NEW ZEALAND
MINISTRY OF FOREIGN AFFAIRS & TRADE
Aid Programme

Activity Design Document (ADD): South-West Pacific Regional Hydrography Programme

Contents

1: Executive Summary

Hydrographic Surveys and their role in the Pacific

Hydrographic services, including accurate and adequate nautical charts, form a corner-stone of maritime safety and are a critical enabler of other maritime activities.

The Pacific Island Countries (PICs) by and large are unable to take hydrographic responsibility for themselves, and so rely on other nations to assist in this work. However due to low prioritisation of this work by both the PICs and other nations, many nautical charts in the South Pacific have not been kept up to date through regular hydrographic surveys. This means that, over time, the data that the charts depict has become increasingly obsolete and this has increased risks to navigation. In addition, many nautical charts for key areas of the Pacific are in paper form and need converting to electronic form in order to meet the contemporary safety and operational needs of shipping in the Pacific.

New Zealand's commitment to maritime safety

New Zealand is committed to working with appropriate regional organisations and national authorities to strengthen maritime safety in the Pacific region. Bilateral and regional project options (totalling approximately NZD6m) have been developed in consultation with maritime stakeholders in the Pacific. These projects were included as *'Forum Announceables'* under a package of initiatives aimed to address maritime safety issues. This Project falls under a wider umbrella of maritime safety projects that will be supported as part of the overall package for maritime safety in the Pacific region. This Project also has strong synergies with New Zealand's aid commitment to supporting tourism in the Pacific, as accurate hydrographic charts underpin the expansion of the cruise ship industry.

South-West Pacific Regional Hydrography Programme

This Project involves resourcing Land Information New Zealand (LINZ) to assist in improving the accuracy and adequacy of charting coverage in the South West Pacific. In parallel, this project includes exploring in the first instance incorporating an initial focus on Vanuatu.

Leveraging from LINZ's expertise in hydrography, this Project seeks to take a collaborative approach by working with other stakeholders with an interest in hydrography (both PICs, other hydrographic authorities and donors). This is a novel approach, as traditionally hydrographic charting coverage has been pursued more on a case-by-case approach, both within a bilateral context and within the country itself.

In summary:

Goal	***Accurate and adequate charting coverage in the South West Pacific***
Outcomes	• Improved navigational and maritime safety in the South West Pacific; and • Expansion of the cruise ship industry in the South West Pacific.
Outputs	• A complete set of **Electronic Navigational Charts** published for Tonga, Samoa, the Cook Islands, Niue and Tokelau • An enduring **Hydrography Risk Assessment Framework** established for South West Pacific maritime infrastructure that comprises: a) A Regional Risk Assessment; b) An Economic Impact Analysis; and c) A Regional Risk Assessment Implementation Plan and funding mechanism agreed by donors/key stakeholders

In parallel, to the development of the Hydrography Risk Assessment Framework, priority will be given to undertaking the risk assessment for Vanuatu via in-country consultation and desktop evaluation.

The rationale for this focus is due to the importance of Vanuatu as a cruise ship destination, and the importance of ensuring that its charts are up to date. This is both in terms of safeguarding the current visits but also securing future expansion plans. From an economic development perspective, undertaking survey work in Vanuatu (and potentially in Tonga and Fiji) has the potential to open up new routes for cruise ships.

Given the Government of Vanuatu's lack of funding to cover the costs of surveys themselves, this provides an opportunity for New Zealand and Australia to potentially look at a joined up approach should it be requested to assist with resourcing. This could occur alongside the development of a wider regional framework.

The specific details of a potential project that funds Vanuatu survey work is out of scope for this ADD. Further scoping will be undertaken in this project to ascertain whether this separate activity would be an effective and efficient activity. If deemed a priority, separate funding approval will be sought and an additional activity developed.

2: Analysis and Strategic Context

Country, region and sector issues

Hydrographic services and the Pacific

Given the Pacific's geography and relative isolation from global markets, the Pacific is heavily reliant on a shipping infrastructure that enables the safe, reliable and cost effective delivery of goods and people. Shipping to and within the Pacific (including cruise ships) is currently very expensive due to the long distances between ports, low trade volumes and poor port facilities often suffering from a lack of maintenance and investment.

