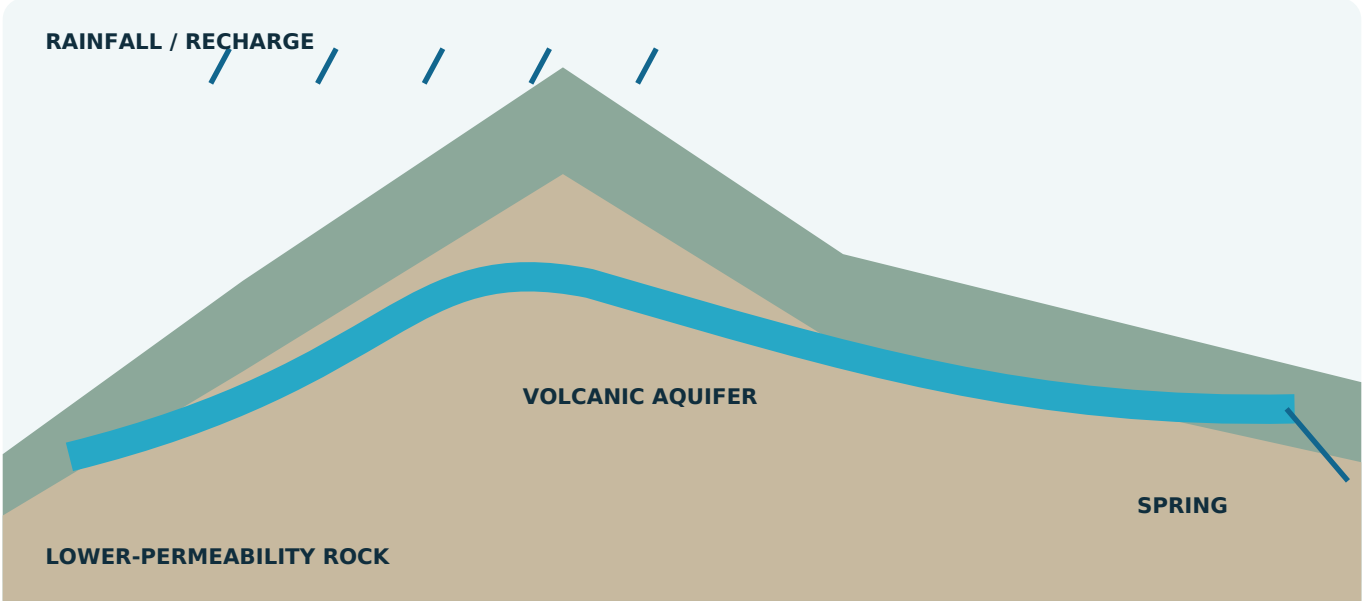
Technical & commercial research

01 / GROUNDWATER & SPRINGS

Purpose: establish what is known about Taveuni’s natural water resources, compare them with FIJI Water’s Yaqara aquifer, and identify the technical and commercial tests required before investment.

How a volcanic spring works

Rainfall infiltrates soil, fractured lava and permeable volcanic deposits. Groundwater is stored and transmitted through an aquifer. A spring forms where groundwater naturally reaches the surface. Individual springs may belong to different groundwater systems.



Conceptual geological section only; it does not depict a surveyed Taveuni aquifer.

Three distinct source options

Source	Technical opportunity / limitation
Upland spring	Naturally emerging groundwater; potentially gravity-fed, but seasonal yield must be measured.
Fractured volcanic aquifer	Groundwater accessed through boreholes; may be protected but not necessarily artesian.
Confined artesian aquifer	Pressurised groundwater below a confining layer; existence and pressure on Taveuni remain unproven.

Technical & commercial research

02 / WHAT IS DOCUMENTED ON TAVEUNI

Reported springs, boreholes and local constraints

Location	Historic observation and caution
Naselesele	Spring and approximately 50 m borehole reported; low coastal spring has potential tidal / saline influence.
Vunitarawau	Historically favourable spring quality attributed in part to rocky filtration; requires new testing.
Qeleni	Village spring used for drinking; quality, flow and existing community reliance must be checked.
Vunidawa	Spring used by nearby residents; commercial use cannot be assumed.
Mua	Seasonal water-source reduction reported; dry-season reliability is essential.

Groundwater evidence

Fiji Mineral Resources Department material describes fractured or fissured groundwater systems on Taveuni. A hydrogeological map of Vanua Levu and Taveuni (I. N. Gale, 1988) is catalogued by the National Library of New Zealand. Reported 2025–26 airborne electromagnetic survey work included Taveuni and may help identify candidate groundwater formations.

