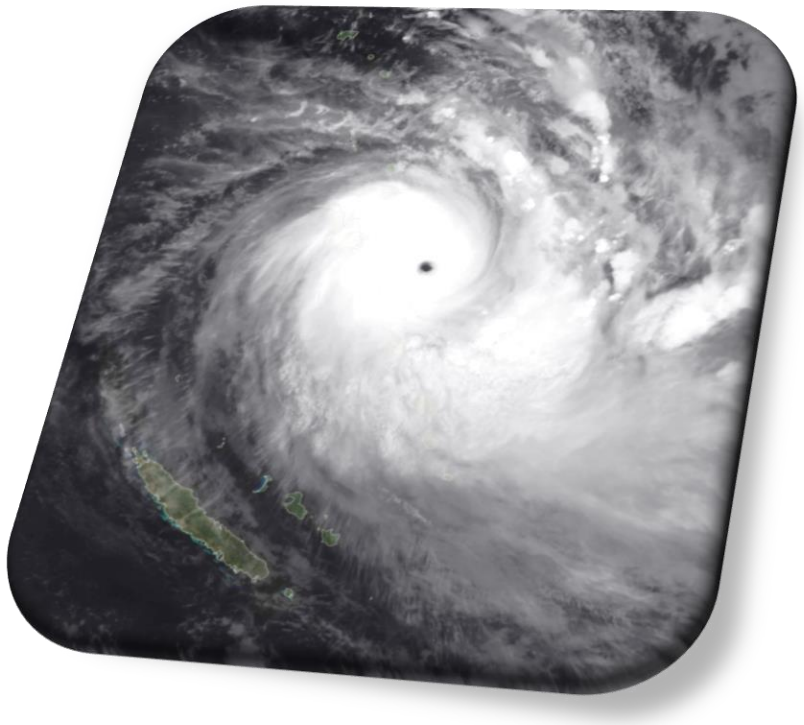
Weather Ready Pacific Decadal Programme of Investment

Presented by:

Ofa Fa'anunu
Director Tonga Met Services
President – WMO RA-V

PACIFIC METEOROLOGICAL COUNCIL

Context



- **Pacific Islands are highly vulnerable** to extreme weather, hydrological and ocean events
- **Economic losses** from cyclones and flooding in the South Pacific region in 2020 were around $1 billion with at least 71 lives lost. Annual average losses are around $500M
- **Climate change** will exacerbate extreme events
- **Meteorological and Hydrological services in the region face some critical gaps** in governance, observation networks, forecasting, delivering impact-based messages to communities, capacity and training
- **Long Term Coordination** -Many programs ongoing in the Pacific, especially in relation to climate (e.g. COSSPac, PREP, GCF, RESPAC), but a regional, long-term approach to building NMHS capacity in extreme events is needed.
- **PMC Commissioned a scoping study** to scope a decadal Pacific regional extreme weather, water and ocean response program initiative

