

PROCESS AND LESSONS LEARNED IN DEVELOPING A LOCAL IMPLEMENTATION GUIDELINE FOR MANAGED AQUIFER RECHARGE IN COMBINATION WITH BLUE-GREEN INFRASTRUCTURE

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THEME 8: Awareness, Education and training on MAR

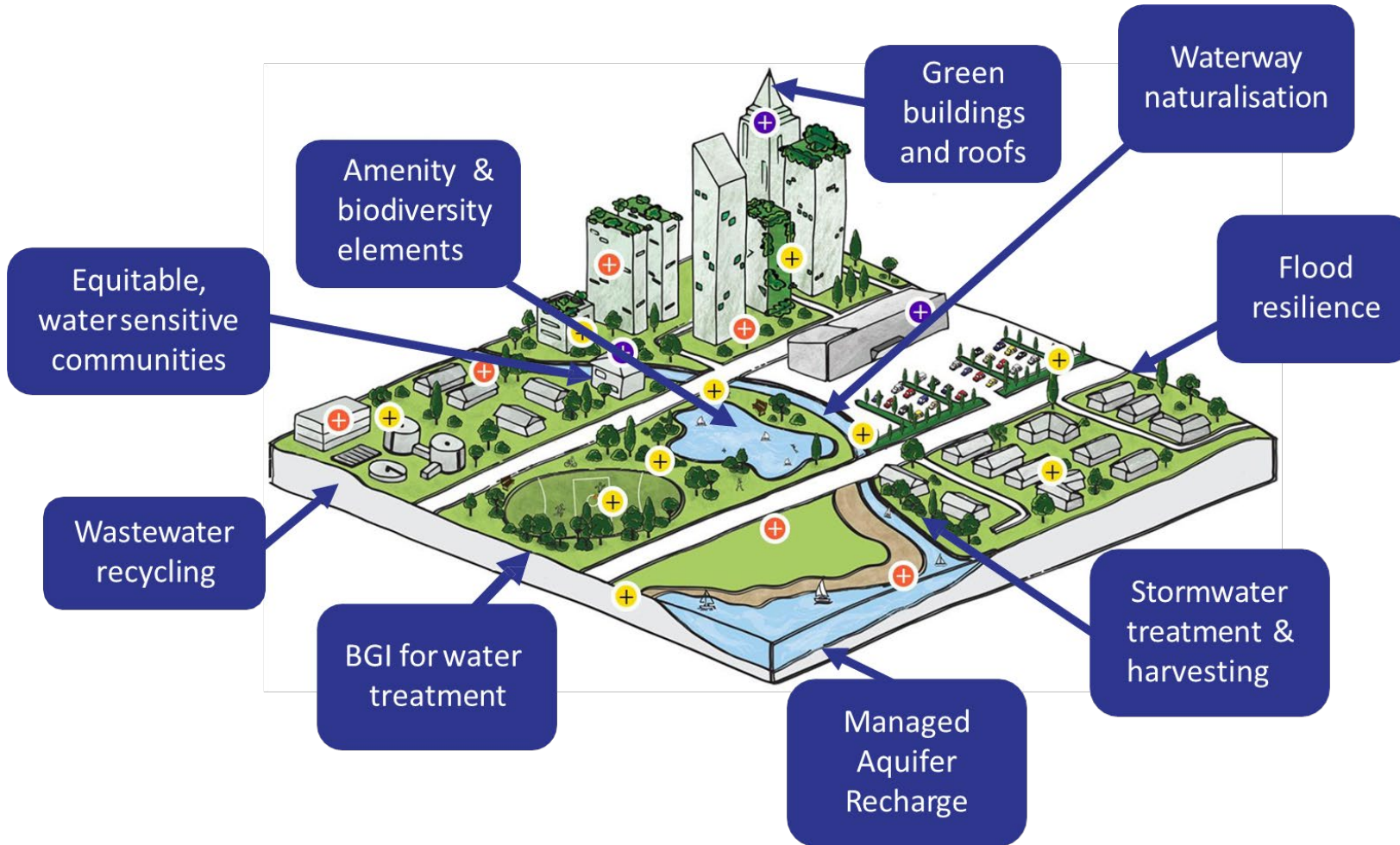
WATER RESOURCE MANAGEMENT CHALLENGES



- Climate change impacts
 - Low rainfall, high evaporation, water scarcity
 - Intense storms, flooding
- Urbanisation, population growth
- Poorly planned development
- Services backlogs, infrastructure deficits, poor water quality
- Leakage / wastage (NRW 36%)
- Environmental degradation

