

WATER AUTHORITY OF FIJI

**Vulnerability Assessment on Water Supply and
Water Quality, Critical Infrastructure and
Environmental performance At Water Authority of
Fiji.**

TODAY'S PRESENTATION

- Mission, Vision & Values
- Introduction
- Objectives
- Key Vulnerability
- Summary Findings
- Approach – Risk Assessment
Methodology
- Operational Risk
- Mitigation Measures
- Adaptation Measures
- Stakeholder Analysis
- Conclusion





Our Vision

Clean Water and Sanitation
for a Better Life



Clean Water & Sanitation for a Better Life



Our Mission

We are committed to optimising
water and wastewater services
through:

Resilience
Innovation
Safe Working Practises
Engaging Stakeholders
Capacity Building
Being Environmentally Focussed
Modenization



Our Values

Our Key values are:

Customer Focus
Learning and Growth
Intergrity
Passion
Accountability and Transperancy
Adaptability
Respect
Teamwork

INTRODUCTION

- Is an island country in Melanesia in the South Pacific Ocean.
- About 3,000km east of Australia and 2,000km North of New Zealand.
- Consists of 332 islands and thus has a predominant and large coastline.
- Viti Levu is the largest and most important of the islands, harbouring Fiji's capital city and most of the major towns concentrated around its coast.
- Total Population of Fiji is 912,241 and Suva has a city population of 175,000
- Suva and its bordering cities -- Lami, Nausori, and Nasinu -- have a combined population of **330,000**,
- Total Area is 18274 km²
- Suva City has a total of 2,047 km²
- Known as a Tourist country – 843 millions tourist in 2017.







BACKGROUND

- Water Authority of Fiji is a corporate statutory authority under the WAF 2007 promulgation solely responsible for providing sustainable water & waste water services to the nation.
- Climate Change have evidently posed significant risk and opportunities for the Water Authority of Fiji.
- Over the last decade Fiji has been experiencing some major climatic events that have either disrupted provision of service or completely damaged water and wastewater assets. The cost of a quick fix and permanent solution ran into the millions. To date, Water Authority of Fiji's response to managing risks has mainly shaped by the:
 1. Water Authority of Fijis Strategic Plan (2014 – 2016, 2017 – 2019)
 2. Corporate Plan (2014, 2015, 2016, 2017)
 3. Capital Procedures Manual (Revised to Project Delivery Framework 2017)
 4. Water Authority of Fijis 20 Masterplan

