

Komodo Water



KOMODO WATER
Air Sehat, Kita Kuat

komodowater.org



The Care Economy
Knowledge Hub

the-care-economy-knowledge-hub.org

Profiling Businesses in the Care Economy

The care economy consists of paid and unpaid labor and services that support caregiving in all its forms. In Africa, Asia and Latin America, women spend between three to five times as many hours on unpaid care and domestic work as men. This represents 80 percent of a household's total hours devoted to unpaid care work.

Care economy businesses can help recognize, redistribute, reduce and reward – also known as the 4 Rs – unpaid and paid care and domestic work in the following ways:



Recognize: Initiatives that increase visibility and recognition of paid and unpaid care and domestic activity as "productive" work that creates real value and contributes to economies and societies.



Redistribute: Services and initiatives that redistribute care work from individuals to public and private sector entities, and redistribute care and domestic work within the household.



Reduce: Products and initiatives that reduce the time spent on and burden of unpaid care and domestic work.



Reward: Products, services and initiatives that ensure that care and domestic workers are paid fairly and have professional growth potential. This provides them with financial reward and security.

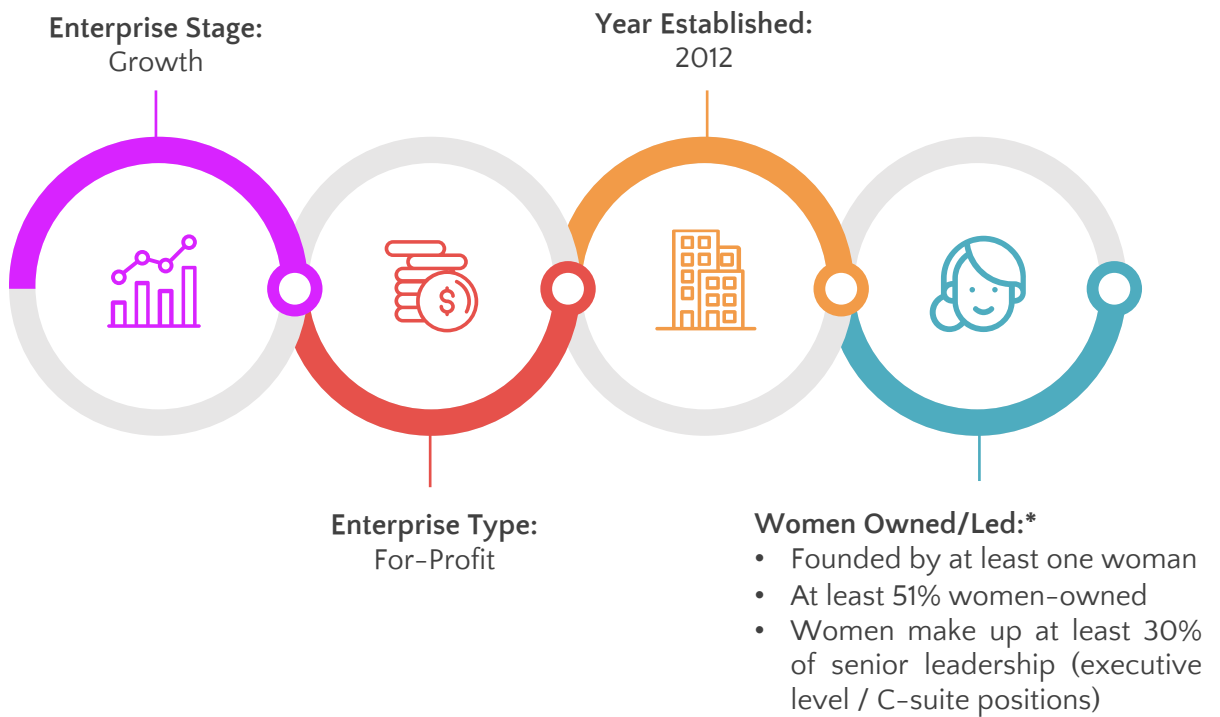
The Care Economy Knowledge Hub aims to address the knowledge gap around care businesses by showcasing various business models and creating a resource base for relevant stakeholders. It also aims to raise awareness and increase knowledge of the state of impact-driven care economy business models and attract a broad range of funders to invest in care economy solutions by showcasing opportunities. These business profiles are intended to showcase said potential investment opportunities. They have been created from information and data provided by the business itself.

This project is supported by Canada's International Development Research Center, in partnership with the Soros Economic Development Fund at the Open Society Foundations. Building on their track record and commitment to transforming the care economy and mobilizing finance for gender equality, they have jointly launched this action research program to help transform the care economy through impact business and investment.