...the availability of water of acceptable quality is predicted to be the single greatest and most urgent development constraint facing South Africa” (Scholes, 2001)

WATER SENSITIVE CITIES

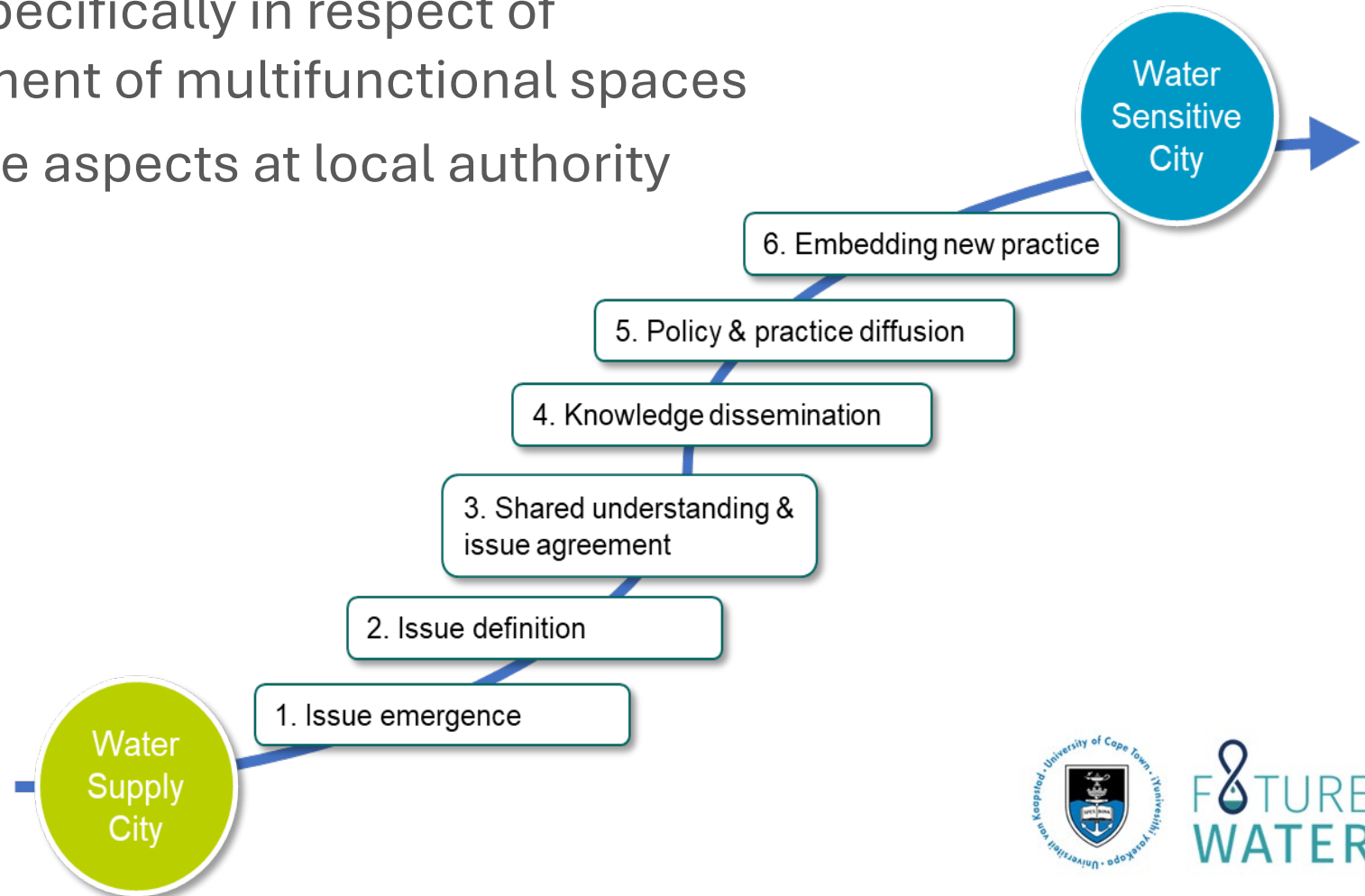


Blue-green infrastructure (BGI) paired with managed aquifer recharge (MAR):

- collects, cleanses and stores stormwater, infiltrates to aquifer
- reduces flood risks
- protects/recovers natural habitats – enriches biodiversity
- creates aesthetically appealing public space