The Pacific Island countries by and large are unable to take hydrographic responsibility for themselves, and so rely on other nations to assist in this work. However due to low prioritisation of this work by both the PICs and other nations, many navigational charts in the South Pacific have not been kept up to date through regular hydrographic surveys. The hydrographic data on which some charts are based is incomplete and inadequate and has not been updated for more than 100 years. This means that, over time and with the advent of bigger ships and requirements to visit different routes and ports, the data that the charts depict has become increasingly obsolete and this has increased risks to navigation.

In addition, many charts for key areas of the Pacific are in paper form and need converting to electronic form in order to meet the contemporary safety and operational needs of shipping in the Pacific. In particular, there is a need to achieve adequate Electronic Navigational Chart (ENC) coverage in order to satisfy the Convention on the Safety of Life At Sea (SOLAS) rolling deadline - 2012 to 2018, for the use of Electronic Chart Display & Information System (ECDIS) in certain classes of vessels, particularly passenger vessels, tankers and other larger ships.

Not only has hydrographic data deteriorated with time but the need for data has altered radically. Surveys for charts in pre-1960 were designed for the needs of shipping that no longer ply their trade on the world's sea routes. The merchant shipping of today is larger, deeper drafted and leaner manned than that of even 30 years ago. Today VLCCs of over 500,000 tonnes with a deep draft in excess of 20 metres are common sights at sea. The liner Queen Elizabeth II built in 1969 weighing in at 71,000 tonnes and carrying 3,000 people onboard is today dwarfed by cruise vessels well in excess of 200,000 tonnes and with over 8,500 passengers and crew. It is a matter of fact that neither surveys nor charts of the waters now frequented by these ships have kept pace with developments in modern shipping.

Stakeholder analysis

The technical complexity of the issue of hydrography in the Pacific is illustrated by the large number of stakeholders, both currently involved in this area, or who are not involved but have an interest in close engagement (donors in particular regarding both maritime infrastructure investment and facilitating safe and efficient shipping). Therefore, one of the overriding aims of this work is to establish an enduring Hydrography Risk Assessment Framework that enables all interested stakeholders to engage more strategically in this sector.

The three main objectives will be:

a) to raise awareness in PICs of their international obligations under SOLAS Chapter V Regulation 9 (SOLAS V/9) for hydrographic services and SOLAS Chapter V Regulation 4 (SOLAS V/4) for navigational warnings, as well as how they can access regional hydrographic capability;

b) to raise awareness among donors on how hydrographic services underpin transport and infrastructure investments, and to initiate more strategic discussions around funding; and

c) to provide a prioritised list of survey and charting requirements to assist donors to deliver maximum benefit from aid funding.

A summary of the key stakeholders and their interests are below:

Key donors (including AusAID, ADB, World Bank): There is a strong focus in many of the donor programmes to provide aid funding for infrastructure projects, including in the maritime sector (e.g. ports/wharves/berths). These investments require both surveys to be undertaken in the immediate area of the investment, as well as in the surrounding area (e.g. to ensure there is a safe passage for ships in and out of the ports). Without hydrographic surveys, the infrastructure either cannot be commissioned, i.e. the utility of the investment is compromised.

International Maritime Organization (IMO): has 170 Member States and is the United Nations specialised agency with responsibility for the safety and security of shipping and the prevention of marine pollution by ships. The IMO is responsible for the SOLAS convention, still the most important treaty addressing maritime safety.

International Hydrographic Organization (IHO): currently has 80 Member States and is an intergovernmental consultative and technical organisation that was established to support safety of navigation and the protection of the marine environment.

- The Vision of the IHO is to be the authoritative worldwide hydrographic body which actively engages all coastal and

interested States to advance maritime safety and efficiency and which supports the protection and sustainable use of the marine environment.

- The Mission of the IHO is to create a global environment in which States provide adequate and timely hydrographic data, products and services and ensure their widest possible use.

