

# Understanding urban-rural linkages in water reuse for irrigated agriculture

*Impact of urban water pollution on irrigated agriculture*

IWRA World Water Day Webinar | 22 March 2017 | Matthijs Wessels



# Content

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World Water Week 2017 *'Water and waste – Reuse and reduce'*



### ▶ Focus of today:

- ▶ **Understanding the importance of urban-rural interaction along the water chain**
- ▶ **Examples from a case study in South Africa**
- ▶ **Policy implications**

Research activities on wastewater reuse in agriculture:

- Tanzania (October 2016)
- South Africa (October 2015 - November 2016)
- Spain (May – July 2015)

# Urban-rural interaction in water management

- Trends of population growth, economic growth, urbanization and industrialization, all happening in a world affected by climate change.
- Increasing urban water consumption stresses the need for managing returning water flows.
- Understanding the link between urban return flows and irrigation practices contributes to ensuring water availability in agriculture.

**6** CLEAN WATER  
AND SANITATION

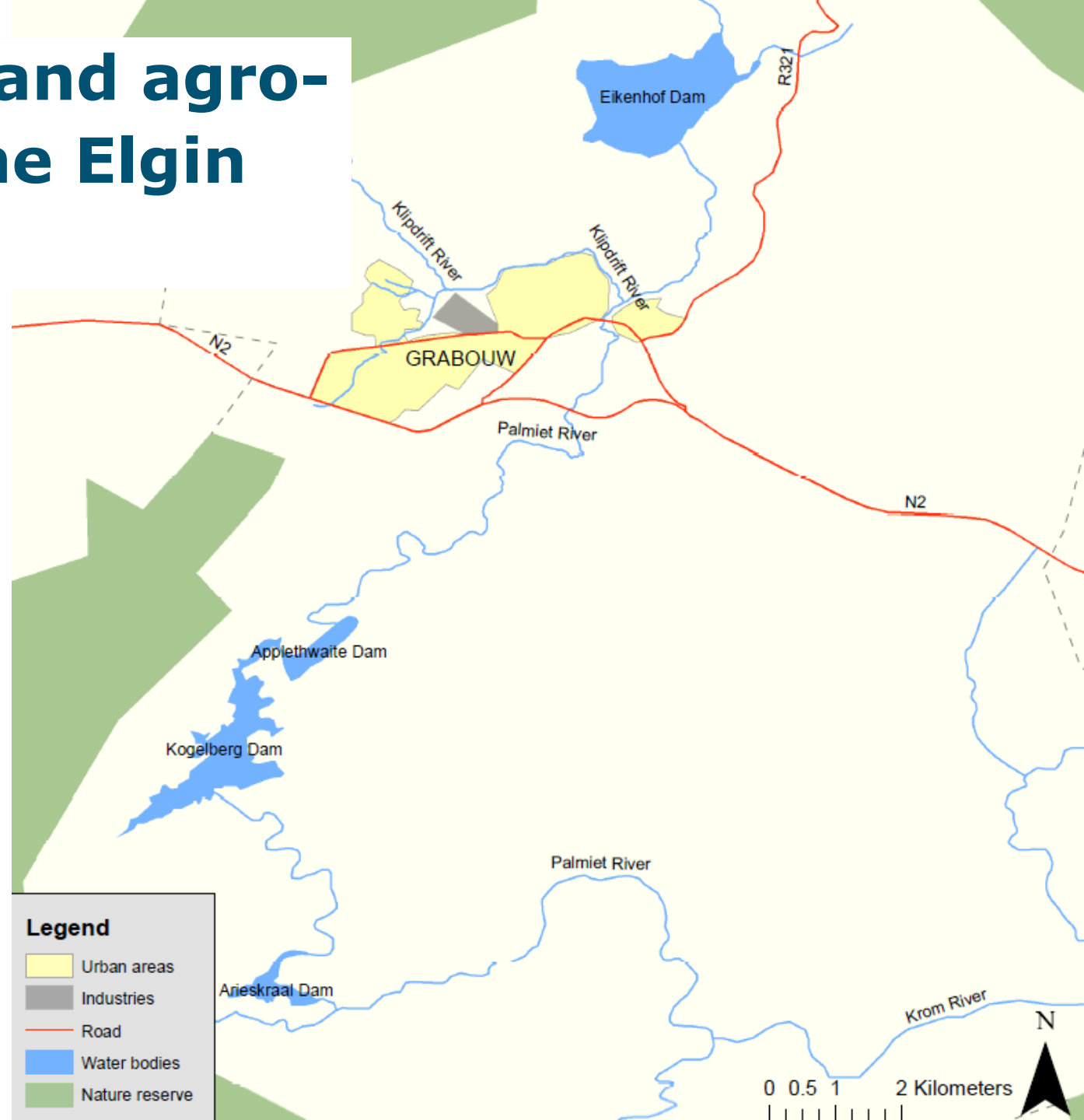


**12** RESPONSIBLE  
CONSUMPTION



# Urban water pollution and agro-export production in the Elgin Valley, South Africa

- Fruit farming region
- Deterioration of the Palmiet River over the last decades
- Impact on production unknown
- *Special emphasis on the risk barriers and the combined effect to reduce adverse effects.*