Critical distinction. The existence of springs and groundwater-bearing rock does not prove a large confined artesian aquifer, safe bottled-water quality or a sustainable commercial extraction rate.

Community water security

Rainfall abundance does not guarantee reliable household supply. Drought, shallow-source decline, contamination, insufficient storage and ageing pipes can all contribute to shortages. The business must prioritise village access, source protection and transparent allocation before commercial abstraction.

Technical & commercial research

03 / COMPARISON WITH FIJI WATER

Yaqara: the commercial precedent

FIJI Water is drawn from a protected artesian groundwater source in the Yaqara Valley on Viti Levu, not Taveuni. Its source is confined and pressurised; water is collected by borehole and bottled near the source.

Characteristic	Yaqara / FIJI Water	Taveuni
Volcanic setting	Confirmed	Confirmed
Groundwater / aquifers	Confirmed	Documented
Borehole abstraction	Operational	Documented locally
Confined artesian pressure	Confirmed	Not established
Mineral chemistry	Published	Candidate testing needed
Commercial sustainable yield	Operational precedent	Not established

Reported mineral composition

FIJI Water's 2025 quality information reports approximately: silica 88 mg/L; calcium 18 mg/L; magnesium 14 mg/L; sodium 16 mg/L; total dissolved solids 220 mg/L. These are source-specific figures, not targets or predictions for Taveuni.

Research conclusion: Taveuni plausibly has the same broad type of volcanic groundwater resource, but comparable artesian conditions, taste, purity and yield have not been demonstrated.

Priority field programme

Obtain hydrogeological maps and survey interpretations; identify protected recharge areas; record spring discharge through wet and dry seasons; drill or test candidate boreholes where justified; analyse microbiology, mineral composition and contaminants; model sustainable extraction and village-water interactions.

Technical & commercial research

04 / FIJI WATER BUSINESS ESTABLISHMENT

From source to premium export brand

Canadian entrepreneur David Gilmour developed Natural Waters of Viti in the early 1990s. Commercial production began in 1996 at Yaqara. The initial model combined access to a distinctive protected source, at-source bottling, international shipping and premium branding. The company subsequently expanded distribution in the United States and elsewhere.

1993	Gilmour develops business
1996	Yaqara commercial launch
1997–98	US market rollout
2000	Further bottling capacity
2004	Roll International acquisition
2024	FJ$140m expansion

Chronology compiled from published company histories and contemporary reporting.

Ownership and market positioning

Roll International, associated with Stewart and Lynda Resnick, acquired FIJI Water in 2004. The business differentiated itself through the square bottle, tropical imagery, premium hospitality and retail placement, and focused export distribution.

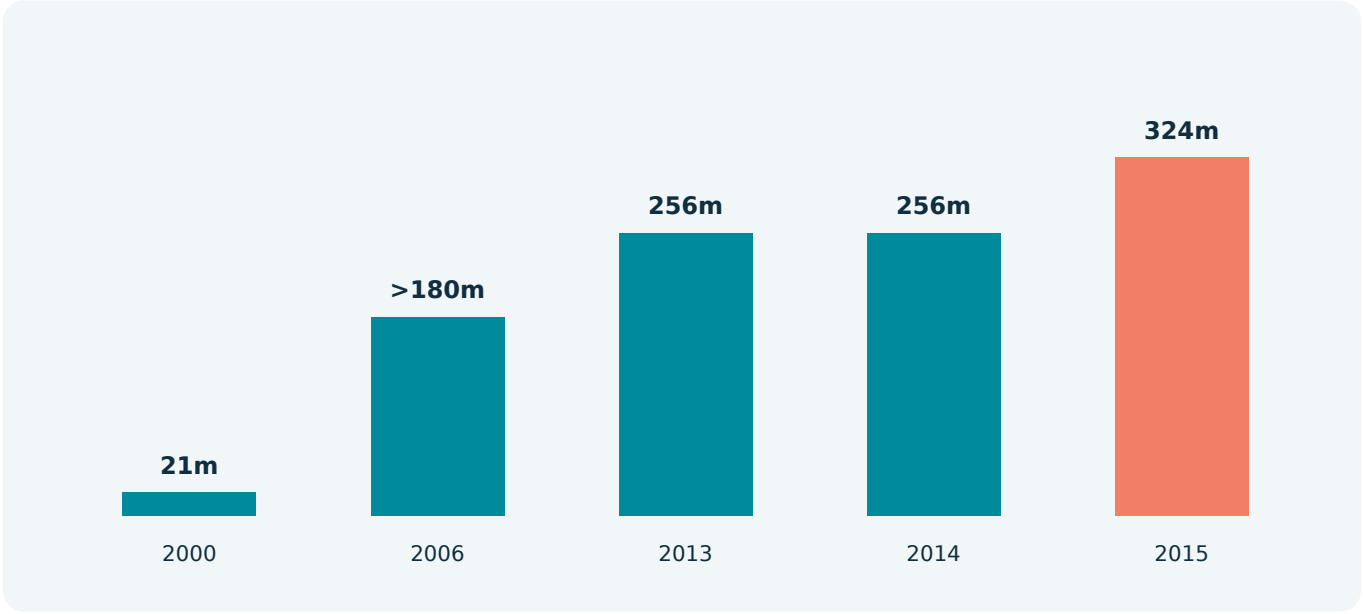
Lesson for Taveuni Water: Water quality alone is not the business model. Source rights, production reliability, packaging, freight, distribution and brand positioning must work together.

