HARVEST RAINWATER WITH FAMILY, PARTNERS AND NEIGHBOURS

TECHNOLOGY DESCRIPTION

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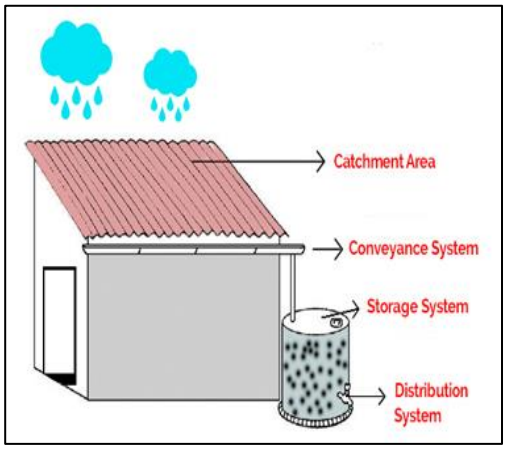
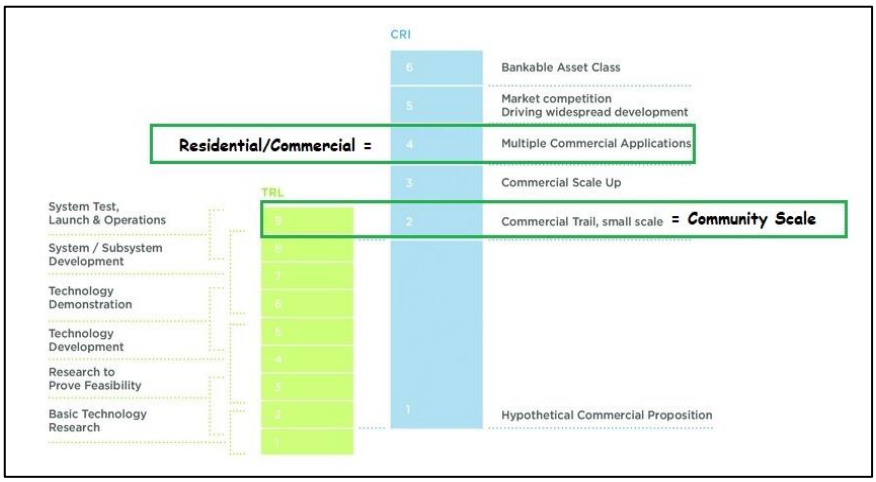
***R*ainwater *h*arvesting** is the diversion, capture, storage and treatment of precipitation for potable and non-potable use. It provides water where there is no alternative supply system or supplements the Utility's supply. Systems may vary in size and complexity, but all include *catchment surface, transport, storage, treatment and distribution.* Dependable rainfall patterns and smart, conservative water users are the key assets to the technology's success. There are four classifications of *r*ainwater *h*arvesting, *occasional* – a day's water supply is stored in small containers; *intermittent* – water is harvested during rainy periods, and it meets most water demands; *partial* – rainwater is used throughout the year, but the harvest is not enough for all domestic demands; and *full* – water needs are met by the rainwater harvest since there is no alternative water source.



Source: Akruthi Enviro Solutions – Rainwater Harvesting for House

CURRENT COMMERCIAL READINESS INDEX

The **C**ommercial **R**eadiness **I**ndex (**CRI**) is a framework used to assess the *commercial maturity* of the technology under investigation using six (6) indicators *(see figure)*. It complements and is often used in tandem with the **T**echnology **R**eadiness **L**evel (**TRL**) method which measures the technology's *technical* maturity.



The maturity of ***rainwater harvesting*** is being assessed per desired *end user*, i.e., scores are estimated based on the current status of *i.) residential and commercial applications;* and *ii.) community scale applications*. As shown on the CRI scale *(pictured) residential and commercial applications* are at **Level 4** *multiple commercial applications* – which indicates that rainwater harvesting is a well-known, accepted, and common practice. While *community scale applications* are estimated at **Level 2** *commercial trial at a small scale* – suggesting that the practice of community catchment and storage is understood and accepted, however there has not been widescale investment in these communal systems. In both cases the *r*ainwater *h*arvesting is in the *D*eployment phase of **T**echnology **R**eadiness.

