



Organisational Decision-Making in Water Reuse for Smart Cities (SMART-WaterDomain)

Sustainable water management business models

GUIDANCE FOR ORGANISATIONS

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INTRODUCTION

#1

Companies are facing many social, environmental and economic changes. They are taking steps to use and conserve resources more effectively.

One of the most pressing needs for every industry is the transition from a linear to a circular economic model.

Rethinking the way resources are acquired and processed is necessary to redesign business processes in line with sustainable development and the circular economy.

WATER AS A STRATEGIC RESOURCE

#2

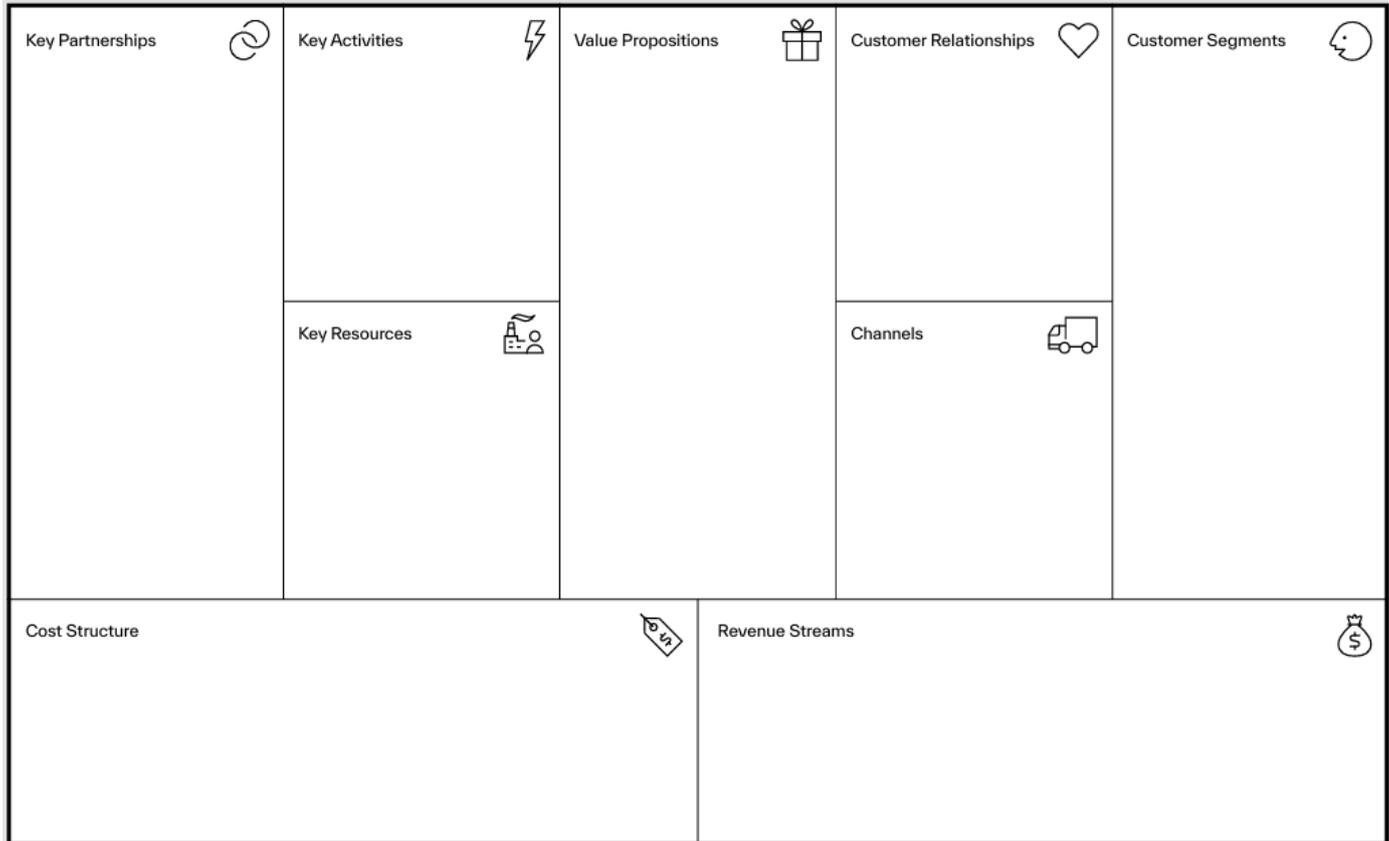
Water is an essential resource for most business processes.

