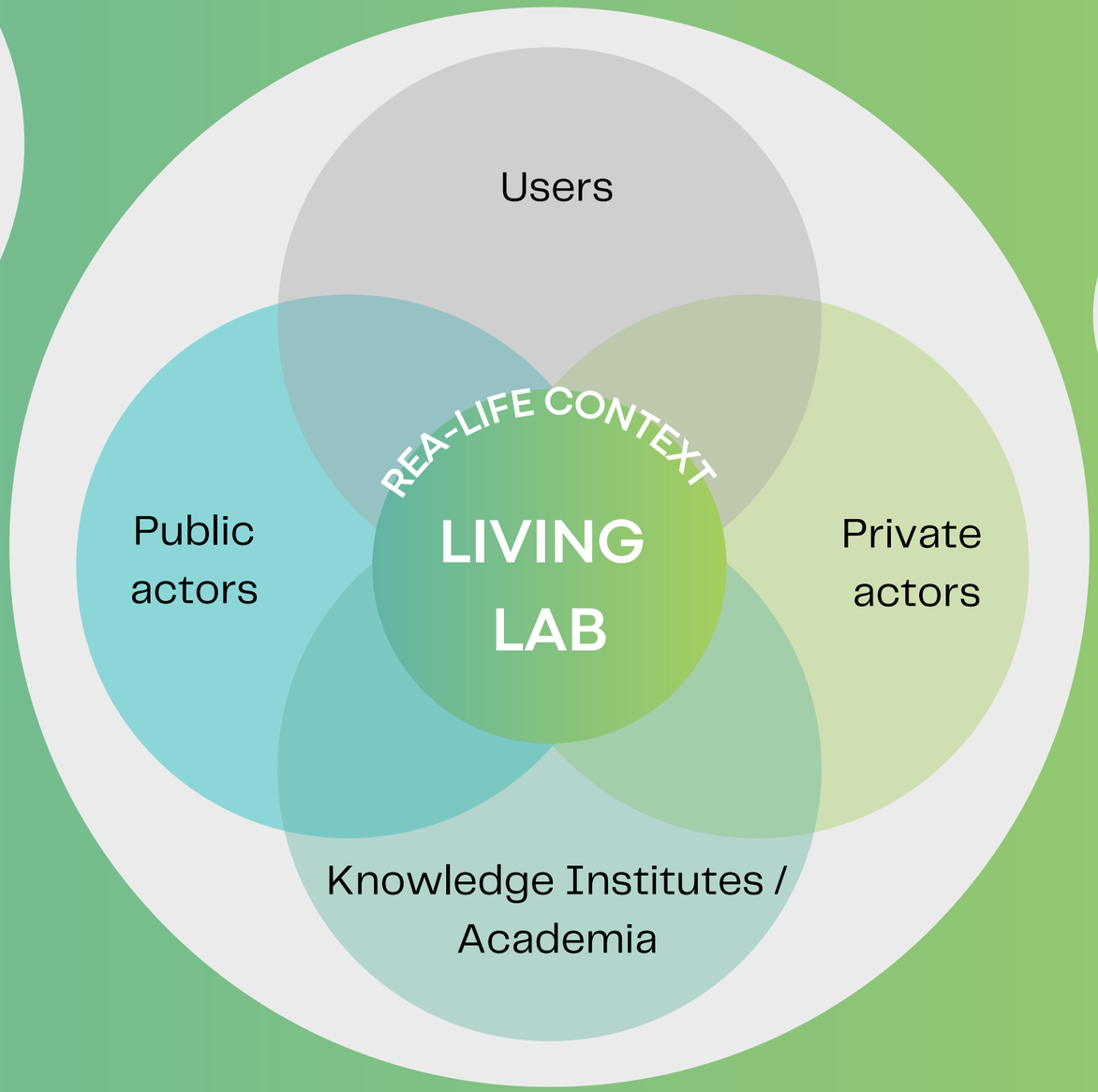
WILLEMSTAD GREEN LAB:
A LIVING LAB FOR CLIMATE RESILIENCE

A living lab is an experimental setting or ecosystem where various stakeholders collaborate in real life communities and settings to develop, test, and enhance innovative ideas, products, or services.



Connecting science and society







Knowledge, experiences and perspectives are bundled, creating more support for the final solutions

As climate threats intensify, Willemstad's Inner City must become a collaborative and climate-resilient environment. A Living Lab approach is a structured, inclusive catalyst that fosters real-world experimentation, aligns interests, and enables transparent, ongoing collaboration. In doing so, fragmentation is transformed into shared momentum. Strengthening trust, ownership, and collective resilience.

A Living Lab project quickly clarifies which strategies are effective and which are not in the local context, thereby enhancing the impact of the measures.