Executive Summary



Komodo Water is a social enterprise that provides access to clean and affordable drinking water in small islands and remote coastal areas of Indonesia. In these regions, access to clean drinking water is very difficult due to drought, water salinity, distance and other issues. The company provides integrated water management solutions including feasibility tests, water treatment products installation, and post-sales monitoring of these products. Komodo Water has served 1,549 direct customers so far. In 2020, the company generated a revenue of US\$ 59,506. Komodo Water currently has ten full-time employees.



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*According to 2X "women entrepreneurship" and "women leadership" criteria; [2X Challenge Criteria](#)

1. About The Enterprise

1.1 Problem

Roughly 28 million Indonesians lack access to clean drinking water, and 20 million lack access to improved sanitation facilities¹. According to 2019 government statistics, 25% of households in East Nusa Tenggara (Southeast Islands) do not have access to adequate and sustainable drinking water sources². Families, primarily women and children, have to rely on unsanitary brackish water or travel up to four hours each day to fetch potable water for their daily household needs. Komodo Water's research shows that a family spends on average US\$ 600 per year on water, while local standard income is US\$ 3,000 per year. This suggests that, on average, a family in Papagarang Island in East Nusa Tenggara spends 20% of their monthly income on clean water. Since access to clean water is expensive, a large percentage of the population consumes unclean water, resulting in high levels of diarrheal diseases and intestinal worms. Pregnant women, in particular, suffer greatly due to lack of WASH facilities. And consuming unclean water leads to poor health, affecting children and causing stunting³.

1.2 Solution

Komodo Water addresses the challenge of lack of access to clean water in Indonesia's remote coastal communities and small islands by providing integrated water management solutions that include the following.

Feasibility study, surveying, and data analysis: Komodo Water's techniques include social mapping, hydro-geology surveying, geo-electrical surveying and photogrammetry. Komodo Water collects data on water sources, and analyzes water conditions and aquifer quality.

Water treatment products installation: This includes water treatment product installation, such as water well drilling, solar water pumps, and groundwater reverse osmosis (RO) or seawater desalination. Komodo Water does not manufacture products but procures equipment and installs it in villages in partnership with entrepreneurs and villagers. Komodo Water uses renewable energy to operate this machinery.

¹ (2020, May 26). *Indonesia's water and sanitation crisis*. Water.org. <https://water.org/our-impact/where-we-work/indonesia/>

² (2019) *Statistik Indonesia: Statistical Yearbook of Indonesia 2019*. Badan Pusat Statistik.

³ Pouramin, P., Nagabhatla, N., Miletto, M. (2020). A Systematic Review of Water and Gender Interlinkages: Assessing the Intersection With Health. *Frontiers in Water*, 2:6. <https://doi.org/10.3389/frwa.2020.00006>

Sale of derivative products and services such as the supply of drinking water and ice boxes: End customers, i.e. villagers and enterprises, buy clean water generated by the water treatment machinery. In addition to clean water, Komodo Water also sells ice boxes, used to preserve fish, to fishing communities. Households and fishing communities collect water and ice boxes in reusable containers that reduce the consumption of single-use plastic.

Post-installation operational and management assistance: Komodo Water provides post-installation support to ensure the usability and longevity of the water treatment technology. This includes treatment technology operation, repair and maintenance and the training and hiring of local operators to ensure the success and sustainability of the water facility following the initial 6 months - a period after which a lot of other grant water projects fail.

The use of renewable energy to operate machines has reduced fossil fuel consumption for water transportation. A decentralized water supply system creates jobs and business opportunities for the local community. Komodo Water also partners with local organizations to conduct training and educational sessions that increase environmental awareness and the importance of clean water to avoid stunting.

1.3 Customer Segment

Customer Segment	Product / Service Provided	Paid / Unpaid
Rural households and fishing communities on remote islands (directly or through microentrepreneurs)	<ul style="list-style-type: none"> • Clean, affordable water: The water is used for cooking, drinking and household purposes. This is provided in an eco-friendly packaging container. • Ice boxes and cold chain storage: Fishing communities use this product to store and preserve fish. 	Paid Households pay for water by the gallon.
Enterprises (SMEs) and Public Institutions:	<ul style="list-style-type: none"> • Integrated water management solutions: Komodo Water offers services to SMEs & public institutions such as feasibility studies, surveys, and data analysis to design integrated water management solutions. The techniques include social mapping, hydro-geology surveys, geo-electrical surveys and photogrammetry. 	Paid Komodo Water charges a service fee.