Water resources may become less available, and their quality may deteriorate as a result of climate change.

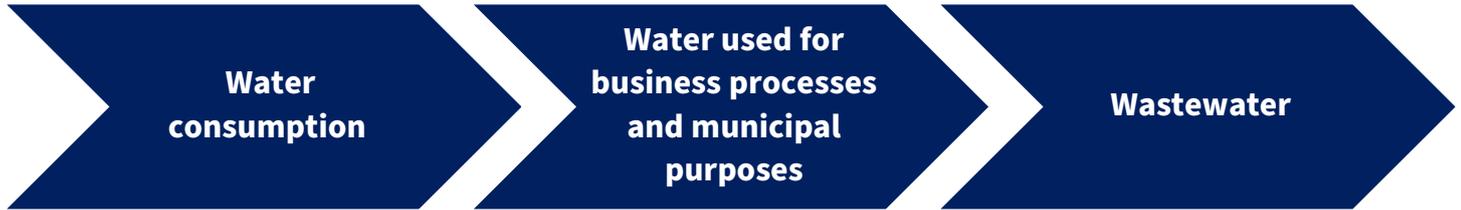
Businesses should identify risks related to water resources and implement solutions to reduce the amount of water used, protect it and treat wastewater in effective and environmentally friendly way.

In order to consider water as a strategic resource of the company and to create value based on it, the following business model is proposed (based, among others, on A. Ostervalder, Business Model Canvas)

BUSINESS MODEL CANVA



LINEAR WATER CONSUMPTION



#3

Water consumption =
Total water withdrawal - Total water discharge

Total water withdrawal =
Surface water (total) + groundwater (total) + sea-
water (total) + produced water (total) + third-party
water (total)

CIRCULAR BUSINESS MODEL

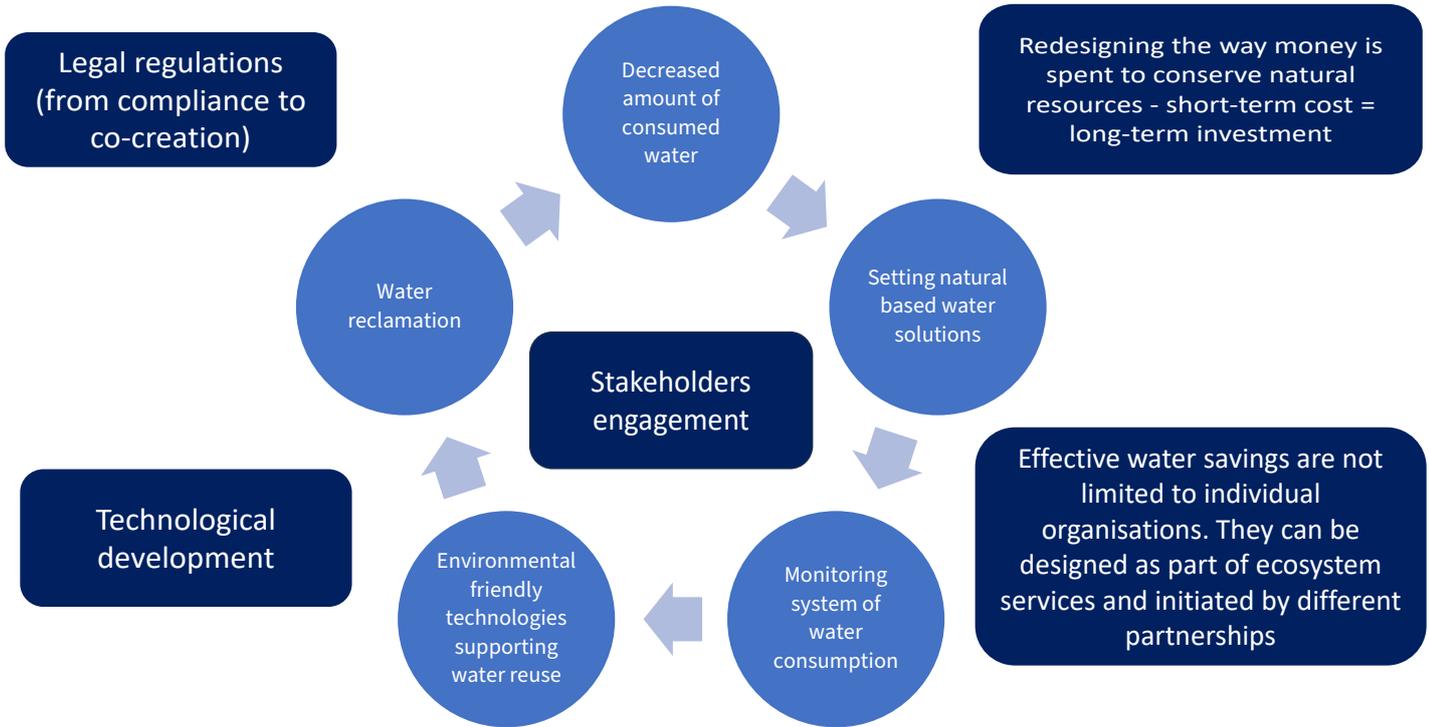
“Circular economy businesses aim to apply circularity principles [...] preserving and enhancing natural capital, optimising yields from resources in use, and fostering system effectiveness (minimising negative externalities) [...] to their business models and shift from a linear business to more circular one”

