Tonga Meteorological Services

Ministry of MEIDECC, Government of Tonga

"Providing meteorological and maritime radio services in support of economic development, safety and the general well-being of citizens and visitors to the Kingdom of Tonga"

Citizen Weather & Early Warning Mobile App

Action Plan | 2027–2028

Tonga Meteorological & Coast Radio Services • Information & Digital Transformation Department

Ministry of Meteorology, Energy, Information, Disaster Management, Environment, Climate Change and Communications (MEIDECC)

Executive proposition

The challenge

Weather and warning information is published across website sections. Citizens need fast, understandable access when decisions matter.

The solution

A single bilingual Android/iOS channel for approved forecasts, warnings, marine and climate products, with location preferences and cached updates.

Design principle: Mobile complements—not replaces—radio, SMS, websites and community warning systems.

Why this matters for Tonga

People and livelihoods

Farmers plan around rainfall and drought; fishers and maritime travellers need wind, swell and sea-state information.

Geographic resilience

Different island groups face different conditions. Connectivity and power interruptions can occur during severe weather.

The app should make official information easier to find, interpret and act on—without creating a new forecasting authority.

Current services and user journey

- met.gov.to provides forecasts, warnings, marine and climate information, and supporting imagery.
- Citizens may need to navigate multiple pages to locate the relevant bulletin.
- A mobile app can organize the same authoritative information by location, topic and urgency.
- API availability, content formats, update frequency and rights must be confirmed with Tonga Met.

SWOT analysis

STRENGTHS

Official meteorological source; established public content; trusted institutional mandate.

WEAKNESSES

No confirmed app-ready API; variable data formats; dependence on connectivity.

OPPORTUNITIES

Bilingual delivery; targeted notifications; government API reuse; public education.

THREATS

Cyclones and outages; misinformation; alert fatigue; cybersecurity and maintenance costs.

Gap analysis: from website to citizen service

AS IS

Users manually search and revisit pages. Information can be spread across products and external links. No app-specific offline workflow is established.

TO BE

One accessible mobile interface; official approved alerts; island-group preferences; last-updated cached bulletins; clear links to full source products.

Success means easier access to official information—not independent prediction or unapproved automated warnings.

Proposed mobile app: information catalogue

WEATHER

Current and 3-hour forecasts; 10-day outlook; temperature, wind and rainfall.

WARNINGS

Official severe weather and cyclone bulletins; issue time, affected area and validity.

MARINE

Marine forecasts, wind, swell, sea state and relevant coastal information.

CLIMATE

Rainfall and ocean outlooks; drought and seasonal climate information.

MAPS & MEDIA

Available radar/satellite imagery, weather maps and linked reports.

PUBLIC GUIDANCE

Preparedness guidance, definitions, official contacts and source links.

Experience designed for Tonga

- Tongan and English interface, with terminology reviewed by Tonga Met.
- Choose an island group or location; retain settings without mandatory registration.
- High-contrast warnings, readable typography and screen-reader support.
- Low-data mode, compressed media and clearly marked offline cached content.
- Push alerts only for officially approved warnings; control notification preferences.

Technical architecture and governance

SOURCE & APPROVAL

Tonga Met publishes and approves forecasts and warnings. Confirm API/feed availability and publication permissions.

DELIVERY SERVICE

Secure ingestion, structured content API, audit log, cache, monitoring and push notification queue.

CITIZEN APP

Android/iOS clients, bilingual screens, island preferences, accessible warnings and last-sync timestamps.

No scraping-only dependency for critical alerts. Maintain human-authorized publication and tested fallback channels.

Four-stage implementation strategy

01 DEFINE

Months 1–3

Governance, requirements, content inventory, API feasibility and baseline measures.

02 BUILD

Months 4–9

Prototype, integrations, bilingual content, alerts, security and testing.

03 PILOT & LAUNCH

Months 10–18

Island-group pilot, accessibility feedback, hardening and national rollout.

04 SUSTAIN

Months 19–24

Operational handover, performance monitoring, impact evaluation and improvements.

Institutional responsibilities

TONGA MET • Product owner

Owns official content, validation, alert thresholds and approvals, translations and service quality.

IDT • Technical delivery

Architecture, integrations, cybersecurity, hosting coordination, testing and technical handover.

PARTNERS • Operational reach

Disaster management agencies, telecom providers, communities, accessibility groups and app distribution partners.