Technical & commercial research

05 / REPORTED SALES & REVENUE

Annual bottle sales — reported benchmarks

Selected company statements and contemporary reporting provide useful unit-sales milestones, although they do not constitute an audited annual series.



Millions of bottles per year. 2006 figure is reported as more than 180 million; other years are reported approximate annual sales.

Year	Reported volume	Evidence category
2000	21 million	Retrospective executive statement
2006	More than 180 million	Contemporary reporting
2013	256 million	Executive statement
2014	256 million	Executive statement
2015	324 million	Executive statement

Revenue and profitability

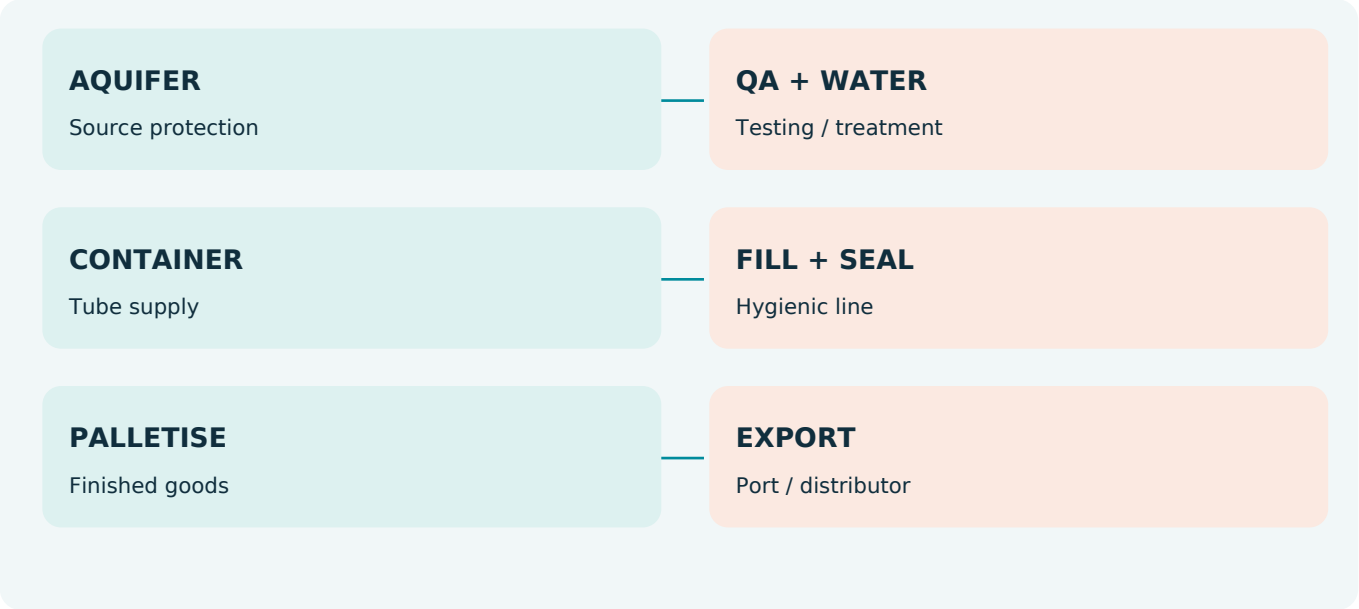
Secondary marketing sources report revenue benchmarks of more than US$150 million in 2008 and more than US$424 million in 2017. These are not independently verified audited accounts. FIJI Water is privately owned, and a dependable year-by-year net-profit series has not been located.

Do not infer profits from retail shelf prices. Retailers, distributors, importers, freight providers and tax authorities each absorb part of the consumer price.

Technical & commercial research

06 / PRODUCTION & YAQARA EXPANSION

Industrial production chain



Functional reconstruction from published production descriptions, not an authenticated Yaqara factory plan.