“Circular economy Manninen, K., Koskela, S., Antikainen, R., Bocken, N., Dahlbo, H., Aminoff, A., 2018, Do circular economy business models capture intended environmental value propositions? J. Clean. Prod. 171, 413e422. <https://doi.org/10.1016/j.jclepro.2017.10.003>, p. 414.

„Circular business models can be defined as sustainable business models - which are business models that aim at solutions for sustainable development by creating additional monetary and non-monetary value by the pro-active management of a multiple stakeholders and incorporate a long-term perspective - that are specifically aiming at solutions for circular economy: closing, narrowing, slowing, intensifying, and dematerialising resource loops through a circular value chain and stakeholder incentive alignment”

Geissdoerfer, M., Morioka, S.N., de Carvalho, M.M., Evans, S., 2018a. Business models and supply chains for the circular economy. J. Clean. Prod. 190, 712e721. <http://linkinghub.elsevier.com/retrieve/pii/S0959652618311867>, p. 713

CIRCULAR WATER CONSUMPTION



CIRCULAR WATER CONSUMPTION

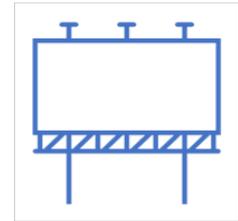


KEY PARTNERS

consider the stakeholders who will support the organisation in developing and implementing water reuse ideas. Monitor legislation, work with local communities and suppliers.

KEY ACTIVITIES

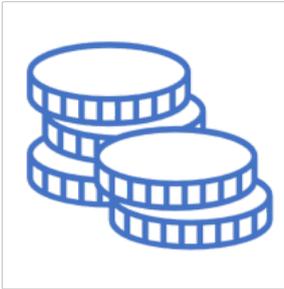
consider how the water is consumed and discharged? What will happen if the organisation does not have access to water or its quality deteriorates? In which activities could water reuse systems be implemented? What other methods and ideas could be considered for water saving in business operations?



KEY RESOURCES

consider water as a strategic resource. Does the organisation prepare risk management to assess the availability of water resources in the short and long term? Are water reuse technologies implemented or planned to conserve this vital resource?

CIRCULAR WATER CONSUMPTION - CONSUMPTION STAGE

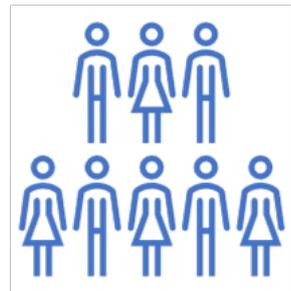


VALUE PROPOSITION

Consider the business proposition of the organisation. What are the key activities that create value for the company and its customers? How can water resources affect value creation in the short and long term? Are there opportunities to create additional value?

CUSTOMERS

Are your customers environmentally aware?
Do they expect environmental performance from organisations?
What could the organisation say in its annual report about water savings? If you reuse water or have a recycling policy, are your customers informed?



CIRCULAR WATER CONSUMPTION

CUSTOMER RELATIONSHIPS



Reflect on the engagement strategies used to build and maintain customer relationships. How does the organisation's commitment to water sustainability and circular practices influence customer loyalty and trust? Consider personalised services, community involvement and feedback mechanisms that promote water-conscious behaviour and encourage participation in water saving programmes.