Year 1 roadmap • 2027

Q1

Governance, stakeholder workshops, source-data audit, requirements and approval

Q2

UX prototypes, translation workflow, API/content service and initial development

Q3

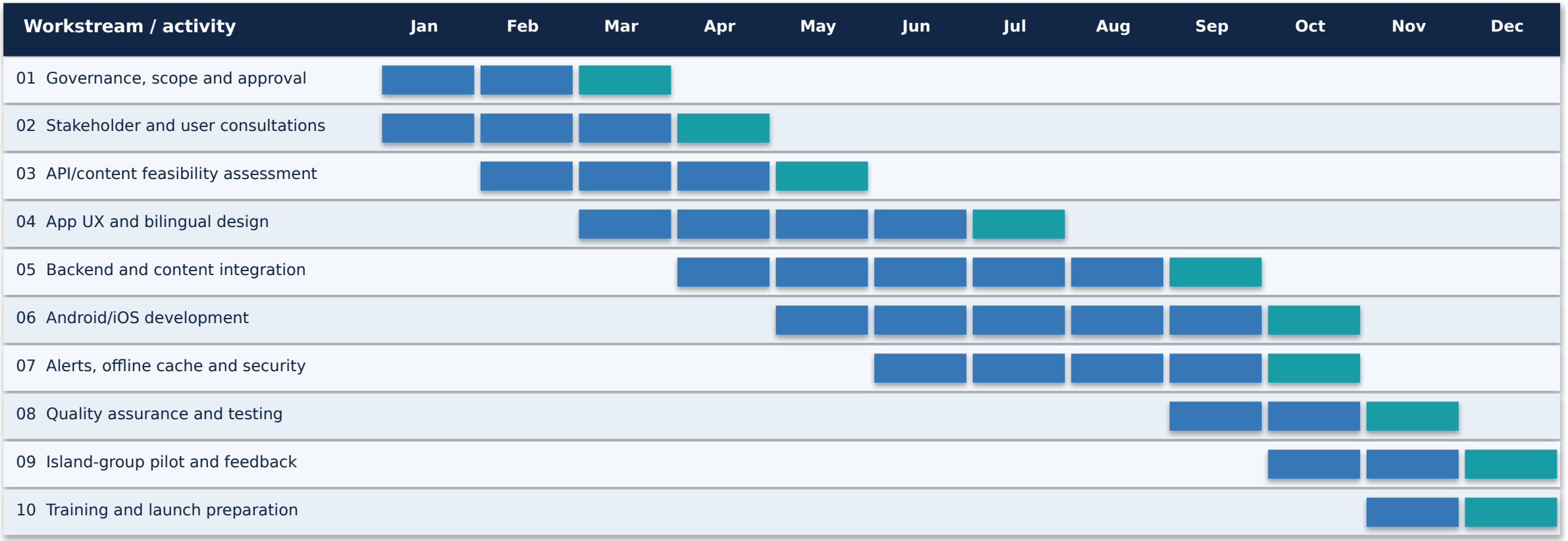
Forecast and marine screens, warning pipeline, offline cache, security testing

Q4

User acceptance, pilot across selected island groups, training and refinements

2027 implementation timetable

Monthly work plan • Tonga Meteorological Services citizen mobile application • Indicative schedule



Blue = planned activity • Teal = target completion month • All dates subject to project approval and source-data readiness

2027 work plan • responsibilities and deliverables

Detailed activities supporting the monthly implementation timetable

01 Governance, scope and approval

Tonga Met / IDT • Charter, scope, steering group

02 Stakeholder and user consultations

Tonga Met / communities • User needs, island-group priorities

03 API/content feasibility assessment

IDT / Tonga Met • Source inventory, API feasibility

04 App UX and bilingual design

UX / Tonga Met • Prototype, Tongan/English content

05 Backend and content integration

IDT / developers • Approved feeds, content service

06 Android/iOS development

Developers • Working mobile application

07 Alerts, offline cache and security

IDT / Tonga Met • Approval workflow, offline cache

08 Quality assurance and testing

QA / IDT • Test report, remediation

09 Island-group pilot and feedback

Tonga Met / pilot users • Pilot findings, improvements

10 Training and launch preparation

Tonga Met / IDT • Guides, operational readiness

Deliverables are proposed acceptance outputs; named owners require formal confirmation.

