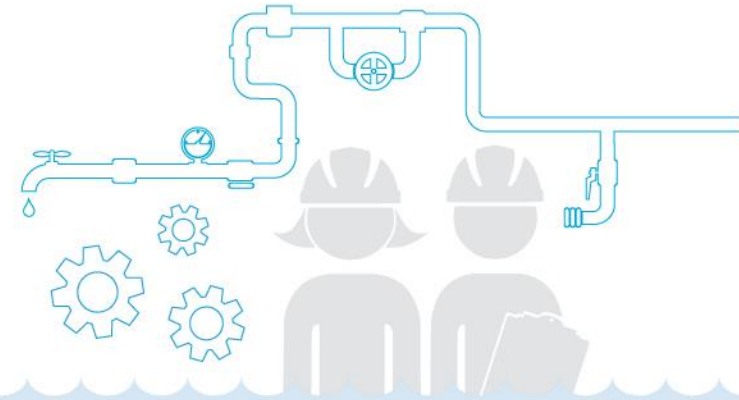




NCPC
 NATIONAL CLEANER PRODUCTION CENTRE
 — SOUTH AFRICA —



Industrial Water Efficiency project

15 February 2022

Lindani Ncwane, Project Manager – NCPC-SA



www.ncpc.co.za

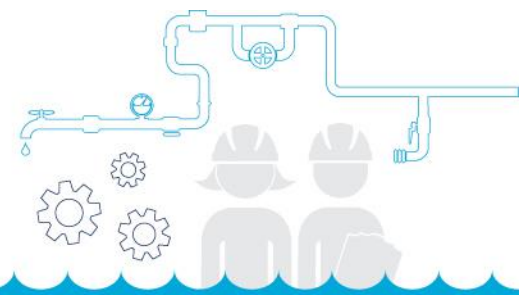


the dtic
 Department:
 Trade, Industry and Competition
 REPUBLIC OF SOUTH AFRICA



CSIR
 Touching lives through innovation

OVERVIEW

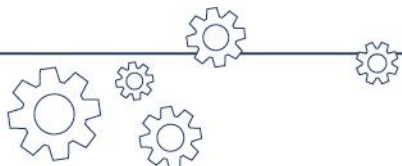


 About the **NCPC-SA**

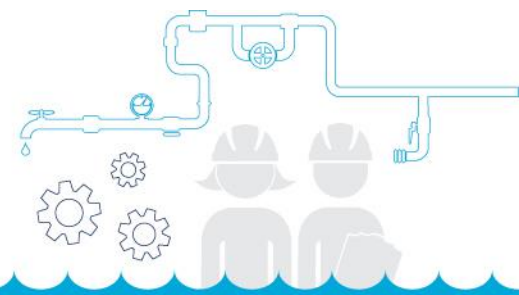
 South Africa's **water challenges** and **NCPC-SA's response**

 A look into the work we've done: **Case study**

 **Current and future work**



ABOUT THE NCPC-SA

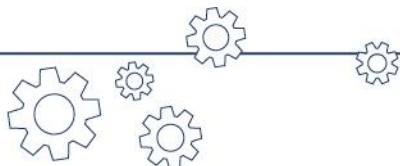


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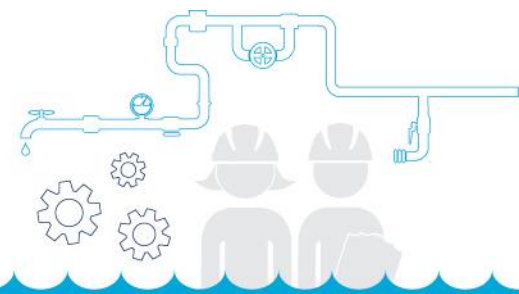
NATIONAL CLEANER PRODUCTION CENTRE
— SOUTH AFRICA —

The National Cleaner Production Centre South Africa (NCPC-SA) supports South African industry to **improve competitiveness** and reduce **environmental footprint** through the implementation of **resource efficient and cleaner production (RECP)** methodologies.