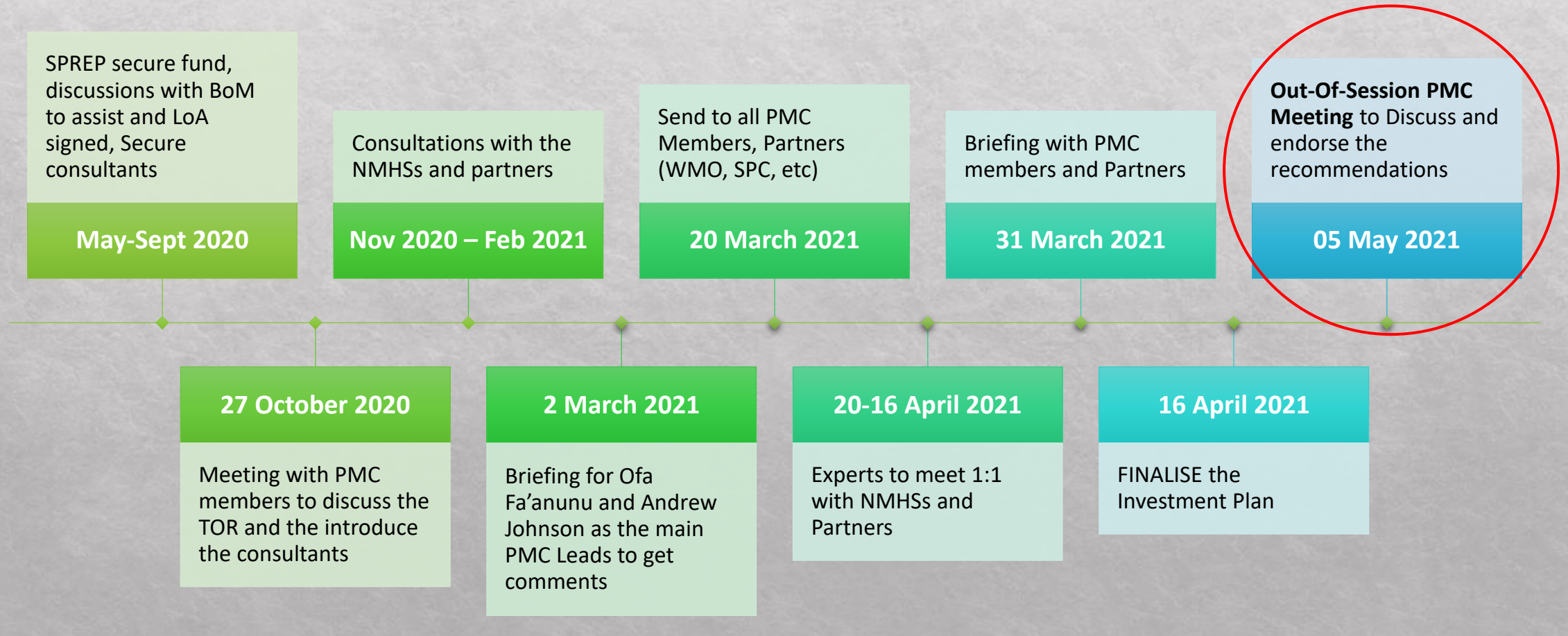
PMC-5 Decision

Building the capacity of Pacific Island States to respond to Extreme, Weather, Water, and Ocean events