OBJECTIVES

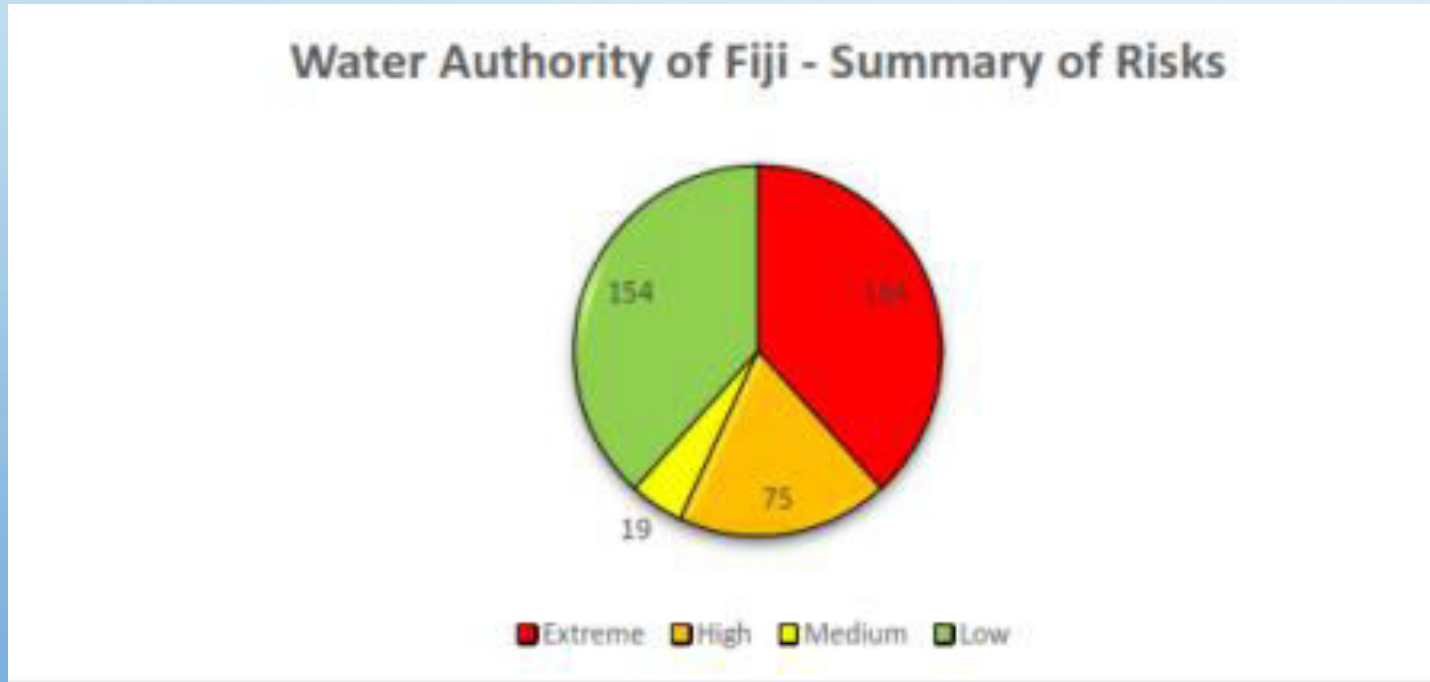
- The Water Authority Of Fiji Conducted This Climate Change Risk Assessment To Improve Its Understanding And Identify Various Climate Change Risks That Were Directly Associated With Its Major Infrastructure And Operations.
- The Purpose Of This Assessment Is To Be A Reference Document On The Climate Change Risks That The Overall Assessment Has Identified And Will Need To Be Mitigated And Managed By The Authority. It Is Envisioned That Management Of The Identified Risks Will Occur Within The Context Of The Water Authority Of Fijis Ongoing Strategic Plan And Risk Management Procedures.

VULNERABILITY

- FLOODING
- TROPICAL CYCLONES
- SEA LEVEL RISE
- INCREASE IN TEMPERATURE

SUMMARY FINDINGS – STRATEGIC & OPERATION CLIMATE CHANGE RISKS

- The risk ratings derived from WAF's risk register is than simultaneously pegged against the 20 year master plans that currently exists within the corporate body.



Water Authority of Fijis Summary of Risks triggers the need to develop plans for the infrastructures that will be resilient and adaptable

APPROACH - RISK ASSESSMENT METHODOLOGY

THE RISK ASSESSMENT ARE CLASSIFIED UNDER THE FOLLOWING CATEGORIES:

1. COMMUNITY & HEALTH
2. ENVIRONMENT
3. ECONOMY
4. GOVERNANCE
5. CUSTOMERS STAFF FINANCIALS
6. BUILDING, COMMS, FLEET
7. WATER, WASTEWATER, SLUDGE, CATCHMENT

OPERATIONAL RISK - FLOODING

- The operational risks identified under the climate risk register gravitated more towards infrastructure vulnerabilities and supply and demand issues rather than strategic vulnerabilities with regards to climate change adaptation. This is likely stemming from the old infrastructure in service and experiences encountered from previous climatic events that either disturbed or disrupted the organizations ability to maintain service.

1. Water supply and water quality
2. Critical infrastructure
3. Environmental performance



1. Water Supply & Water Quality

Climate Change is expected to impact water quality and service levels. A recent event in Nadi whereby algae bloom was experienced in Vaturu Dam severely impact Treatment and Service Levels for around 3 weeks. A key learning from this event was that the Water Authority of Fiji's Water Treatment Plants are not equipped to handle this potential climate change related issues now or in the future. Meeting customer demands was identified during the Risk Assessment as a potential high risk area taking into consideration the 2030 scenario.