ROADMAP

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	HORIZON 1	HORIZON 2	HORIZON 3
	PREPARING THE GROUND	**PILOT**	**RUN AND SCALE**
PRIMARY TARGET GROUP	Quadruple helix: government, academia, citizens, experts	Participants, technical experts, investors	Local stakeholders, policymakers, development organizations
VALUE TENSIONS	**Innovation vs. Tradition**	**Short-Term Results vs. Long-Term Impact**	**Standardization vs. Flexibility**

Iterative process: Going and looking back and forth







ACTIVITIES	**6-8 MONTHS** Identify and connect with key stakeholders. Co-create a shared vision and objectives for the Living Lab, focusing on climate resilience and sustainability. Secure initial funding, allocate human resources, and establish partnerships to support the lab's activities. Conduct environmental and social assessments to understand current challenges and opportunities and initiating Living Lab projects. Develop channels to communicate information and engage stakeholders.	**6-18 MONTHS** Design and execute small-scale projects to test innovative solutions in real-life settings. Establish metrics to assess the effectiveness and impact of pilot initiatives. Provide training and support to stakeholders involved in pilot projects. Implement systems to gather input from participants and adjust projects accordingly.	**2-3 YEARS** Work with authorities to embed successful practices into local policies and regulations. Develop frameworks to replicate successful projects in other parts of the city. Identify and secure funding mechanisms for long-term sustainability. Establish forums or networks to disseminate lessons learned and best practices.
	SEEDING THE FUTURE Initiate & plan development for collaborative innovation	**CULTIVATING SOLUTIONS** Implement, experiment and evaluate	**HARVESTING IMPACT** Improve and scale succesful initiatives

	HORIZON 1 PREPARING THE GROUND	6-8 MONTHS	HORIZON 2 PILOT	6-18 MONTHS	HORIZON 3 RUN AND SCALE	2-3 YEARS
EXTERNAL INFLUENCES						
TRENDS	Global nature development regulations Digital twin Rising sustainability awareness Community centric approach Integrated approaches		Nature based solution Circulair economy Co-creation Wireless monotoring Smart sensors IoT for Climate resilience		VR & AR Policy and regulations towards climate resilience International cooperation Impact driven partnerships Sustainable value propositions	
VALUES	Connection & alignment of interests Visibility Communication & coordination		Inclusiveness & Alignment of interests Room for expirimentation Community engagement & visibility		"Champions" Standardization & flexibility Contuinity & coordination	
LIVING LAB						
SCOPE AND OBJECTIVES	 • Establish foundational governance structures and stakeholder networks.: Define the lab's mission, vision, and strategic/operational objectives • Identify key urban challenges and opportunities within Willemstad's inner city.		 • Implement and evaluate small-scale interventions addressing identified challenges		 • Expand successful interventions and institutionalize the Living Lab framework	
INTERNAL AND ORGANIZATIONAL COMPONENTS						
KEY ACTIVITIES	Create stakeholder sturcture Define lab's mission and vision Governance and management structure Identify urban challenges Management and maintenance Finance, define business model and securing funding Inventory of available resources and location Policy intgration		Experiment Develop & test Monitoring Community engagement Co-creation sessions Evaluate Management and maintenance Coordination Finance Testing of collaboration structures		Initiating new projects capacity building Knowledge sharing and export of solutions Update of strategy and action plan Management and maintenance Expand partnership and resources (new funds, partners) Ensure cooperation in sustainable structures (governance, agreements)	
TECHNOLOGY & EXPERTISE	ICT & data stakeholder engagement platform GIS maps and digital plans ICT expert Financial expert Policy, legislation and governance expert		IoT- sensors Application for citizen reporting Data analysis tools Toolbox & frameworks Living Lab methodology and iterative Learning Climate adaptation experts		Expand infrasturture supporting data sharing & transparency Digital twins of the city Scaling and replication experts Policy anchoring & legal innovation	
PARTNERS & RESOURCES	Residents Financing: subsidies, funds, public-private partnerships Community leaders Location Policy advisor Local NGO's Real estate partner UNESCO TNO Quadruple hellix: Academia (UoC, TU Delft), Gorvernment, Industry, Public		Technical experts Software engineers Data analysts Funding partners Local businesses Innovation hub Grants & funding Temporary infrastructures and test locations Quadruple hellix: Academia (UoC, TU Delft), Gorvernment, Industry, Public		ICT infrastructure Partners in other countries governmental bodies Local businesses Grants, funding and private investments Private sector Quadruple hellix: Academia (UoC, TU Delft), Gorvernment, Industry, Public	
COMMUNICATION CHANNELS	Participation platform, social media, local meetings, visual storytelling newsletter, mail		Storytelling of experiments, website, newsletter, mail, feedback loops		Knowledge sharing (conferences, publications, living lab networks) Website, newsletter, mail,	
VALUE	**Shared understanding of collaborative commitment and creating trust**		**Evidence based insights, a learning community and exemplary work**		**Enhanced urban resilience and community well-being**	

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