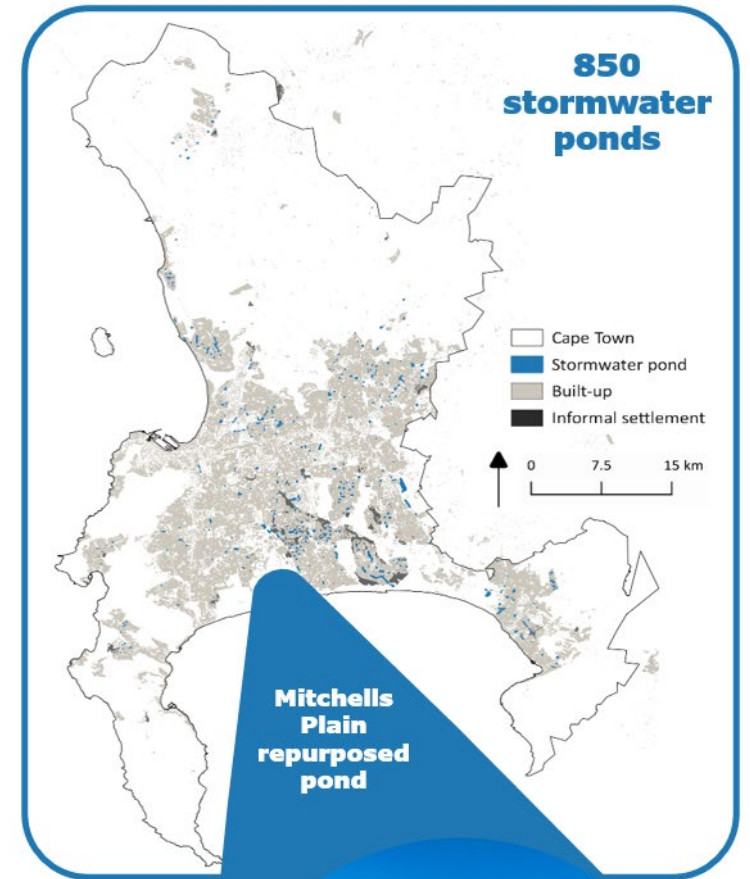
WATER SENSITIVE CITY TRANSITIONS

- Porous design interventions across the city, with contiguous green / blue spaces
- Local level involvement – specifically in respect of maintenance and management of multifunctional spaces
- Institutional and governance aspects at local authority level



MAR BGI PROJECT

- WRC-funded “Implementation guideline for managed aquifer recharge (MAR) in combination with blue-green infrastructure at local settlement level” - MAR BGI project
- Case site from Danida MFA-funded “Pathways to Water Resilient South African Cities” - PaWS project
 - Retrofitted stormwater pond in Mitchells Plain, Cape Town, South Africa



RESEARCH APPROACH

1. Scope, analyse and synthesize policy relating to retrofitting stormwater ponds with BGI to enhance MAR (WP1)
2. In-depth research on experiences of people living alongside BGI interventions to understand barriers and facilitators to MAR-BGI (WP2)
3. Develop guidelines for stormwater pond retrofitting using BGI that is beneficial to local residents, whilst also contributing to Cape Town's MAR efforts (WP2)

WP2

Ethnographic fieldwork to explore implementation facilitators and barriers (local community and CoCT):

- Workshops
- Interviews
- Community events/activities
- Focus group discussions
- Participant observation

Develop MAR-BGI guidelines

EXPLORING IMPLEMENTATION FACILITATORS AND BARRIERS

Interviews with groundwater consultants, 2023

- MAR-BGI site selection criteria and no go areas
- Local groundwater initiatives / programmes
- Maintenance and management - clogging, sediment, etc.
- Local engagement
- Safety and security



Local resident interviews and observations at PaWS site, 2022-2023

- Mural painting process
- Fynbos planting day
- Pond retrofit maintenance
- Pond cleaning activities