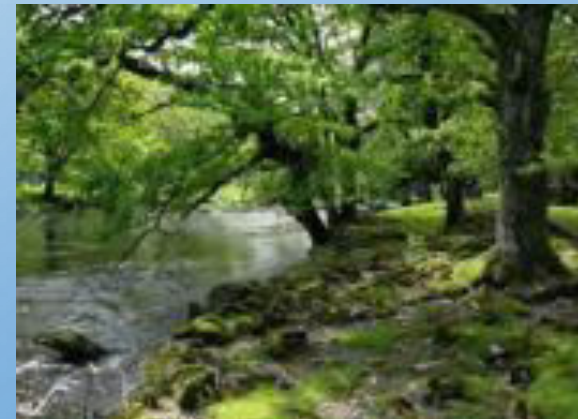
2. Critical Infrastructure



Even though Climate Change has had no major long term impacts on WAF's asset the build-up towards major events is being noticed. Isolated major events has occurred over the last decade that has impacted business continuity and service delivery

3. Environmental performance

This is a governing risk with potential for climate change to detrimentally impact high priority areas. The Water Authority of Fiji is currently struggling to meet the existing Environmental Management Act 2005 that governs environmental contamination standards. Current process will need to be reviewed to ensure that impact is minimal on the organization from a financial and social stand point.



MITIGATION MEASURES

- Start investing in other wastewater treatment technology available and move away from Anaerobic Treatment.
- Proper drainage channel & drainage maintenance
- River Dredging - increase flood discharge capacity.
- Floodgates - enable floodwaters to escape and prevent seawater entering, helping prevent water logging and assisting rapid drainage.
- Sea walls - prevent seawater intrusion into farmland
- Non-structural measure, a flood forecasting system.
- Watershed management, particularly reduction of soil erosion and sedimentation, will require attention



ADAPTATIONS

Priority Adaptation Options

The following points provide an overview of the priority adaption options and the plans towards building climate resilient infrastructures:

- 5 – 10 years – establish and build foundations on consolidating with interdependencies and preliminary discussions and works on climate change efforts- Mapping vulnerable infrastructures as baselines
- Investment focus based on climate change will be dictated on the supply and demand parameters extracted out of the climate risk register
- 5 -10years will require the WAF to adapt to climate change and in the 15 -20 years, the WAF will plan and build for climate resilient infrastructures
- Aligning the WAFs Climate change efforts with the Government of Fijis COP23 Presidential Commitment - Linking WAFs objectives of climate change to the bigger picture
- Flood management requires an integrated approach to address all issues in a holistic manner. Issues related to land and water resources use need to be planned and executed in a manner that will reduce or eliminate risks.
- Community co-operation and participation is essential for the success of flood mitigation programmes. The Drainage Boards include members of different communities from different areas as the beneficiaries. With the latter having ownership of the scheme support for changes, improvements and reviews are undertaken with enthusiasm.
- Public awareness and education on the application of Flood Management is necessary. Full community participation with ownership needs to be supported with strengthened institutional arrangements and resources.



STAKEHOLDERS PROCESS

The internal workshop was carried out with the following **internal stakeholders**:

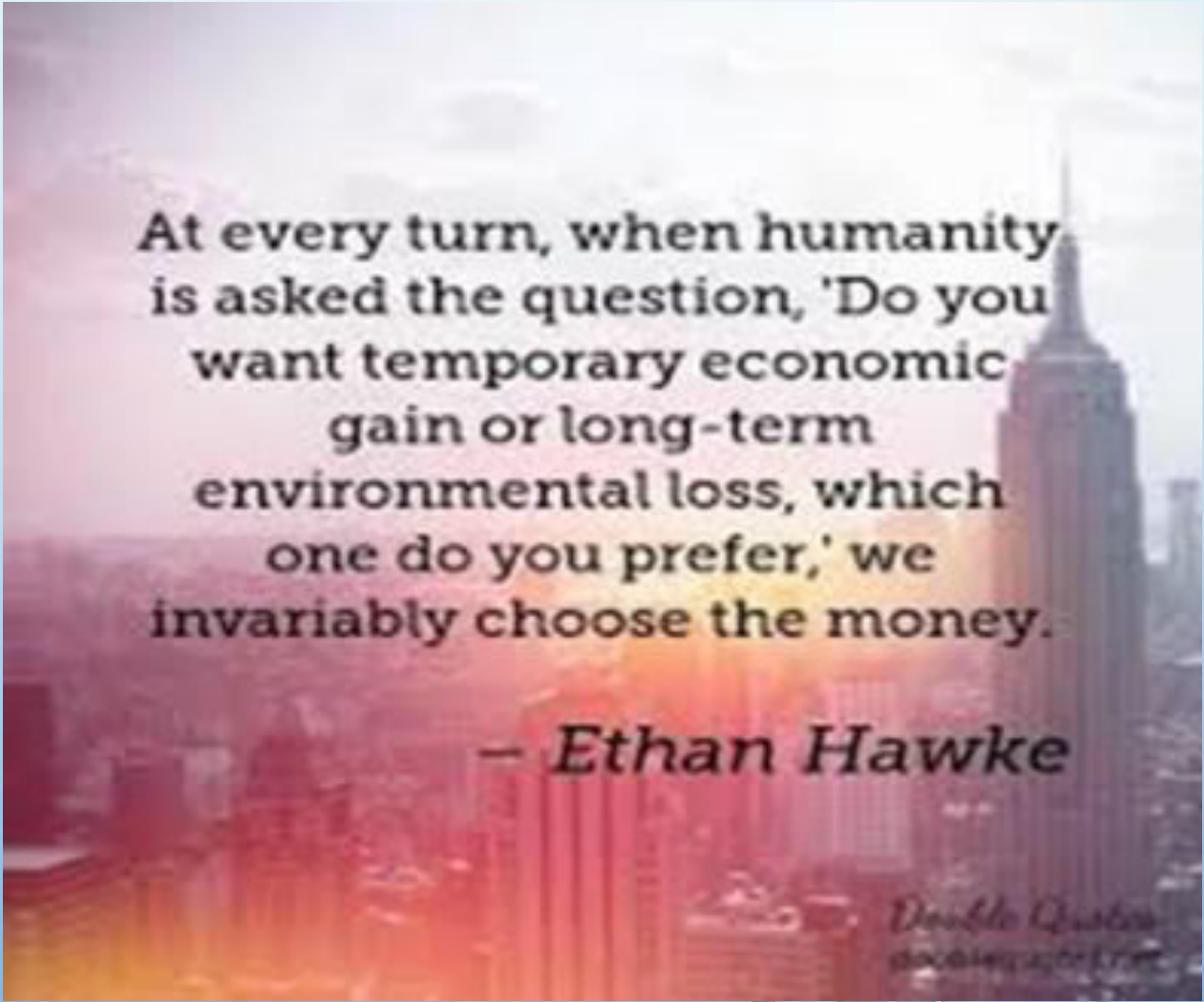
- WAF Senior Management
- Strategic Planning Unit
- Water and Waste Water Operations Unit
- Finance Unit
- Customer Services
- Environment
- Integrated Water Resources Management Unit

External stakeholder engagement

The Water Authority of Fiji's key external stakeholders are;

- The Fiji Roads Authority
- Fiji Electricity Authority
- Telecommunications.

CONCLUSION



At every turn, when humanity
is asked the question, 'Do you
want temporary economic
gain or long-term
environmental loss, which
one do you prefer,' we
invariably choose the money.

– *Ethan Hawke*

*Double Quotes
doublequotes.com*



VINAKA

Thank You

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