A programme of *the dtic* hosted by the **CSIR**



SERVICE TO INDUSTRY



The NCPC-SA services are highly subsidised, and are aimed at stimulating and supporting the uptake of RECP by industry:



Assessments & Implementation

Energy, water, materials, waste efficiency



Skills development

Training courses
Internship programme



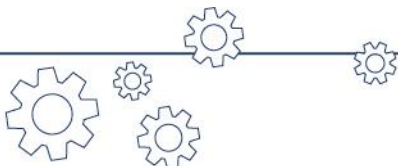
RECP Tools

Online tools and sector guides

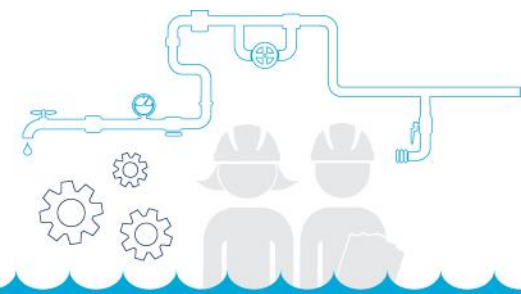


Advocacy

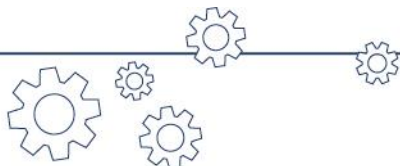
Workshops, awareness & policy advice



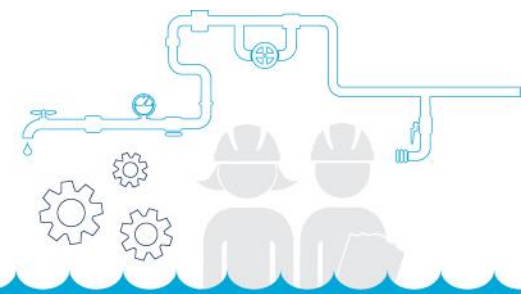
OUR FLAGSHIP PROJECTS



The NCPC-SA applies RECP in three main thematic areas. Each of these is driven through a flagship project or programme:



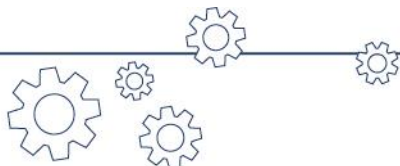
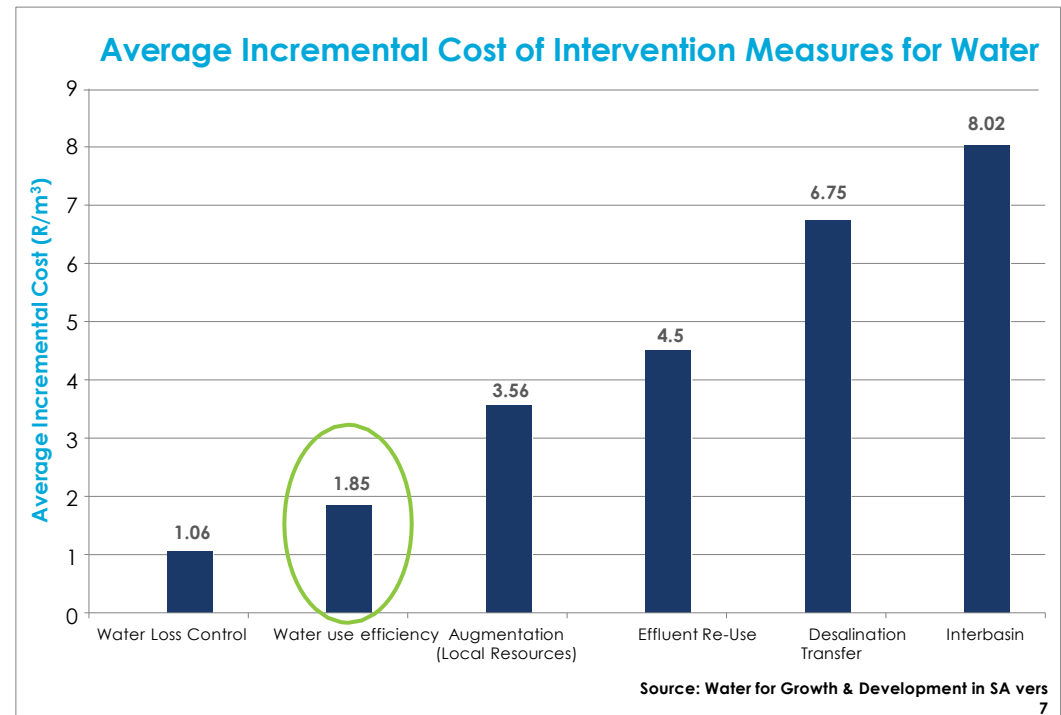
SOUTH AFRICA'S WATER CHALLENGES AND NCPC-SA'S RESPONSE