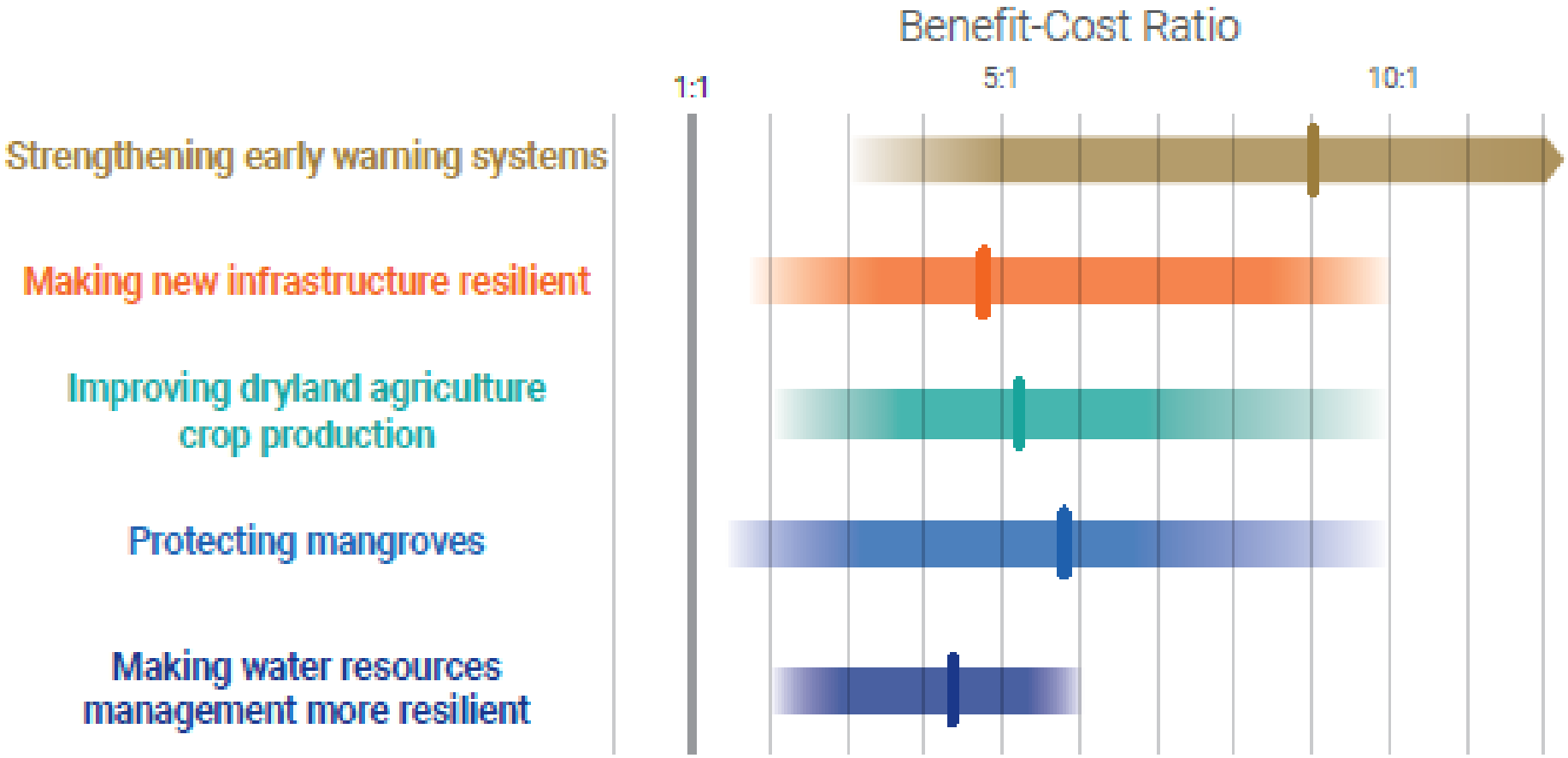
The Meeting:

- **Noted** the i**mportance** of ensuring information to **support preparedness** and response to extreme weather events, water and ocean risks;
- **Noted** the **need for long-term strategic investment** in capability that supports critical gaps in preparedness and response at short time scales;
- **Agreed to commission** through SPREP, in cooperation with members, WMO and other CROP agency partners to undertake a study to scope a decadal Pacific regional extreme weather, water and ocean response program initiative; and
- **Agreed** to use the outcomes of the scoping study to inform deliberations at the next PMC Ministerial Meeting.

Approach and Process



Investing in meteorological, hydrological and ocean services pays off as a climate adaptation strategy



GLOBAL COMMISSION ON ADAPTATION

Decadal Program Impact and Goals

Why

To reduce the human and economic cost of severe weather events across the Pacific – to protect communities and livelihoods and to make a strong positive contribution to the economy of the Region.

How

a) Strengthen institutional governance, leadership and management in NMHSs and regional coordination;

b) Provide enhanced hydro-meteorological, oceans and environmental infrastructure networks and systems

c) Strengthen national and regional severe weather forecasting and community decision support capabilities;

d) Support and strengthen NMHSs coordination with NDMO to deliver impact and response-based messaging;

e) Build the capacity of staff in NMHSs through a diverse approach to training and professional development

What is the value-add of this Investment Plan?

There are many initiatives on climate in the Pacific so what's different about this Plan?