Communicating the science of managed aquifer recharge



ENGAGING STAKEHOLDERS

Workshops and focus groups

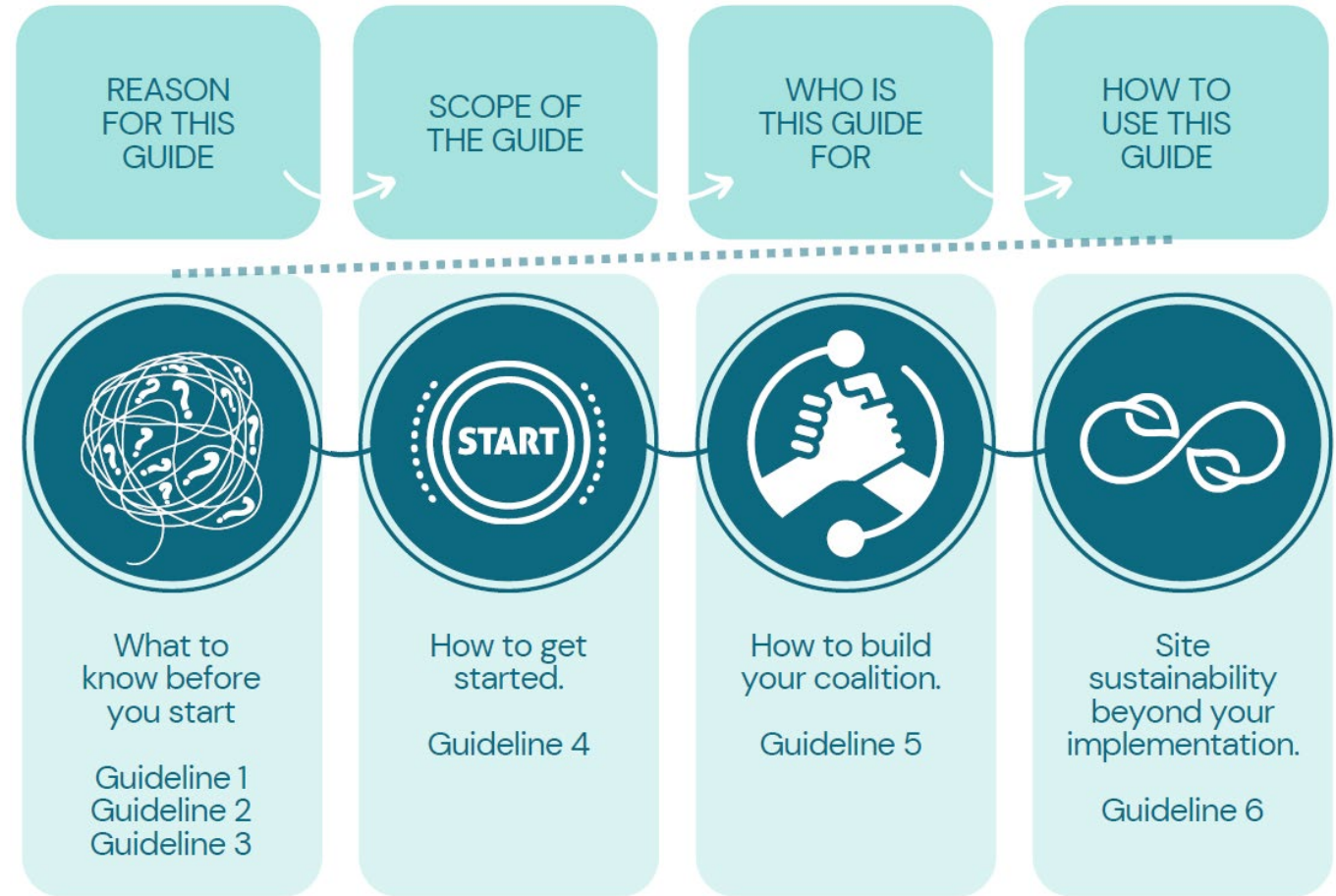
- Sensemaking workshop with PaWS team
- Setting up Civics, Coalitions & City Mechanisms
- Resource requirements for MAR-BGI
- Stakeholder engagement for MAR-BGI



Raising awareness around stewardship of MAR-BGI in local areas

MAR BGI GUIDELINES

1. Scoping the local context (including local government priorities)
2. Encouraging civic engagement/ organization /coalitions
3. Adhering to relevant legislation, policies and programmes
4. Critical appraisal of planned implementation
5. Facilitating engagement
6. Formalising local involvement



