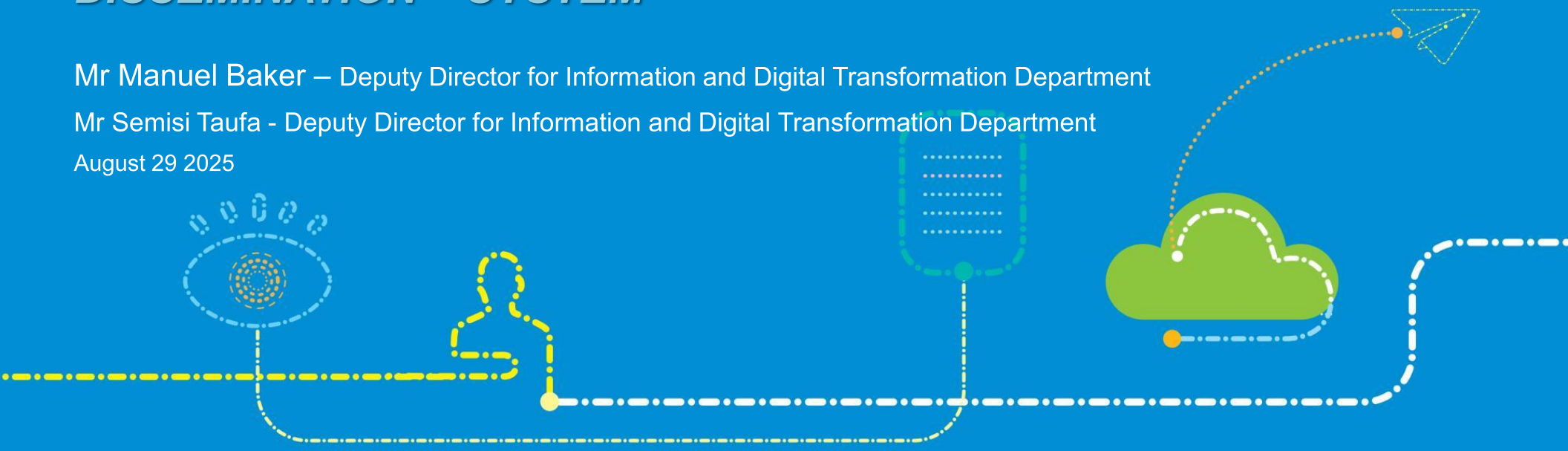
Capacity Building Training Programme on Digital Technologies for Addressing Climate Change Impact in the Pacific

ACTION PLAN – *WEATHER FORECAST SMS APP WEATHER DISSEMINATION SYSTEM*

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1. Background and Purpose

- **Background**

Tonga faces significant climate-related risks, required robust climate resilience measures. Effective data management is crucial to managing these challenges effectively and sustainable.

- **Purpose**

- This project is focusing on the Weather Forecast SMS Application System. The idea of this project is to disseminate weather forecasts data to the community through SMS.

- The purpose of this SMS technology program is to provide important information weather forecast to each villages.

- Many villages and remote islands do not have good internet access, so this method helps to deliver this information to those areas.

This is one way to ensure that the daily weather forecast and natural disaster alert like hurricanes, floods, heavy rains, Tsunami warning and other events can reach everyone.