- Has a primary focus on preparing for extreme weather, hydrological and ocean events with links to climate change rather than having a climate change focus with links to weather. Consequently, has a strong focus on strengthening NMHSs

- Has thoroughly examined existing initiatives to ensure proposed investments complement rather than duplicate

- Draws on the strength of global and regional meteorological centres to deliver much enhanced products to Pacific Island countries and territories and draws on latest technological advances in forecast production and delivery

- Takes a whole of region and end to end systems approach to improving preparedness to extreme events rather than country specific or component projects

- Aiming to drive a step-change in NMHSs that is sustainable in the long-term

Scoping project approach

a) Engagement with the NMHSs in SPREP member countries and territories to help identify gaps and needs;

b) Review of previous assessments and reports and ongoing and planned projects to gain insights and avoid duplication and repetition;

c) Provide country and territory profiles detailing mandate, existing capacity, infrastructure, forecasts and warnings production, communication of information, future needs;

d) Develop key areas for investment and provide rationale and sufficiently detailed costings to provide a decadal investment program;

e) Explore pathways to impact, return on investment, risks and pathways to implementation;

f) Feedback from NMHSs, SPREP, WMO, NIWA, NOAA/NWS, MetService and BoM incorporated into revised draft;

g) Development of key messages in a communication piece.

Weather Ready Pacific: 5 Areas for Investment

Summary Investment Priorities Areas

1 Governance and leadership

(a) Establish a Pacific Meteorological Leadership Program
(b) Establish Management and Advisor Team for Program who sit with PMDP and help coordinate across many donor programs and with PMC and its Panels

2 Infrastructure

Investment in observational infrastructure targeted to local needs:
(a) Weather radars (b) Flood gauges (c) Upper air measurement
(d) Ocean observations (e) Equipment long-term maintenance schedule
(f) Investment and upgrade of ICT equipment, bandwidth and data

3 Forecast and warning production

(a) Investment in use of NWP and satellite products in a cascading forecast process
(b) Strengthening RSMCs
(c) Develop Pacific Weather Exchange
(d) Investment in ensuring observations are delivered to GBON