CUSTOMERS SEGMENTS

Identify the specific customer segments that are most likely to value and support circular water consumption. How do different segments, such as eco-conscious consumers, businesses with sustainability goals, and regulators, perceive the importance of water reuse? Tailor your value proposition to the specific needs and concerns of each segment, emphasising the environmental and economic benefits of water reuse.



CIRCULAR WATER CONSUMPTION

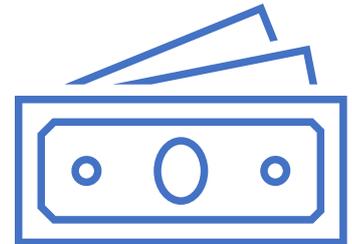
CHANNELS



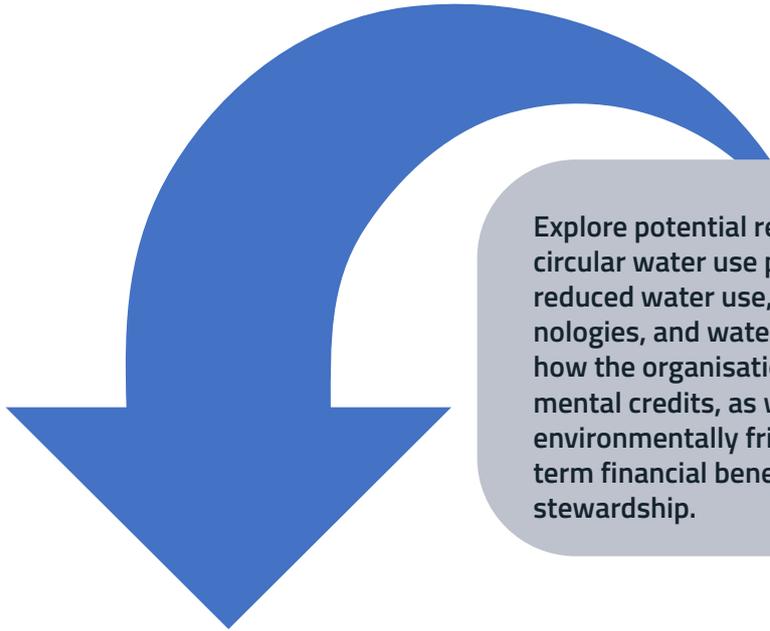
Consider the channels through which information about water reuse initiatives and technologies are communicated to potential partners, investors, and customers. How is awareness about water sustainability practices disseminated? Evaluate the effectiveness of digital platforms, educational workshops, and direct engagement in promoting circular water consumption. Reflect on the supply chain logistics needed to support water reuse technologies.

COST STRUCTURE

Analyse the cost implications of integrating circular water systems into the business model. What are the initial investment, operational and maintenance costs associated with water-saving technologies and processes? Consider how economies of scale, partnerships and government incentives can reduce these costs. Consider how cost savings from reduced water use can be passed on to customers or reinvested in sustainability initiatives.



CIRCULAR WATER CONSUMPTION



REVENUE STREAMS

Explore potential revenue streams from circular water use practices. These may include savings from reduced water use, revenue from the sale of water-saving technologies, and water management consultancy services. Consider how the organisation can capitalise on certifications and environmental credits, as well as the potential for premium pricing for environmentally friendly products and services. Assess the long-term financial benefits of a reputation for sustainability and water stewardship.

IDEAS TO CONSIDER



1. Diversification of water resources.
2. Implementation of technology driven solutions aiming at water consumption control and monitoring.
3. Implementing effective water treatment methods.
4. Redesigning city and organisational infrastructure.
5. Establishing inter and intrasectoral partnerships including industrial symbiosis.
6. Creating water-resilience scenarios for different time horizons.

ANALYSE THE CURRENT WATER MANAGEMENT PRACTICES

The SMART WaterDomain Decision Support Tool is designed to support the water resources management process.

The tool:

1. Facilitates analysis of current status and provides direction for future improvement activities.
2. Helps to understand the relationship between operations and water resources, assess their relevance and identify risks associated with deterioration of water quantity or quality.
3. Prepares organisations for non-financial reporting (ESG), which will involve an increasing number of companies in the coming years.
4. Can be used by any type and size of company or public institution.

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