Customer Segment	Product / Service Provided	Paid / Unpaid
	<ul style="list-style-type: none"> • Water treatment solutions: Water treatment technology is also available to hotels, micro-entrepreneurs, businesses and institutions. This includes: (i) water well drilling to aquifer layers up to 200m depth; (ii) reverse osmosis membrane installment systems to remove unwanted molecules and particles using conventional or renewable energy sources of raw water; and (iii) solar water pumps to pump water from below ground using solar power, a technology suitable for areas without electricity. 	
Micro-entrepreneurs from the local community (resellers) where drinking water is sold	Clean water and derivative products: Komodo Water sells clean water and derivative products in bulk to micro-entrepreneurs who resell to local residents.	Paid Micro-entrepreneurs pay for water by the gallon.

1.4 Team And Governance Structure

The enterprise currently has ten full-time employees, fifty percent of whom are women (two on the Senior Management team, the CEO and CTO, who also form the board). There are three Project Leaders and Officers who are responsible for project management and technical supervision, and two employees responsible for Marketing and Sales. Two Local Operators from the community operate the machines. There is one Technical Advisor. The management board consists of two members. Additionally, there is an advisory board consisting of two members providing technology and business management support.

1.5 Enterprise Policies

Policy	Yes / No
Overall HR Policy	Yes
Equal pay for equivalent work policy	Yes

Policy	Yes / No
Non-discrimination / Equal employment opportunity / Diversity and inclusion policy (gender, LGBTQ, PWD, etc.)	No
Anti bullying and sexual harassment policy / Respectful workplaces	No
Whistleblower policy / Employee grievance mechanism	No
Maternity / Paternity leave policy	Yes
Safeguarding policies for vulnerable groups (children, elderly, PWDs)	No
Safeguarding policies for the environment or to reduce detrimental impact on the environment (covers reducing carbon footprint, reduced water consumption etc.)	No

2. Impact

2.1 Mission Statement

Komodo Water envisions a world where everyone can drink and benefit from clean water. It does so by developing eco-cities/villages initiatives based on people-centered planning and development, developing sustainable products from local resources, transitioning from fossil-based energy solutions to cleaner and fewer emission alternatives, and promoting sustainable community development by utilizing information technology and fair trade practices.

2.2 Intended Impact

Komodo Water intends to impact women and girls through two of the four Rs:

- Komodo Water aims to provide clean and affordable drinking water to villages and small islands in Indonesia to help **reduce** the time women and children (mostly girls) spend traveling long distances to collect water for daily activities.
- Komodo Water is **redistributing** the burden of clean water collection away from people, primarily women, to the private sector.

2.3 Monitoring And Measurement

Komodo Water monitors the following indicators.

- Number of local public organizations or institutions that participate in their business operation/campaign
- Number of participants that attend public meetings on stunting prevention
- Percentage of water expenditures in the project area
- Percentage of partner contribution in the public health awareness and the importance of access to clean water activities
- Number of single-use plastic packs avoided
- Liters of reduced fossil fuel consumption
- Number of participants that attend public meetings on the environment

Komodo Water collects monthly sales data, including the number of products and services provided and the number of customers served. This includes the gallons of drinking water and kilograms of ice blocks produced and sold.

Annually, Komodo Water monitors the reduction in carbon emissions and fuel consumption from the use of solar pumps instead of diesel pumps for the supply and treatment of water. The enterprise also maintains a count on the number of points it has surveyed and identified as potential clean water sources. This data is freely available to NGOs and other interested organizations on the enterprise's Water Data platform, where it presents all water related data regarding the location of wells, well depth, water quality, groundwater levels, etc.

Grant-funded projects are evaluated. A key performance index and evaluation is conducted at the end of every project to monitor and measure the enterprise's activities. The evaluation is based on three dimensions: (i) social, (ii) environmental, and (iii) economic. Within the social dimension, Komodo Water measures performance around community development, awareness around clean water, water expenditures and stunting. Community development is evaluated using metrics such as employment opportunities, partnerships, and education and awareness campaigns. The number of new local employees, who have been hired during the reporting period, and the number of local public organizations or institutions that have participated in the business operation/campaign is measured by the operational report. The number of participants who attend public meetings on stunting prevention and the environment is also recorded using attendance lists. Komodo Water also evaluates the community's reduction in water spending. The percentage of water expenditure in the project area is measured using the sales report, which is converted into retrenchment of water spending. The reduction in environmental impact from operations is measured by the reduced tons of single-use plastic packs, which is calculated by converting the sales report into the number of single-use plastic bottles used. Additionally, the liters of fossil fuel consumption saved is calculated from operational reports that record solar power usage and distribution cut. The financial dimension is measured through revenue data.