Year 2 roadmap • 2028

Q1

Pilot improvements, accessibility, operational readiness and incident drills

Q2

Phased Android/iOS launch, support channels and public awareness

Q3

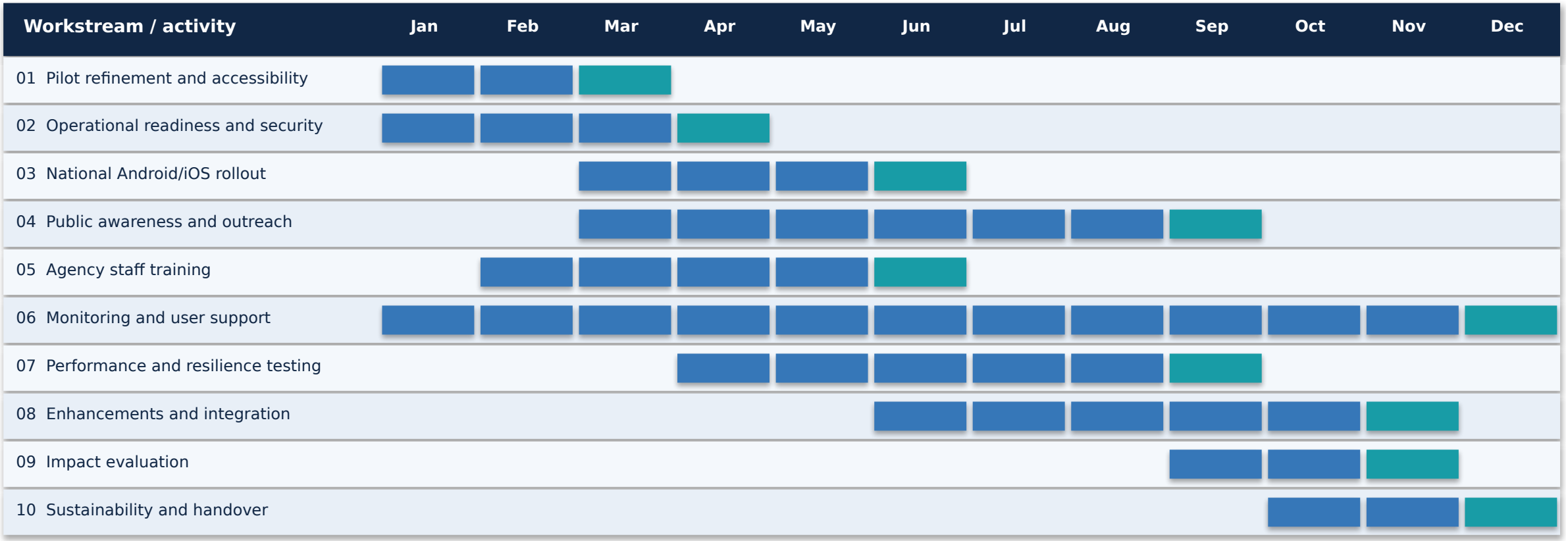
Service monitoring, load testing, adoption outreach and prioritized enhancements

Q4

Independent evaluation, documentation, ownership transfer and funded operations

2028 implementation timetable

Monthly work plan • Tonga Meteorological Services citizen mobile application • Indicative schedule



Blue = planned activity • Teal = target completion month • All dates subject to project approval and source-data readiness

2028 work plan • responsibilities and deliverables

Detailed activities supporting the monthly implementation timetable

01 Pilot refinement and accessibility

Developers / users • Resolved pilot issues

02 Operational readiness and security

IDT / Tonga Met • Security review, support procedures

03 National Android/iOS rollout

Tonga Met / IDT • Public app release

04 Public awareness and outreach

Tonga Met / partners • Radio, community and digital outreach

05 Agency staff training

Tonga Met / IDT • Trained content and support staff

06 Monitoring and user support

Operations team • Usage, uptime and incident reports

07 Performance and resilience testing

IDT / QA • Load, failover and recovery tests

08 Enhancements and integration

Developers / Tonga Met • Priority service improvements

09 Impact evaluation

Steering group • Adoption and outcome assessment

10 Sustainability and handover

MEIDECC / Tonga Met • Budget, ownership, handover

Deliverables are proposed acceptance outputs; named owners require formal confirmation.

Indicative budget • USD 200,000

Mobile app, backend & integration	**$80,000**
Security, hosting & continuity	**$20,000**
Translation, content & accessibility	**$20,000**
Pilot, training & public awareness	**$50,000**
Operations and support (2 years)	**$10,000**
Contingency	**$20,000**
TOTAL • Preliminary planning estimate	**$200,000**

Expected outcomes and measurement

CITIZEN OUTCOMES

Faster access to relevant official updates; improved preparedness and more informed farming, fishing and travel decisions.

PROPOSED KPIs

Monthly active users; app availability; notification delivery latency; content freshness; user satisfaction; coverage across island groups.

Set baseline and numerical targets during discovery; measure adoption and accessibility without overstating disaster-loss attribution.

Risks, safeguards and continuity

Poor connectivity

Offline cache with last-updated label; low-data mode; retain radio/SMS channels.

Incorrect or late alerts

Approved source workflow, audit trail, clear validity and escalation procedures.

System disruption

Monitoring, backups, redundancy, incident drills and recovery objectives.

Low adoption

Community testing, bilingual content, accessibility and outreach.

Long-term cost

Documented ownership, training, support agreements and recurring budget.

Decisions required to proceed

- Confirm Tonga Met product owner, steering group and warning-approval authority.
- Approve discovery phase and audit available met.gov.to data sources and feeds.
- Agree pilot locations, citizen groups and Tongan-language review process.
- Validate procurement approach, US$200,000 estimate and operating budget.
- Approve technical architecture, security controls and measurable success criteria.

Mālō ʻaupito

A trusted weather and early warning service in every citizen’s pocket.

Tonga Met • IDT • MEIDECC | Proposed Action Plan 2027–2028