2. Current Status and Issues

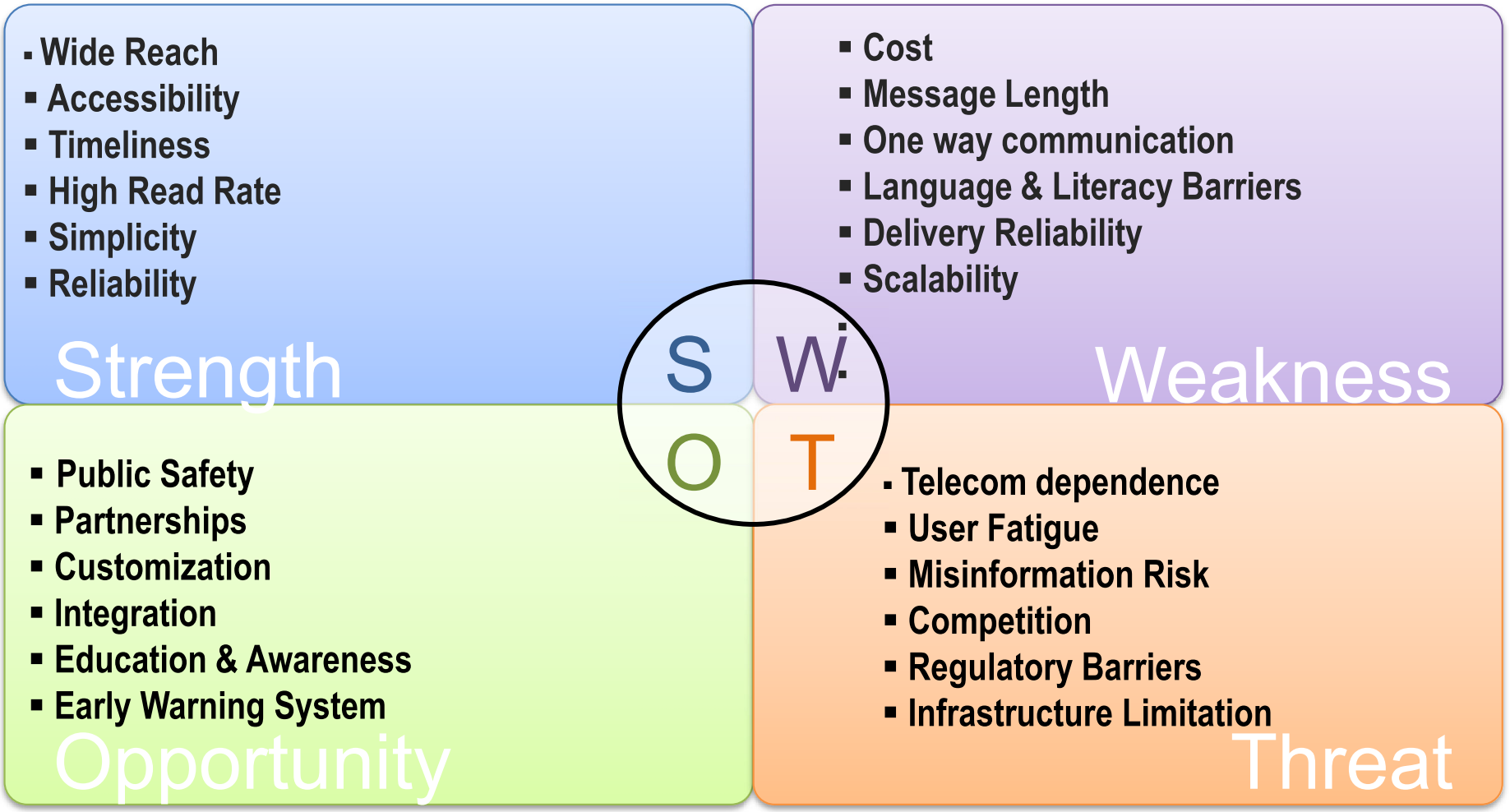
Current Status:

- Currently there is no SMS technology system, used by the Meteorology department to distribute weather forecasts and natural disaster alert to each villages.
- Radio Tonga and TV Tonga and Social Media are used by Tonga Meteorology to disseminate Weather Forecast and Warning Alert

Current Issues:

- Remote and vulnerable groups often excluded; SMS not widely scaled across the population.
- There are towns and islands that these media sources can't have access to.

2.1. Current Status and Issues – SWOT Analysis



2.2. Current Status and Issues – Gap Analysis

Proposed Overall Goals (Objectives)

To Be

- Disseminate Weather forecast using SMS
- Disseminate Natural Disaster Alert
- Feedback

As Is

- Data Availability
- National Radio and TV
- Social Media
- E-Mail System

Proposed Purpose

- Implement SMS APP System
- Integrate Early Warning System
- Prepare SMS App System guideline

3. Improvement Strategy

- To further improve the distribution of weather forecasts and natural disaster alerts. Ensuring that national TV and radio signals reach all parts of the country.
- In addition Telecom is re-ensuring that its telecommunications towers reach the whole countries in terms of internet coverages.

- The development of a technology application (sms) that can meet the needs of disseminating weather forecasts and natural disaster alerts to everyone at anytime. It is important that people know this information.

- Implement Weather Forecast SMS Application Dissemination System

- Training

4. Specific Action Plan

- Conduct stakeholder workshop with meteorological agency, telecom operators, disaster management agencies, and NGOs.
- Sign MoUs/agreements with telecoms for bulk SMS delivery (preferably subsidized/free for end-users).
- Secure funding (government, donor, PPP model) for pilot and scaling.
- Develop technical system architecture
- Integrate SMS gateway
- Design standardized SMS template
- Deploy alert categories
- Pilot Implementation
- Monitoring and Evaluation

4.1. Specific Action Plan

- **The steps to achieve your goals**

STEP 1
- Define objective and scope
- Secure Partnership

STEP 2
- Select Technology Platform
- Design and Build Message for the SMS System

STEP 3
- Pilot Testing and Rollout
- Monitoring & Evaluation , Sustainability and Scaling