2.4 Results To Date

- With 1,549 customers served directly, the enterprise has provided 102,387 gallons of water.
- By providing affordable clean water, household spending on water reduced by 50% on average.
- Komodo Water has reached 16,000 indirect beneficiaries, by surveying 118 potential points and identifying 104 water points.
- Komodo Water has reduced 14,400 liters of fossil fuel consumption. It has also reduced 6 tons of plastic pack consumption. By using renewable energy and reducing transport for water distribution, it has avoided 9,720 kgs of CO2 emissions.
- Komodo Water partners with the local health service providers within the community to provide training and education on stunting and the importance of clean water, which has been attended by over 500 people in the area so far.

Komodo Water's work is aligned to the following Sustainable Development Goals (SDGs):



3. Financials

3.1 Financial Status

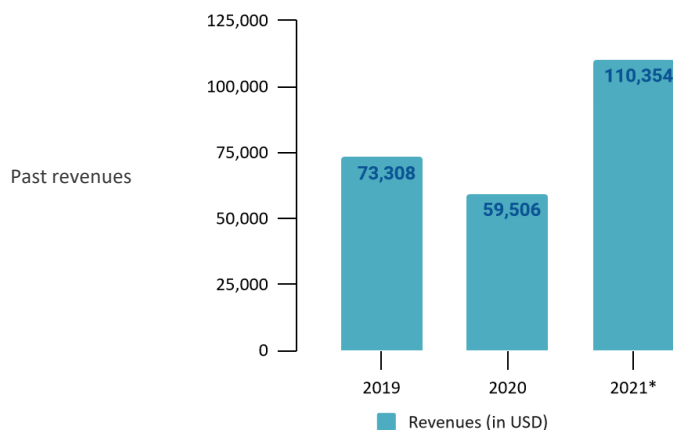
Komodo Water is currently not profitable and intends to be profitable in 5 years. With grant support, Komodo Water is able to cover their operations costs and infrastructure investment.

(Amounts in USD)	FY 2019	FY 2020
Total Revenue	73,308	32,827
Total Expenses	62,486	59,506
EBITDA OR Profit/ Loss	10,822	-26,679
EBITDA Margin	14.76%	-81.27%

** 2021 data not included as it has not been audited.*

3.1.1 Revenue Streams

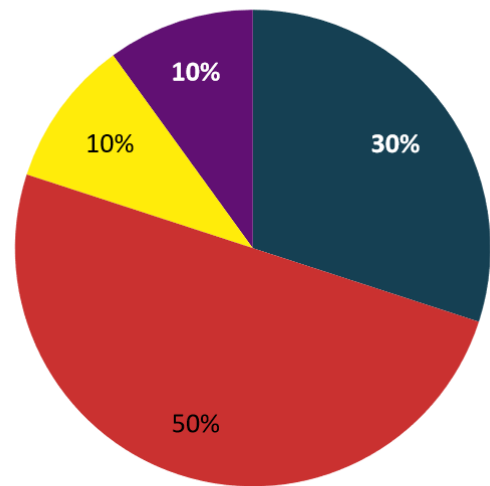
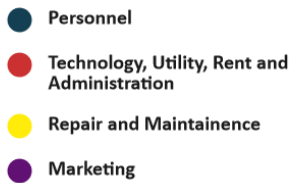
Approximately 10% of Komodo Water's revenue comes from water sales and derivative products and services. An estimated 90% of the revenue comes from grants and donations. Grant funds are used for capital investment, insurance and repair and machinery maintenance.



**2021 revenue data is from the report currently under audit.*

3.1.2 Expenses

The following pie-chart displays the expenditure estimates over the last 3 years:



3.2 External Funding Sources (Past and Current)

Sources of external funding include grants and donations that have been provided by entities such as KOICA, New Zealand Head of Embassy, WE4F South and Southeast Asia Regional Innovation Hub. There are also donors from other organizations and institutions, especially those with CSR programs. The platforms Kitabisa and LaunchGood have been used for crowdfunding.

3.3 Challenges Faced In Accessing Capital

- **Identifying donors and investors:** The enterprise requires grant support to install machinery for new projects, which is costly. Depending on several factors - such as distance, terrain, water condition - it could take an estimated US\$ 100,000 to serve 2,000-3,000 customers in a village cluster. Komodo Water has had difficulty identifying donors who can support this. Komodo Water needs to strengthen its revenue stream with government institutions and other private businesses to shift from grants to other sources of funding.
- **Importing products due to currency fluctuations:** Domestic macroeconomic changes due to currency fluctuation impedes commissioning machinery. The technology products are largely imported from France, with only some project technology sourced locally. Currency fluctuations create uncertainty in planning for required machinery expenses.