CLIMATE RATIONALE OF THE TECHNOLOGY

***R*ainwater *h*arvesting** is widely practiced across Antigua and Barbuda to give residents an alternative source to the Water Utility's network supply. This practice is necessary in a water-stressed climate where there is often a shortfall in Utility production, particularly during dry months when surface and ground water stores are depleted and APUA becomes fully dependent on reverse osmosis desalination. *R*ainwater *h*arvesting is supported by the Building Code (1993) and Physical Planning Act (2003), and the Development Control Authority ("DCA") guidelines dictate that all newly constructed buildings must include rainwater capture and storage for the architectural plans to be approved. Greater adoption of *r*ainwater *h*arvesting would require that storage tanks and cisterns are correctly sized based on occupancy and usage. This would necessitate that additional cost-effective storage options, that rival reinforced concrete in-ground cisterns, are made available on the local market.

AMBITION OF THE TECHNOLOGY

SCALE FOR IMPLEMENTATION AND TIME-LINE

Improved diffusion of ***r*ainwater *h*arvesting** will target private residential and commercial buildings, in which new storage options which are piloted, and market tested. It will also focus on community cistern projects that provide centralized communal storage and distribution systems for use by neighbouring residents. Technology deployment will involve engaging local innovators to design and demonstrate *novel* low-cost storage options, along with training for NGOs in preparation for implementing community-scale rehabilitation projects. The timeline is sixty (60) months with a budget of approximately USD 3 500 000 | XCD 9 408 700.

AMBITION FOR COMMERCIAL READINESS INDEX

The proposed goal for **c**ommercial **r**eadiness at the residential and commercial level after the five (5) year period is to achieve **Level 6** *bankable assets class* for residential and commercial *r*ainwater *h*arvesting systems. This would mean storage tanks are appropriately sized to accommodate the consumption needs of occupants, a wider range of storage options are available and *f*inancial *i*nstitutions readily provide support for residents to acquire new or upgrade existing systems. The quantitative target is to achieve adoption in up to three thousand (3,000) households or 10% of the population. At the community scale the goal is to attain **Level 4** *multiple commercial applications* with the rehabilitation of ten (10) communal cisterns with storage capacities of 50,000 to 125,000 US gallons, distribution and filtration equipment powered by renewable energy and income generation schemes to finance operation and maintenance.

EXPECTED IMPACTS OF THE TECHNOLOGY

***R*ainwater *h*arvesting** will enhance availability of water for potable and non-potable uses, lessen disruptions during dry periods or outages in Utility supply, promote self-sufficiency, provide safe, potable water after adequate levels of treatment, and provide opportunities to create niche market jobs for design and installation of low-cost rainwater storage. Improved diffusion has potential to positively impact the agricultural sector by introduction viable on farm storage options to increase irrigation volumes.

POLICY ACTIONS FOR TECHNOLOGY IMPLEMENTATION

EXISTING POLICIES IN RELATION TO THE TECHNOLOGY

The practice of ***r*ainwater *h*arvesting** is supported by Antigua and Barbuda's Building Code (1993) and Physical Planning Act (2003). The DCA is required to ensure that newly constructed buildings must include rainwater capture and storage, and the Authority is required to perform on-site compliance checks during construction. Collectively they provide the policy guidelines that that will support increased diffusion.

PROPOSED POLICIES TO ENHANCE TECHNOLOGY IMPLEMENTATION

There is no need for new policies, plans or institutional arrangements to support increased diffusion of ***r*ainwater *h*arvesting** systems. This is a testament to the fact that while the technology is already relatively mature on the Antiguan and Barbudan market, there now exists a need to improve, rethink and revamp how storage is envisioned. It is expected that as new unconventional *r*ainwater storage goods and services are introduced, the market will self-regulate as suppliers and consumers agree to acceptable quality and price.

USEFUL INFORMATION

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LINKS TO TNA REPORTS

https://tech-action.unepdtu.org/country/antigua-and-barbuda/