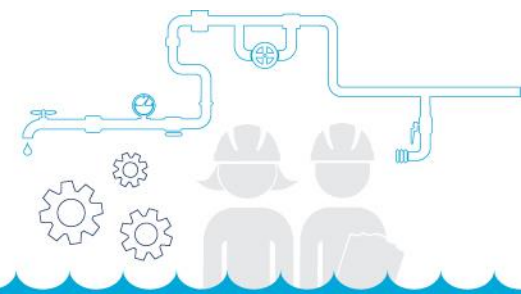
- Water scarcity and security (Extended droughts and aging water infrastructure)
- Inconsistent policy and regulation (Preferential effluent charges for high volumes)
- Unreliable water supply and quality
- Limited investment in water efficiency measures and programmes
- Limited knowledge and skills in water conservation and effluent management.
- IE learning demonstrated opportunity potential for dedicated projects

HOW

- Water Efficiency - 2nd biggest response opportunity after Loss control



SOUTH AFRICA'S WATER CHALLENGES AND NCPC-SA'S RESPONSE



The NCPC-SA through the Industrial Water Efficiency (IWE) project aims to reduce water consumption and improve industrial water effluent quality with a focus on the following areas:



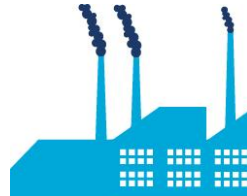
Facilitating an enabling **policy environment** for the implementation of water efficiency by industry.



Establishing and promoting the adoption (by industry) of national and international **standards** for water management.



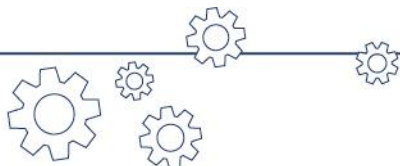
Developing the relevant **skills** to support industry to implement water efficiency through training.



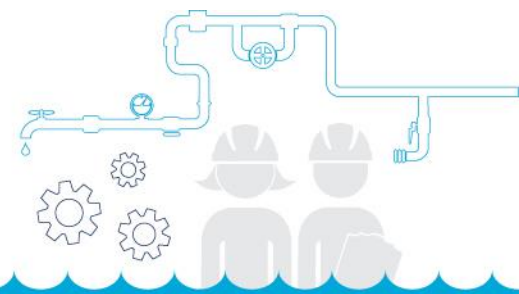
Supporting industry plants to **implement** water efficiency to demonstrate the benefits.



Deliver focused **advocacy and awareness** campaigns to promote the adoption of water efficiency by industry.



OUR WATER PROJECT DELIVERY PARTNERS



water & sanitation

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Water and Sanitation
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WATER
RESEARCH
COMMISSION



**MINISTRY OF FOREIGN AFFAIRS
OF DENMARK**

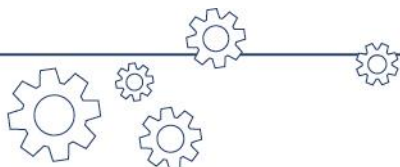
Denmark in South Africa



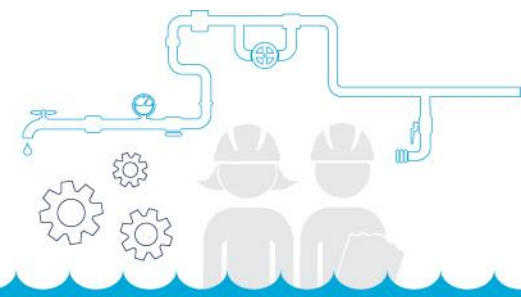
IFC

**International
Finance Corporation**
WORLD BANK GROUP

Creating Markets, Creating Opportunities



CASE STUDY: CHICKEN PROCESSING FACILITY



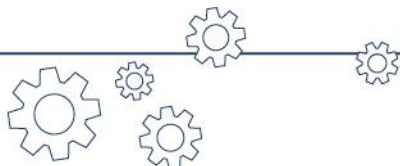
Site Details:

- Chicken processing facility located in North West
- Increasing water costs (18% – 20% per annum)
- Facility consumption contributes to approx. 2% of municipal supply in water stressed region

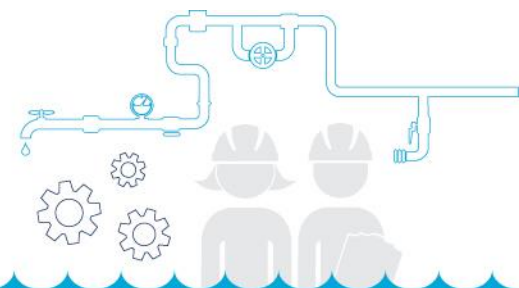
Site Approach:

- NCPC-SA engaged to undertake water balance and plot consumption patterns and trends
- High water use areas identified and options explored to reduce consumption

Resource	Usage During 2015	Usage per annum (Rand)
Water (kL)	1 132 907	18 121 741
Number of Birds Slaughtered	75 165 920	N/A



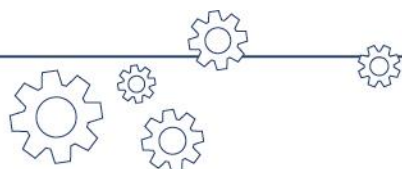
CASE STUDY: SAVINGS ACHIEVED



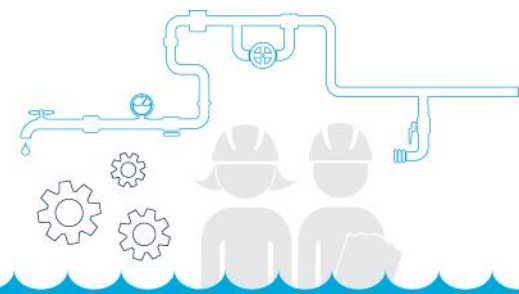
Resource	Intervention	Utility saving (Units/yr)	Cost (R)	Savings (R/yr)	Payback (months / years)	Year	GHG Emission Reduction (kg CO _{2e} /yr)
Water (kL)	Installation of shut off valves at evisceration, upgrade of cleaning water system and general improved WUE awareness.	89 607	0	1 780 554	Immediate	2017	N/A
Energy – Boiler Fuel Coal (GJ)	Fixing hot water leaks, thereby also saving coal.	94.3	0	2 836	Immediate	2017	9 062
Effluent volume (kL)	Reducing water usage also lead to a proportional reduction in effluent volume.	89 607	0	419 914	Immediate	2017	N/A

Period	Total Water Usage (kL)	Total Production Count (Number of Birds)	Water Use Intensity (L/bird)
2015	1 132 907	75 165 920	15.07
2016 *	1 247 494	80 313 717	15.53
Jan 2017 to Nov 2017	1 036 712	74 728 878	13.87

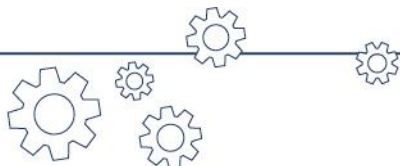
* Implementation undertaken in Nov 2016



CURRENT AND FUTURE WORK



- Publication of Water Audit Protocol
- Publication of Agri-Processing Food Processing guideline of Common Improvement Interventions
- Qualitative Water Loss Logging Tool Development of Water Training module (2-day)
- Guideline of Common Improvement Interventions Qualitative Water Loss Logging Tool Development of Water Training module (2-day)
- Water & Energy Monitoring and Metering guideline for Agro-Processing Sector (SA/Danish Partnership & IFC)
- Monitoring & Metering Pilot and guideline for dairy sector (SA/Danish Partnership & IFC)
- Industrial Online Water Workshop - 17 February 2022 (Registrations on the NCPC-SA website)**





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THANK YOU



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