The 80 Member States of the IHO comprise most of the world's coastal States that have acknowledged their obligations under SOLAS V/9 to ensure that an appropriate hydrographic and nautical charting service is in place.

Land Information New Zealand (LINZ): the New Zealand Hydrographic Authority that is responsible for the provision of hydrographic services for New Zealand waters. This includes hydrographic surveys, the production and maintenance of official charts / publications. The New Zealand charting coverage extends into the South West Pacific (namely: Tonga, Samoa, the Cook Islands, Tokelau and Niue).

Australian Hydrographic Service (AHS): the AHS is the Commonwealth Government agency responsible for the publication and distribution of nautical charts and other information required for the safety of ships navigating in Australian waters. The AHS is part of the Royal Australian Navy. The Australian charting coverage extends into the South West Pacific (namely: Papua New Guinea).

United Kingdom Hydrographic Office (UKHO): the UKHO is part of the UK Ministry of Defence and provides hydrographic services for waters of UK national responsibility. UKHO charts and publications cover the South West Pacific as part of a global range of electronic and paper nautical charts, publications and services for the international mariner (namely: Fiji, Kiribati, Nauru, Tuvalu, Vanuatu and the Solomon Islands).

South West Pacific Hydrographic Commission (SWPHC): is the Regional Hydrographic Commission (RHC) in the South West Pacific established to fulfil the aims and objectives of the IHO and in particular to coordinate hydrographic activity and cooperation at the regional level. States are normally represented in the Commission by the head of the national hydrographic authority or organisation. The SWPHC IHO members are; New Zealand, Australia, United Kingdom, France, Unites States of America, Tonga, Papua New Guinea and Fiji.

Applied Geoscience and Technology (SOPAC) Division of the Secretariat for the Pacific Community (SPC) /: SPC is an international organisation that provides technical and policy advice and assistance, training and research services to its Pacific Island members. The SOPAC division functions include seabed surveying,

work in the areas of water and sanitation, disaster management, seabed resources, maritime boundary delimitation and monitoring of ocean processes. It should be noted that SOPAC relies on other organisations for specific hydrographic expertise and personnel.

Geoscience Australia: is an Australian Government Agency that deals with geospatial information which includes extensive bathymetry data holdings covering areas of the South West Pacific.

Problem analysis

1. Economic benefits of hydrographic services

Hydrographic services, including accurate and adequate navigational charts, form a corner-stone of maritime safety and are a critical enabler of other maritime activities. Given that hydrographic services fall under the public good bracket, (i.e. providing benefits to the nation as a whole, rather than the benefits accruing to one particular stakeholder group) this means that cooperation between players is required to ensure the benefits are noted and funding prioritised accordingly.

The economic, social and environmental benefits of hydrographic services are multi-faceted and include positive impacts for coastal zone management, hazard response, national defence and maritime boundary delineation. More specifically, the direct benefits to facilitating economic growth are threefold:

a) **Facilitating the improvement of ports and maritime infrastructure:** New investments in port facilities (including piers, wharves, marinas and berths) as well as maintaining existing facilities are essential for meeting the demands and requirements of ships, and reducing the risk of accidents and groundings. Although cruise ships do currently enter and berth at some Ports where the surveys are out of date, this is at the higher risk of incidents.

b) **Streamlining commercial maritime operations:** Commercial shipping relies on accurate navigational charts. Accurate modern charts allow for the planning of the most direct routes between ports, reduces fuel consumption and carbon footprint, reduces the number of pilots required, and allows deeper draft vessel to be used. These factors in turn reduce the costs of commercial shipping operators and encourage more commercial operators to enter the market. Of particular interest and relevance for the Pacific is the potential of the expansion of the cruise ship industry in the Pacific.

c) **Enabling the safe passage of navigation.** As most marine accidents are the result of human error, the introduction of

ECDIS can significantly reduce the margin for human error, thus reducing the likelihood of accidents. There are also important spillovers to consider: Currently, new cruise ships entering the Vanuatu market are piggy-backing off the Carnival cruise ship itinerary and routes for entry, and there is some concern that without new surveys and charting, these cruise ships are exposing themselves to heightened risk. Any accident involving a cruise ship would have a significant detrimental impact on the whole cruise ship industry.