5. Outline of the Action Plan

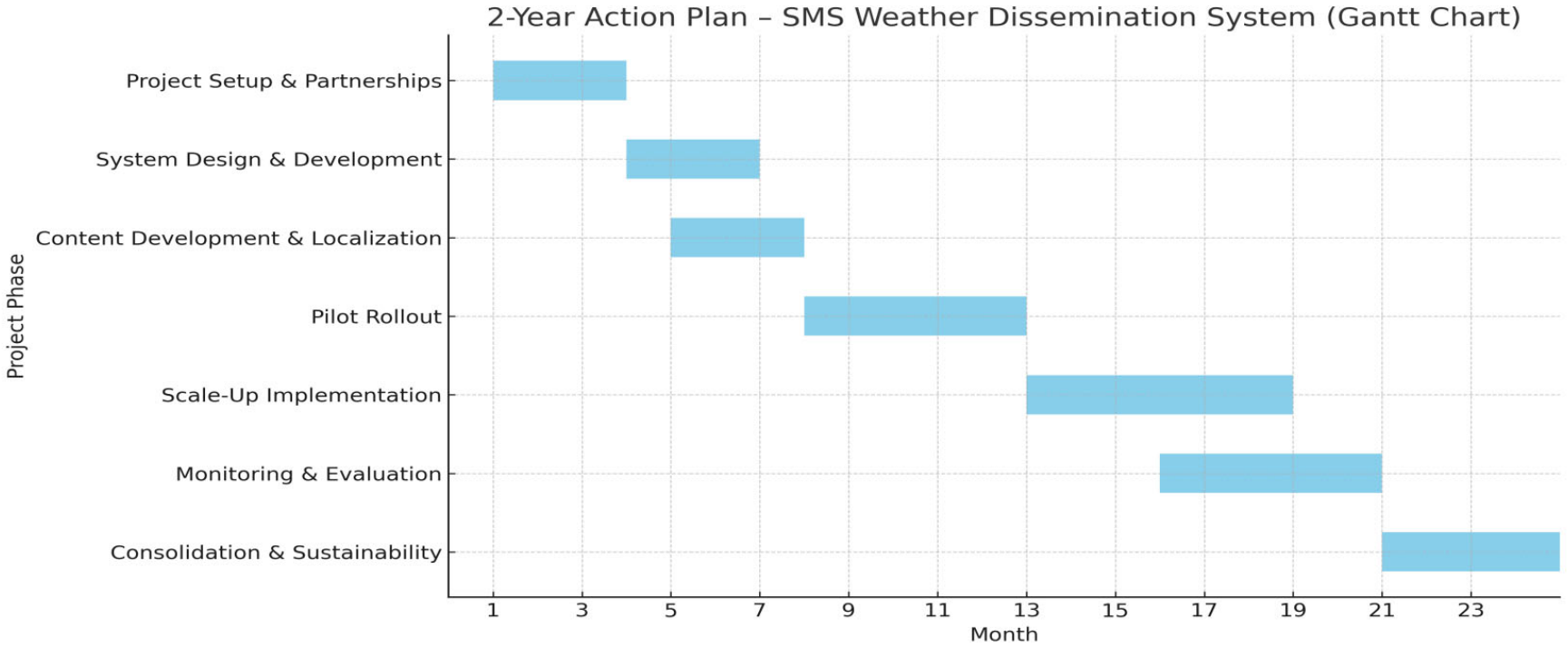
- **Implementing Organization**
  - Name of the organization: Tonga Meteorological & Coast Radio Service (MEIDECC)
  - Nature or type of the organization: Government Organization
  -Major functions of the organization: Refer to Meteorology Act (Section 7)
- **Duration of the Project : (2) Year(s)**
  - Date of commencement: 01-09-2025
  - Date of completion: 01-09-2027

5.1. Action Plan – Time Table (First year)

- **Months 1–3:** Project setup, partnerships, funding.
- **Months 4–6:** System development (SMS gateway + API integration).
- **Months 5–7:** Content design, templates, translation.
- **Months 8–12:** Pilot implementation & evaluation.

5.2. Action Plan – Duration (Second Year)

- **Months 13–18:** National scale-up, inclusivity features (IVR, customization).
- **Months 16–20:** Monitoring & midterm evaluation.
- **Months 21–24:** Sustainability, institutionalization, expansion.



5.3. Outline of the Action Plan–Budget (if needed)

Category	Year 1 (USD)	Year 2 (USD)	Total (USD)
System Development	300,000	100,000	400,000
Training	50,000	100,000	150,000
Stakeholder Engagement	30,000	30,000	60,000
Operational Costs	50,000	50,000	100,000
Marketing and Public Awareness	20,000	30,000	50,000
Contingency (10%)	45,000	31,000	76,000
Total	***495,000***	***341,000***	***836,000***

6. Expected Results – Outputs/Outcomes

- **Economic Effects**

✓ Reduce losses and damaging from disasters
✓ Fisheries and Marine time safety
✓ Cost Effective Communication

- **Technical Effects**

✓ Improve Communication infrastructure
✓ Automation and Efficiency
✓ Integration with Early Warning System

- **Social and Environmental Effects**

✓ Improved Community Safety
✓ Inclusive Communication
✓ Trust and Awareness
✓ Strengthened Social Networks

6.1 Expected Results – Challenges/Solutions

- **Challenges and Risks**

✓ Network reliability and system downtime
✓ High operation cost
✓ Digital exclusion
✓ Coordination Problems
✓ Disaster Impact on Infrastructure

- **Solutions**

✓Establish a redundant channel and use cloud-base hosting
✓ Telecom to subsidized/free public service SMS (government to fund)
✓Complement SMS with radio, loudspeakers, community meetings; set up voice-based alerts (IVR) for low-literacy users
✓ Form a multi-stakeholder task force (meteorological office + telecoms + disaster agencies).
✓ Use redundant systems (radio, community sirens, satellite SMS backup).

MALO ÁUPITO



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