CONCLUSIONS

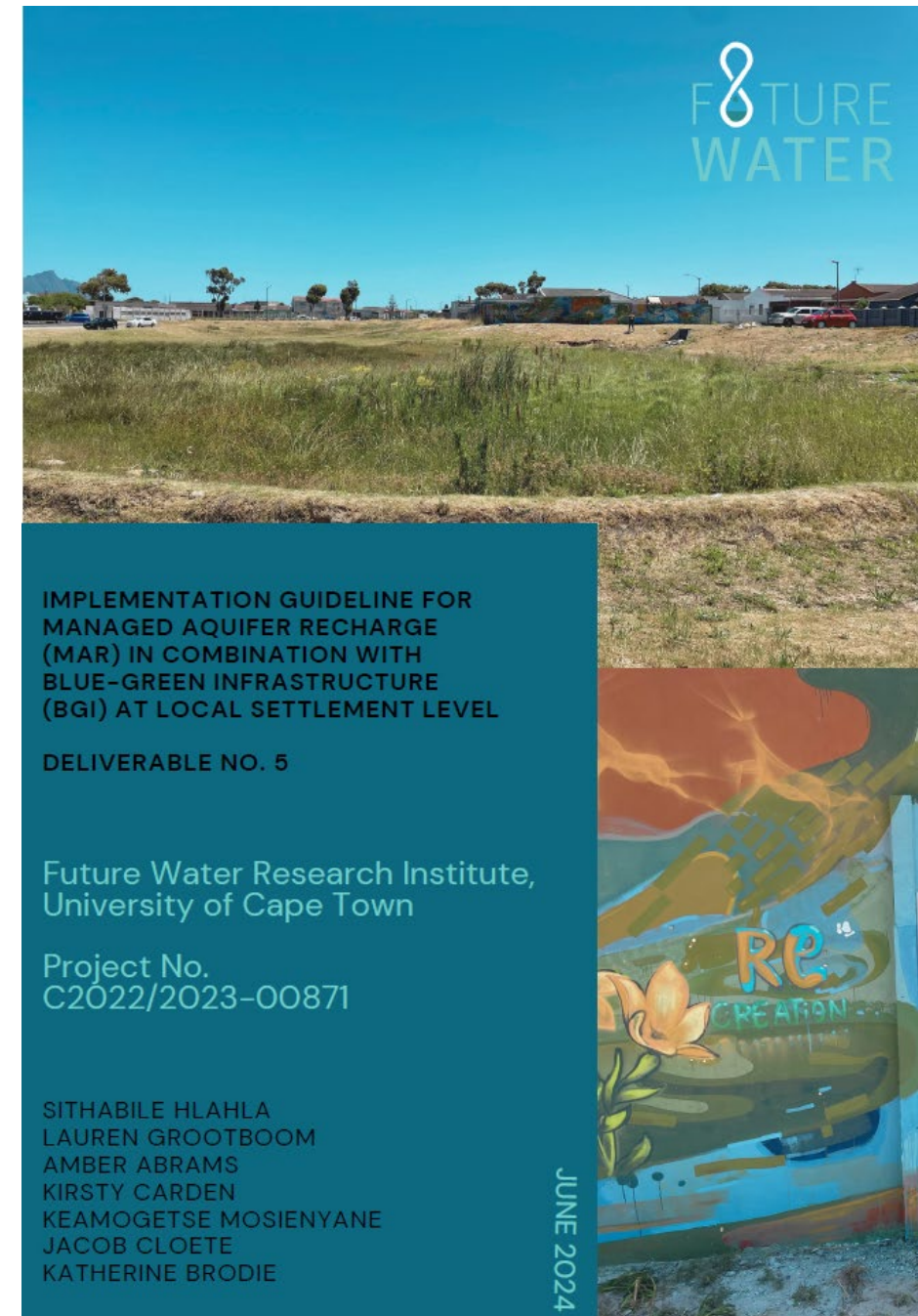
- Consider local contexts for planning / managing place-specific, resilience-building initiatives such as MAR-BGI
- Ensure buy-in and a sense of ownership by encouraging civic engagement and organisation and making sure intervention meets local needs
- Ensure availability of funds – involve local government and private sector
- Adhere to relevant legislation, policies and programmes
- Seek expert advice – consultants, researchers, etc.
- Employ mechanisms to ensure sustainability of project beyond initial implementation



Thank you for your attention

Link to:

[MAR BGI Implementation Guideline](#)



IMPLEMENTATION GUIDELINE FOR
MANAGED AQUIFER RECHARGE
(MAR) IN COMBINATION WITH
BLUE-GREEN INFRASTRUCTURE
(BGI) AT LOCAL SETTLEMENT LEVEL

DELIVERABLE NO. 5

Future Water Research Institute,
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Project No.
C2022/2023-00871

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