Lessons learned

There have been some studies undertaken on the economic and social benefits of hydrographic work. The studies which have been undertaken highlight the considerable conceptual and practical challenges, as many of the benefits cannot be readily quantified. A Royal Australian Navy's hydrographic office analysis in 1992 stated that *'What is beyond reasonable doubt is that the existence of official up-to-date charts has a benefit to the national economy that greatly exceeds the cost of the hydrographic programme'.*

The IHO in its publication M-2 – The Need for Hydrographic Services, states that *several studies by IHO Member States indicate that the cost to benefit ratio is at least 1:10 for major nation with a significant dependence on maritime trade or interests*. The UK Maritime and Coastguard Agency (UKMCA) put the ratio at 1:14.

The difficulty with quantifying and also conveying the wider benefits of hydrographic work has contributed to this work not being a priority for either PICs or for donors. The exponential effects of this have resulted in a potential legacy of inaccurate and outdated charts.

It will be important therefore that the Economic Impact Analysis continues to communicate and advocate for the importance of this work in underpinning maritime safety, but also articulating the linkages with economic development.

There are also significant adverse costs to a nation due to lack of hydrographic services which would include; loss of life, vessel grounding, environmental pollution, loss of marine habitat and underdeveloped maritime infrastructure resulting in reduced maritime trade.

Consistency with existing New Zealand and other donor/ multilateral programmes and policy/strategy

Following a number of serious maritime accidents in 2009, Forum Leaders in the 2009 Pacific Islands Forum Communiqué welcomed the offer of Australia and New Zealand to work with appropriate regional

organisations and national authorities to strengthen maritime safety in the Pacific region. In response, a maritime safety development adviser for the Pacific was employed at Maritime NZ to provide technical advice to Pacific maritime administrations and to develop projects to improve maritime safety in the Pacific.

Bilateral and regional project options (totalling approximately $6m) have been developed in consultation with maritime stakeholders in the Pacific. Two of the short-listed projects involved a) developing accurate navigational charts for the Pacific, via the expertise of Land Information New Zealand (LINZ) and b) converting paper charts to electronic charts. These projects were included as 'Forum Announceables' under a package of initiatives aimed to address maritime safety issues.

In parallel, MFAT has been working with Carnival Australia (the largest cruise ship operator in the Pacific) to develop a public-private partnership that aims to foster linkages between the cruise ship industry and local economic development opportunities. Carnival has identified the need for improved maritime safety information, and that the major barrier to Vanuatu, Tonga and Fiji is due to the lack of accurate and adequate charting. Given LINZ's capability and expertise in this area, it is both efficient and provides for development synergies for LINZ's involvement in the two early start projects to also include this additional component.

Rationale for New Zealand involvement

a) New Zealand Leadership in regional hydrographic work

LINZ produces official nautical charts for the safe navigation by shipping operators in New Zealand, and in the South West Pacific where it has traditionally provided charting coverage.

LINZ support's New Zealand's role in the South West Pacific through its work in naming, surveying and providing maps, charts and other geodetic information. In turn, LINZ cooperates with other IHO member nations in the SWPHC in providing these services throughout the wider Pacific.

Notwithstanding LINZ's role in the Pacific, this Programme takes a truly collaborative approach with other countries with an interest and a role in hydrography in the Pacific. In this context, New Zealand can play a leadership role in working with others to take a more strategic approach to the issue.

b) New Zealand Aid Programme's focus on maritime safety

New Zealand is committed to working with appropriate regional organisations and national authorities to strengthen maritime safety

in the Pacific region. This work will contribute to improving maritime safety by reducing the likelihood of charting-related accidents and groundings.

c) New Zealand Aid Programme's focus on Sustainable Economic Development

The New Zealand Aid Programme now has a core focus on sustainable economic development in the Pacific. Tourism, including the development of the cruise ship industry, is identified as being a key driver of economic development, and within the Pacific region, where the region has a competitive advantage over much of the rest of the world. Moreover, New Zealand along with Australia constitute the two largest single source markets for Pacific bound tourists, and thus the safety of maritime tourism operations is an important component of New Zealand's economic, business and cultural ties with the region.