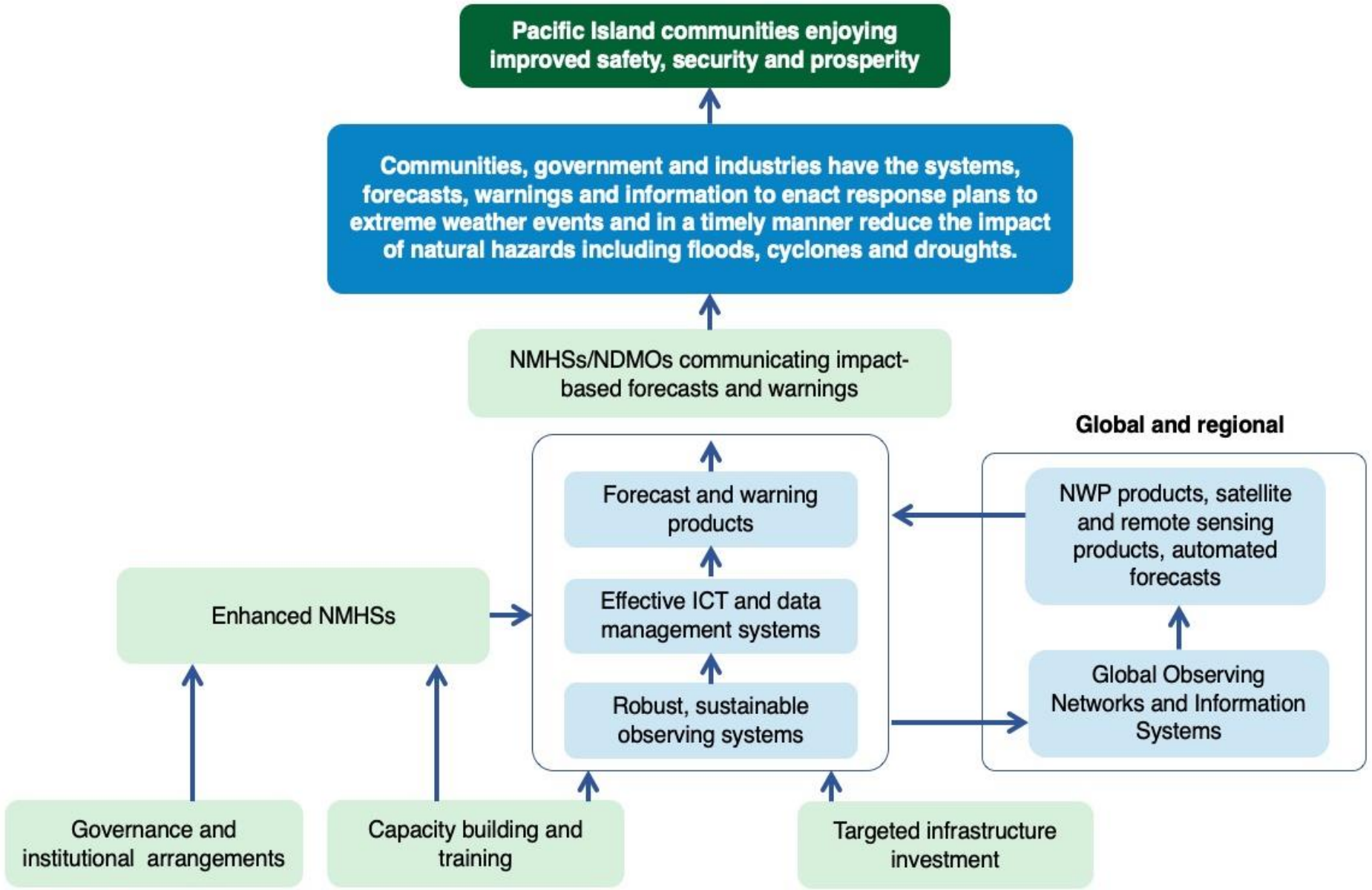
4 Communication and delivery

(a) End-user workshops
(b) Developing and communicating impact-based warnings
(c) Enhanced NMHS/NDMO collaboration