2024 capacity expansion

Reported investment	Additional lines	Reported capacity increase
FJ$140 million	Two high-speed bottling lines	Approximately 47%

The expansion illustrates the capital intensity of large export-scale operations. Earlier published descriptions and job roles refer to bottle forming, filling, capping, labelling, case packing, palletising and wrapping. Production is supported by water-quality controls, utilities, warehouse capacity and export logistics.

What is not publicly established

A verified dimensioned architectural plan of the Yaqara plant, precise operating margins, detailed equipment procurement costs and an annual audited profit series were not established in this research. Reconstructed layouts must not be presented as actual FIJI Water drawings.

Yaqara bottling plant / site

Photographic reference 01 | Exterior and landscape



01 MAIN PRODUCTION BUILDING

Large enclosed industrial facility with extensive roof area and adjacent service zones.
Site layout, building dimensions and construction phases are not established by this image.

Design implication: a Taveuni pilot facility should be sized independently, not copied from the much larger Yaqara operation.

Factory entrance / access

Photographic references 02-03 | Public-facing site and circulation



02 ENTRANCE AND GATHERING AREA

The site includes a formal entrance, access control and outdoor assembly space.



03 VISITOR ENTRY AND SECURITY

Entry signage and perimeter fencing illustrate controlled access to production areas.

Design implication: separate visitor, staff, materials-delivery and finished-goods routes.

Photographs are supplied research references, not measured architectural drawings.

Production interior / workforce

Photographic references 04-05 | Industrial hygiene and personnel



04 INSIDE THE PRODUCTION FACILITY

Industrial equipment visible behind visiting personnel.



05 STAFF / LOADING AREA

Industrial doors, safety apparel and operational circulation.

Photographs demonstrate industrial operating conditions but do not establish the exact filling-line specifications, throughput or equipment footprint.

TAVEUNI DESIGN APPLICATION

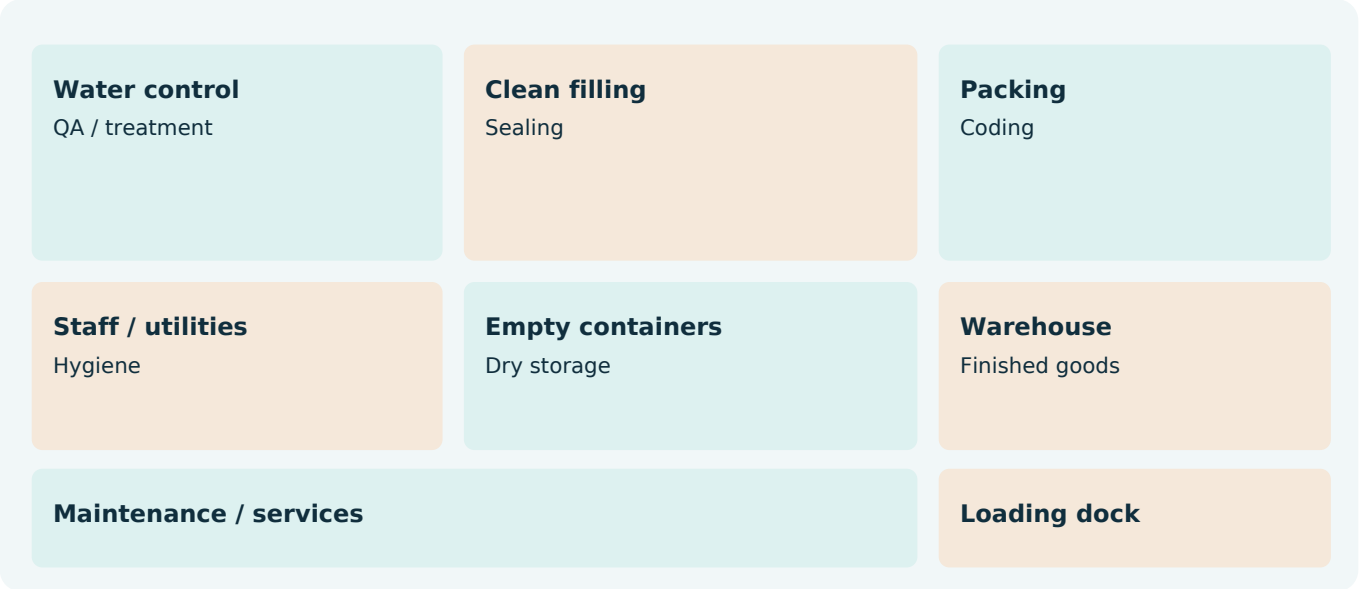
Provide controlled hygienic production, safe worker circulation, maintenance access, packing and pallet handling, and independent loading facilities.