Tourism has been identified as a priority sector by many of the PICs, hence tourism's inclusion as a priority sector for bilateral assistance in a number of the Joint Commitment's for Development (including Samoa, Tonga, the Cook Islands, Niue and Vanuatu). Accordingly, New Zealand is either implementing (Tonga, Niue) or looking to scale up tourism specific activities in these countries (Samoa, Vanuatu).

This work will complement these existing tourism initiatives by supporting the expansion and subsequent role of cruise ship industry in the Pacific. Specifically, there are opportunities of fast tracking support for survey work in Vanuatu, and potentially Tonga and Fiji, to secure possible cruise ship expansion.

3: Activity Description

Results diagram

Goal	***Accurate and adequate charting coverage in the South West Pacific***
Outcomes	• Improved navigational and maritime safety in the South West Pacific; and • Expansion of the cruise ship industry in the South-West Pacific.
Outputs	• A complete set of **Electronic Navigational Charts** published for Tonga, Samoa, the Cook Islands, Niue and Tokelau • An enduring **Hydrography Risk Assessment Framework** established for Pacific maritime infrastructure that comprises of: a) A Regional Risk Assessment; b) An Economic Impact Analysis and c) A Regional Risk Assessment Implementation Plan and funding mechanism agreed by donors/key stakeholders

In parallel to the development of the Hydrography Risk Assessment Framework, priority will be given to undertaking the risk assessment for Vanuatu via in-country consultation and desktop evaluation.

The specific details of a potential project that funds Vanuatu survey work is out of scope for this ADD. Further scoping will be undertaken in this project to ascertain whether this separate activity would be an effective and efficient activity. If deemed a priority, separate funding approval will be sought and an additional activity developed.

Activity and inputs

An important component of the Regional Risk Assessment Framework will be the **economic impact analysis** which will be used in conjunction with the risk assessment framework to develop the implementation plan.

It is important to note that although the EIA will form part of the overall risk assessment, the EIA will be contracted and managed by MFAT. The final EIA will then be used and applied by LINZ when developing the final Hydrography Risk Assessment.

This **economic impact analysis** will determine whether undertaking the hydrographic surveys in a particular area is a sound investment, and how this compares with alternative projects. This analysis would also consider the wider economic impacts, including the multiplier effects. For example, it also looks at the impacts of an activity shifting location as a result of the investment in undertaking hydrographic survey work, such as the expansion of the cruise ship industry.

The economic opportunities in this analysis to be assessed include:

- a regional stocktake looking at the number of ports and off-shore terminals in an area;
- quantifying the amount, type and value of trade, (exports and imports as well as petroleum, impact on local business and the economic growth impact on the community);
- quantifying the number and economic impact from cruise ships; and
- quantifying the number and economic impact from domestic passenger ships.

The economic costs should include:

- the opportunity cost should the hydrographic surveys not be undertaken (e.g. the cruise ship industry may not expand, or decide to exit a region);
- the environmental impact and cost should an accident occur; and
- the opportunity cost should maritime infrastructure not be invested in.

For further information on the specific activities, refer to the Inputs/Outputs table.

Form(s) of aid proposed

The activity will be delivered via a Memorandum of Understanding between LINZ and MFAT. The MoU will be for a 2-year period.

Estimated programme budget and timing

Refer to Appendix C: the detailed budget.

4: Implementation Arrangements

LINZ will contract key personnel for this activity.

Refer to Appendix E for the Terms of Reference for these positions.

These two positions are:

- Pacific Hydrography Risk Assessor (PHRA); and
- Electronic Navigational Chart Data Analyst(s) (ENC-DA) for the production of the ENCs).

Management and governance arrangements and structure

The MoU will be overseen by a Steering Committee comprising of:

- 2 members from MFAT (including the Chair)
- 2 members of LINZ and
- 1 or 2 members of Maritime New Zealand (one member being the Pacific Maritime Safety Advisor - PMSA).