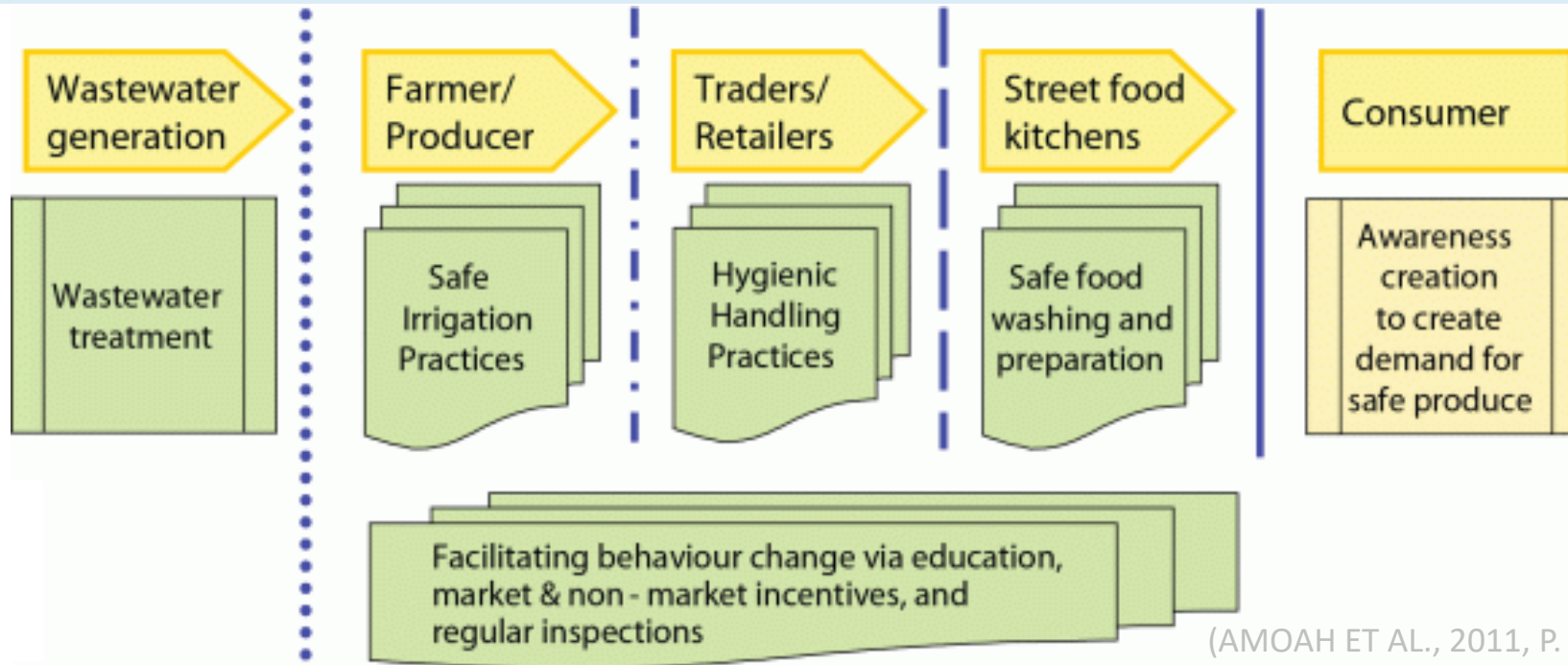
## URBAN POLLUTION

- Pollution sources
- Water quality

## AGRICULTURAL PRACTICES

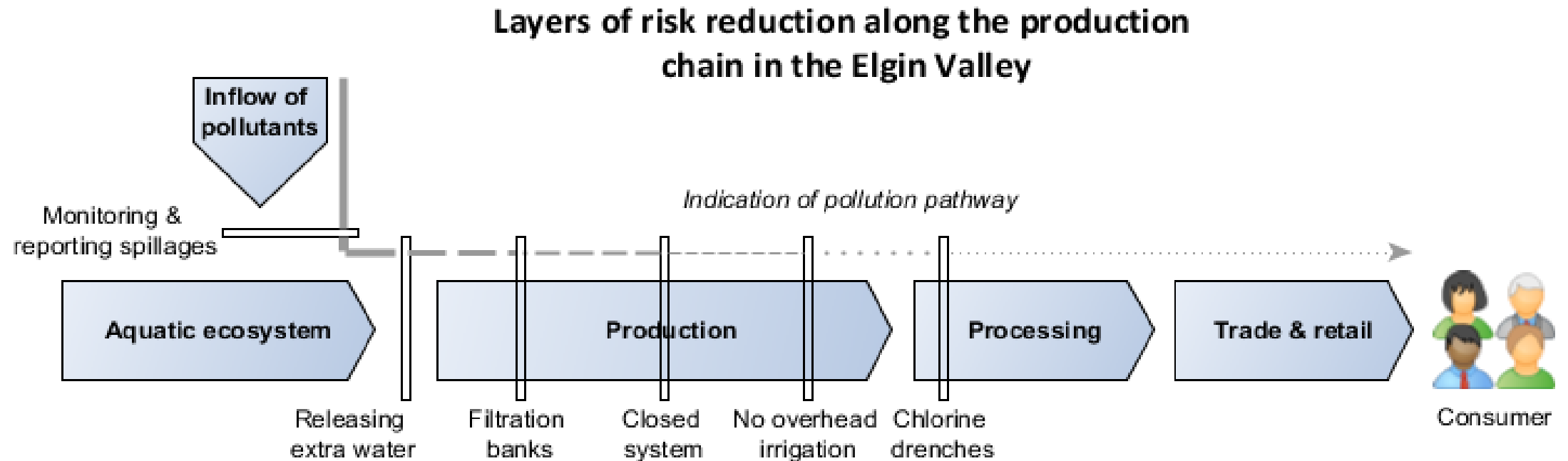
- Coping strategies and the infrastructural/institutional risk reduction barriers

**Understanding the end-user gives more flexibility in water quality standards and design criteria.**



# Research conclusions

- Water quality: localized areas of concern, downstream of urban settlements.
- Protection measures minimize the adverse effects of polluted water on crop production, health and access to export markets.



# Policy implications

- It is possible to use urban return flows in irrigated agriculture without significant effects on crop production, health and access to export markets.
  - Implementing effective institutional and infrastructural layers of risk reduction are essential to minimize adverse effects
- Guiding water quality standards based on agricultural practices strengthens farmers' position for food quality certification and market access.
- **Assessing the water use chain from an end-user perspective improves design and policy decisions based on the expected or desirable outcomes, adapting the water use chain for the intended use.**

THANK YOU FOR  
YOUR ATTENTION!

*Waste: a problem or a resource?*

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[Policy brief International WaTERS](#)