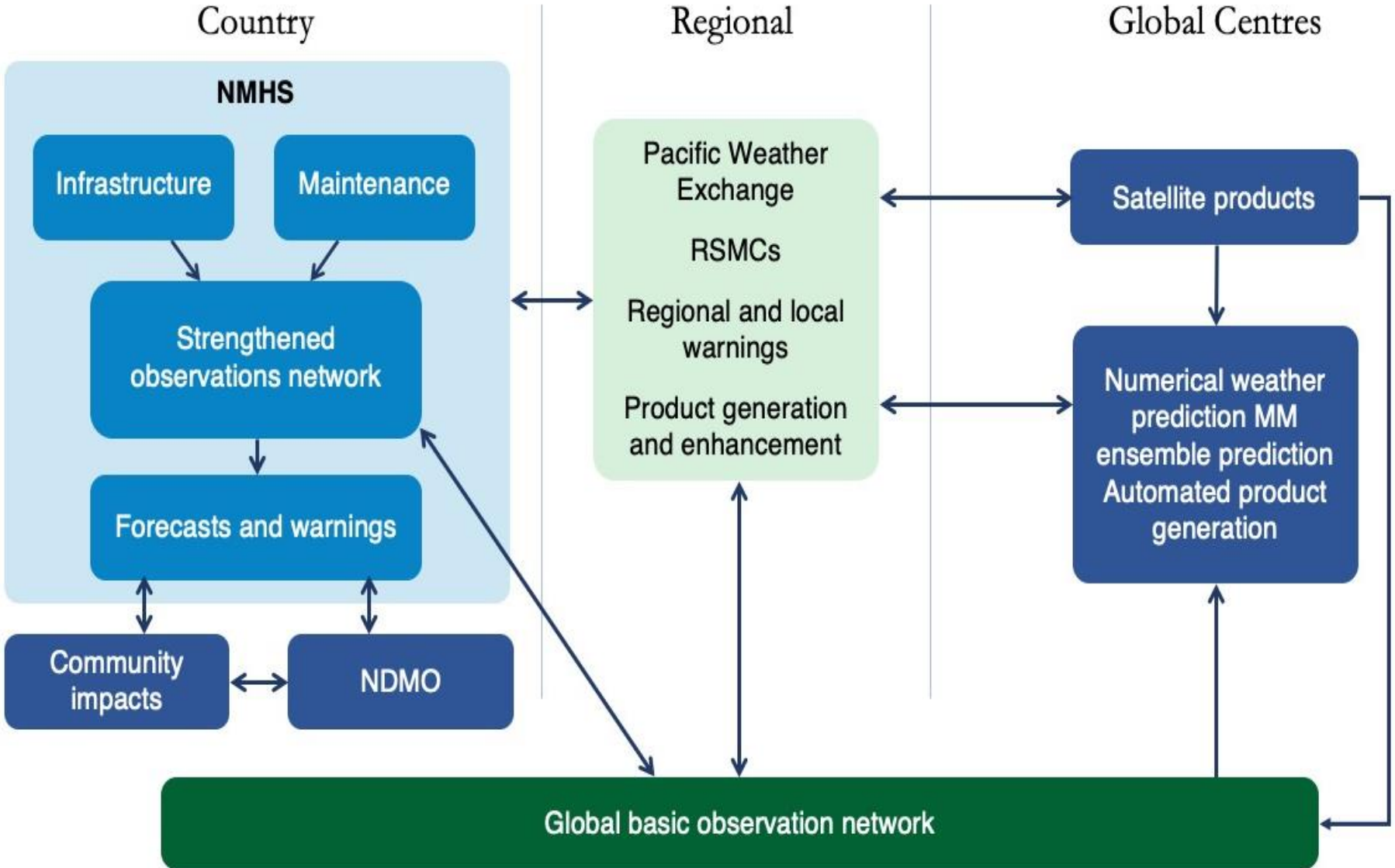
5 Capacity

(a) RTC established for BIP-MT training (b) Establish a hybrid BIP-M training program
(c) Training for hydrologists & hydrographers (d) Professional development workshops
(e) Twinning program to mentor NMHS staff

Impact pathway



New ways of forecast and warning production



WMC

- 7 day products for as many locations as required – graphical and translated text
- Severe weather indices
- Measures of uncertainty/probability

RSMC

- Warnings
- Additional guidance – forecaster discussions
- Adding value – impacts where available
- Aviation and marine forecasting

NMHS

OPPORTUNITY

- Value add with impact statements
- Value add – consultation with NDMO
- Value add – consultation with key industry/community sectors
- Provides resilience – guards against future shocks

Changes to draft based on feedback

- Much strengthened ocean observations, coastal inundation forecasting, training in marine forecasting
- Enhanced use of post-processing for more relevant NWP products
- Complementarity with existing programs made more explicit e.g. COSSPac
- Modified governance arrangements and leadership training

Investment costings (USD millions)

	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Total
Governance	0.96	0.9	1.15	1.26	1.2	0.99	1.61	1.04	1.33	1.27	11.71
Forecasts production	2.99	3.48	3.15	3.67	3.77	3.83	3.86	3.86	3.86	3.91	36.37
Forecasts communication	0.35	0.17	0.18	0.36	0.19	0.21	0.39	0.2	0.21	0.21	2.47
Infrastructure - CAPEX	4.93	7.39	7.39	14.78	14.78						49.27
Infrastructure - OPEX	1.74	3.13	4.12	5.35	5.47	5.59	5.74	5.91	6.04	6.18	49.28
Capacity/training	1.98	1.32	1.37	1.38	1.55	2.14	1.57	1.47	1.71	1.63	16.13
Total	12.94	16.39	17.37	26.80	26.96	12.76	13.17	12.48	13.15	13.20	**165.2**

- Phasing of infrastructure Capex over first five years; Opex also ramps up over first four years
- Governance, leadership, capacity building and training delivered over the whole decade as these are critical to systemic change and mostly self-sustaining NMHSs

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Weather Ready Pacific

Acknowledgement

- Experts Andrew Ash and Alasdair Hainsworth for their tireless effort to put together the investment Plan
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- Technical support from the World Meteorological Organization
- Government of Ireland for providing the initial funding
- Directors and staff of the NMHSs
- All the partners who took time to provide information (SPC, NOAA, NIWA, NZMet, etc)
- Steering Committee that coordinated this activity (SPREP, BOM, WMO and the consultants)

Malo ‘aupito!