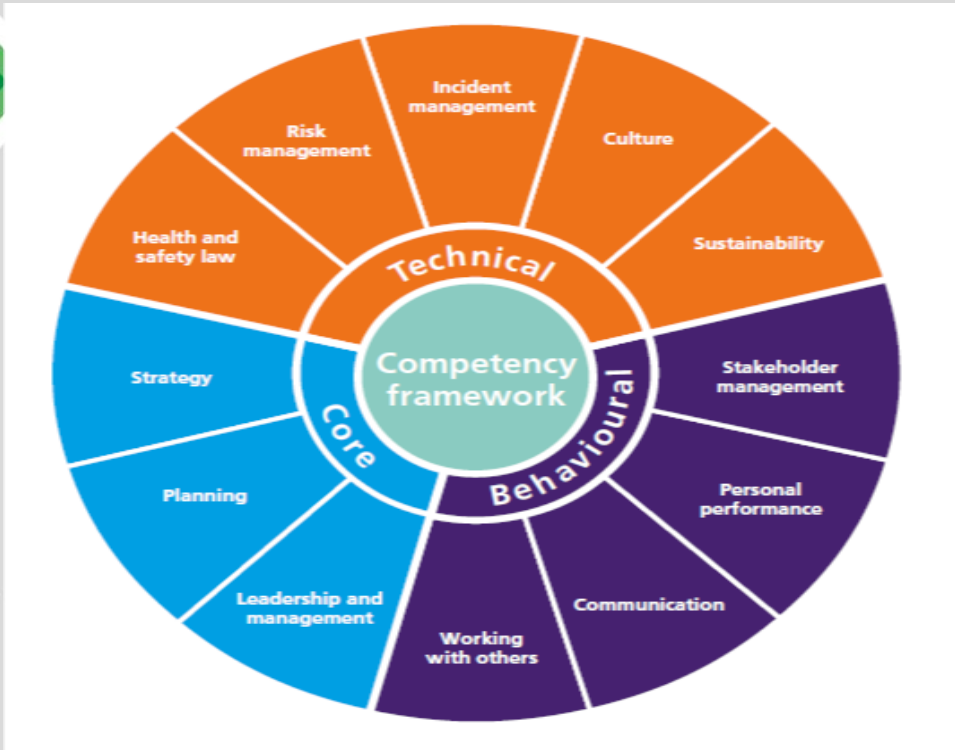


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RESPONSE TO REDUCE SOCIAL, ECONOMIC AND HEALTH IMPACTS IN THE WORLD OF WORK



Source: Institution of Occupational Safety and Health



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RESPONSE TO REDUCE SOCIAL, ECONOMIC AND HEALTH IMPACTS IN THE WORLD OF WORK

- With OHS being the fifth principle on the fundamental principles & rights at work, greater responsibility is placed upon all role players
- Proper response (no silo approach) is required to promote and improve prevention efforts.

**ANTICIPATION
OF
NEW OHS RISKS**

**MULTIDISCIPLINARY
APPROACH IN
MANAGING
OHS**

**BUILDING
COMPETENCE
ON OHS**

**WIDENING THE HORIZON:
THE LINK
TO PUBLIC HEALTH
(Lessons from COVID-19)**

**INTERNATIONAL LABOUR
STANDARDS AND
OTHER INSTRUMENTS
ON OHS**

**REINFORCING THE ROLE
OF GOVERNMENTS AND
SOCIAL PARTNERS AND
EXPANDING
PARTNERSHIPS**



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TAKE HOME MESSAGE

NDP, AGENDA 2063 AND SDGs

Long term plans that provide a shared development vision for all stakeholders within the country, in the continent and the world



NDP VISION 2030

Fight poverty, inequality and unemployment



AFRICA AGENDA 2063

Prosperous Africa based on inclusive growth and sustainable development



SDGS 2030

End poverty, protect the planet and ensure prosperity for all

Mutually reinforcing agendas: Agenda 2063 focus also relate to the AU's Pan-African drive, African cultural identity, common heritage, values and ethics; the African Renaissance; and the strong focus on the security agenda



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TAKE HOME MESSAGE

DEL has never accepted the proposition that
injury and disease

“go with the job”

"Do the best you can until you know better. Then when
you know better, do better."

Maya Angelou



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Resources

1. ILO
2. NDP
3. AU
4. UNDP



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Asante Sana...



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