4. Path To Scalability

4.1 Potential Avenues For Growth

Komodo Water aims to become an end-to-end water service and platform provider company by working on the following avenues for growth:

- **Geographic expansion of services**, specifically through water technology installation in different nearby islands, such as Bari Village and Messah Island. Komodo Water plans to expand to 5 new sites over the next 5 years. The possible market size is large, given Indonesia's 17,504 small inhabited islands identified as potential new sites. Komodo Water projects that the potential monthly revenue from selling drinking water in West Manggarai is US\$ 85,000. The monthly revenue from the serviceable available market, which comprises remote coastal areas in East Nusa Tenggara (South-east islands) is US\$ 5 million. Across coastal and remote areas in Indonesia, the projected monthly revenue from the total available market is US\$ 14 million.
- **Expanding the water data platform**, with 5,000 points throughout Indonesia surveyed at the end of a five-year period, which will help to implement future projects. Komodo Water also plans to sell this data to other institutions and companies depending on the purpose. If for charity, no profit will be made from the data.
- **Developing a carbon offset marketplace**, creating a one-stop platform to learn about climate change and find sustainable products and carbon offset projects. Like carbon credits, Komodo Water plans to provide a platform for businesses who want to balance their carbon footprint by supporting projects or buying products that are environmentally friendly.
- **Developing a peer to peer (P2P) lending platform** to provide easier access to communities and fishing communities at project sites to obtain funds and improve their economic opportunities. The enterprise aims to build this platform as an end-user finance solution that will help its customers afford the products and technology it provides.

4.2 Risks And Challenges

- **Financial Challenges:**
 - Currency fluctuations result in price changes of imported machinery.
 - The derivative products need to be affordable for the rural customers while still being able to recover operational costs. Raising prices for the products to break even with the costs is difficult as the community will not be able to pay it.

- **Operational Challenges:** Limited trained personnel with the right skill set to operate and maintain the first generation of solar-powered ice machines in the remote islands. Local operators need to be able to address machinery breakdowns due to faults or disruptions, and have to regularly conduct operation and maintenance as required in the manual book and guide.
- **Technology Challenges:** The physical assets have a lot of maintenance downtime such as clean up, changing of spare parts or consumable parts, etc. Natural risk factors also remain. For example, if the technology is installed in a coastal area, there are risks of high waves, abrasion, or rust on machinery due to sea breeze.
- **Regulatory Framework:** For the project in the Komodo National Park requires permits from the local government and the Komodo National Park authorities as there are restrictions on buildings and businesses in the area. Komodo Water has partnered with the local government to install technology since the enterprise cannot own the land within the park region. Monthly activity reports also need to be sent to the park and local authorities for continued access and operation.

4.3 COVID-19 Impact On The Enterprise

COVID-19 hampered the enterprise's ability to conduct surveys and water exploration. Komodo Water's customers in the tourism sectors and offices also stopped purchasing products which reduced revenue in 2020. Repair and maintenance of existing technologies were also affected due to travel restrictions and delayed procurement of spare parts. However, daily operations and the purchase of derivative products by households and fishing communities continued unaffected.

4.4 Support Received To Date

The enterprise has received technical assistance and training from SEED, Tadamon, and Catalyst Changemakers Lab. The entity has also received assistance in business plan development and pitch development for funding. This assistance was given upon winning awards, including:

- Swiss Re Foundation – ReSource Award 2019
- Ideas for Action 2019
- SEED Low Carbon Award 2019
- King Sejong and Jang Yeong Sil Prize 2019
- Wave II 2012 – Semi Finalist
- Arthur Guinness Fund & British Council – Community Entrepreneur Challenge
- EY Entrepreneur of the Year 2017 – Community Development Award

4.5 Inputs Required For Growth

Financial support: The enterprise is currently seeking Series A funding to grow revenue. Komodo Water is looking for US\$ 2 million in funding over the span of 5 years, for 3 milestones.

- In the first year, US\$ 500,000 is needed to recruit team members (experts and staff) and to establish the project on a new site. The funds will also be used to collect water data on 1,000 new points and to create a development plan for a new site.
- In years 2 and 3, the enterprise is looking for US\$ 750,000 to launch operations on 2 additional sites. 3,000 water data points will be collected and a sustainable products marketplace will be developed.
- In the fourth and fifth years, an additional US\$ 750,000 will be needed to establish 2 new sites and collect 5,000 water data points. The enterprise will also develop a P2P lending platform for fishing communities.

Non financial support: The enterprise also requires technical assistance to develop market and business plans, and needs experts who can help in impact evaluation for on-going projects.