Image provenance: user-supplied photographs previously located during research.
Reuse rights for external publication should be confirmed with the copyright owners.

Technical & commercial research

07 / TAVEUNI PILOT FACTORY

Indicative functional arrangement



Conceptual zoning only, not to scale; actual clean-area boundaries and personnel/material separation require specialist process design.

Illustrative production scenarios

Scenario	Nominal rate	Annual theoretical output
Pilot	500 units/hour	1.0 million units
Small commercial	1,000 units/hour	2.0 million units
Expanded	3,000 units/hour	6.0 million units

Assumes 8 hours/day and 250 days/year at 100% utilisation. Actual saleable production will be lower after maintenance, changeovers, rejects and operating constraints. Rates are illustrative and are not validated for paperboard tubes.

Packaging is the gating technology

The proposed three-ball and four-ball tennis-tube format requires a liquid barrier, food-contact compliance, seal-integrity and shelf-life testing, and a verified hermetic pop-open closure. Sparkling water adds pressure-resistance requirements. Compostability and recyclability claims must be supported by tests of the complete package.

Technical & commercial research

08 / INVESTIGATION & COMMERCIAL GATES

Sequence before capital commitment

Gate	Evidence required
1. Water source	Tenure, extraction rights, catchment mapping, seasonal flow, hydrochemistry and microbial results.
2. Community supply	Documented existing use, consultation, minimum water reserves, monitoring and grievance process.
3. Packaging validation	Food-contact testing, barrier performance, closure pressure, shelf life and verified environmental claims.
4. Process engineering	Pilot equipment trials, hygienic zoning, power, water, effluent, staffing and maintainability.
5. Commercial economics	Supplier quotations, unit costs, shipping, duty, wholesale price, distributor margins and demand.
6. Investment decision	Pilot data and signed distribution commitments before expansion.

Business model implications

FIJI Water demonstrates that Fijian volcanic groundwater can underpin an international premium-water business. It does not establish that Taveuni has a comparable exploitable aquifer or that a new paperboard-packaged product can reproduce its economics.

Recommended strategy: develop the Taveuni groundwater and packaging feasibility programmes in parallel; commit to a modest modular pilot only after both have passed independent technical validation. Community water-network investment should be contractually measurable, not simply a brand promise.

Status of findings

Documented: volcanic groundwater and springs on Taveuni; FIJI Water’s Yaqara artesian source; selected historical sales; 2024 expansion. Unverified: a Taveuni artesian source with matching chemistry, commercial yield, exact startup economics and a viable paperboard filling system.

Technical & commercial research

09 / SOURCES & RESEARCH NOTES

Hydrogeological map

Gale, I. N. (1988), Hydrogeological Map of Vanua Levu and Taveuni. National Library of New Zealand catalogue: https://natlib.govt.nz/records/39625760

Taveuni ecosystem study

SPREP, Ecosystem and Socio-Economic Resilience Analysis and Mapping — Taveuni Island: https://library.sprep.org/sites/default/files/Tav-ESRAM-Digital-Small.pdf

FIJI Water quality

FIJI Water, company source and water quality information: https://www.fijiwater.com/

Early company development

McMaster and Nowak (2003), Natural Waters of Viti Limited, University of the South Pacific repository: https://repository.usp.ac.fj/id/eprint/5263/

2004 acquisition

BevNET (29 Nov 2004), FIJI Water acquired by Roll International: https://www.bevnet.com/news/2004/11-29-2004-fiji_water_acquired_roll_international.asp

2024 plant expansion

Office of the Prime Minister, Fiji (22 Feb 2024), Yaqara expansion: https://www.pmoffice.gov.fj/prime-minister-rabuka-inaugurates-fiji-water-capacity-expansion-project-22-02-2024/

Factory photo reference

The Fiji Times, 2024 opening gallery: https://www.fijitimes.com.fj/image-gallery/opening-of-the-new-fiji-water-plant-at-yaqara-in-tavua/

Sales figures

Reported company executive statements and contemporary media coverage discussed in the research; underlying original year-by-year audited sales records were not available.

Revenue estimates

Secondary marketing-industry historical revenue benchmarks; not independently audited or verified.

Groundwater survey

Reported 2025–26 airborne electromagnetic groundwater survey covering Taveuni; obtain original technical outputs from Fiji’s relevant government agencies.

Research note: historical water-quality findings do not establish current drinking-water compliance. All proposed abstraction, treatment, packaging and environmental claims require site-specific independent verification.