The specific arrangements for this Steering Committee are still to be worked through by MFAT and LINZ. The final arrangements will be agreed in the Memorandum of Understanding between MFAT and LINZ.

The Pacific Hydrography Risk Assessor (PHRA) will also lead establishing an informal Pacific-wide stakeholder group comprising of hydrographic authorities, key regional organisations and other donors.

Implementation plan

The Regional Risk Assessment will be developed and implemented by the PHRA (refer to the Terms of Reference in Appendix E for the following key personnel).

It is anticipated that the PHRA will develop a longer-term Implementation Plan for the Regional Risk Assessment. This is expanded under 'Sustainability issues'.

Results measurement & monitoring and evaluation

Refer to the Appendix A: Results Measurement Table.

Sustainability issues

An important aspect of the Regional Risk Assessment Framework will be the development of an implementation plan that considers how the Framework will be utilised and maintained in the future by PICs and donors.

Central to this Implementation Plan will be the consideration of financial sustainability in terms of recognising that as hydrography is a public good – the costs should not fall on only one stakeholder. Therefore, the Implementation Plan will be developed to take a cost sharing approach to the implementation of the Framework, including leveraging from donors/hydrographic authorities and ensuring there is a contribution from PICs.

This implementation plan may recommend small seed funding to ensure this Risk Assessment is kept up to date and relevant for all stakeholders, including potentially developing a dynamic GIS database. This could potentially be funded by the IHO and/or IMO.

Procurement arrangements

LINZ is responsible for all contractual and procurement arrangements, including the recruitment of the personnel for this project.

LINZ will ensure that the recruitment and selection process is fair and transparent, and that the salary package is commensurate with market rates. All decisions relating to remuneration will be subject to MFAT approval.

LINZ have an established organisation recruitment framework, details of the process map and new position establishment are in Appendix F & G.

Overarching policy issues including gender, human rights and environment

The Regional Risk Assessment will consider and explicitly address the cross cutting issues of environment, gender and human rights in its methodology. This methodology will be subject to the approval of MFAT (as a first milestone in the Reporting and Payment schedule) to ensure that these issues are adequately considered and addressed.

However, it is not envisaged that there any adverse environmental, gender or human rights impacts associated with undertaking these two pieces of work. It is considered that the impacts on both gender, human rights and the environment will overall be positive.

a) Gender

Inaccurate navigational charts increase the risk of charting-related maritime accidents, and it is widely acknowledged that women and children are the most vulnerable in any maritime accidents at sea.

Women and children regularly travel as passengers on ferry services which are one of the principal (and in some cases only), means of transport between PICs. Many ferry routes have not been surveyed to modern standards where charting is inaccurate, inadequate or non-existent.

Securing the expansion of the cruise ship industry and the accompanying increased tourist traffic in the Pacific can bring economic benefits to women as entrepreneurs, workers, producers and suppliers. These opportunities include job creation and employment in the tourism sector, including management, handicraft development for tourists, and other women/family business providing services e.g. accommodation, restaurants, guiding, transport.

b) Environment

Inaccurate navigational charts increase the risk of maritime accidents that can have an environmental impact from oil spills and the release of dangerous goods into the marine environment. These possible environmental impacts may be further exacerbated due to a lack of capacity in the Pacific in marine pollution response.

The expansion of the cruise ship industry can increase the likelihood of negative environmental impacts relating to the conservation and preservation of pristine areas and biodiversity and the ecological impact of increased tourist traffic in small communities. However, commitment by both the cruise ship industry and the local communities in implementing conversation management plans and embracing environmental stewardship can mitigate these impacts. The Economic Impact Analysis will assist in quantifying whether the increased economic opportunities outweighs the small risk of negative environmental externalities.

High quality bathymetry and metadata acquired from hydrographic surveys should ideally be made available under the mantra of *'collect once and use many times'* as part of a marine Spatial Data Infrastructure. Marine science depends largely on bathymetric information and governments recognise that good quality and well managed data is an essential ingredient to economic and commercial development and protection of the environment.

Critical risks and risk management strategies

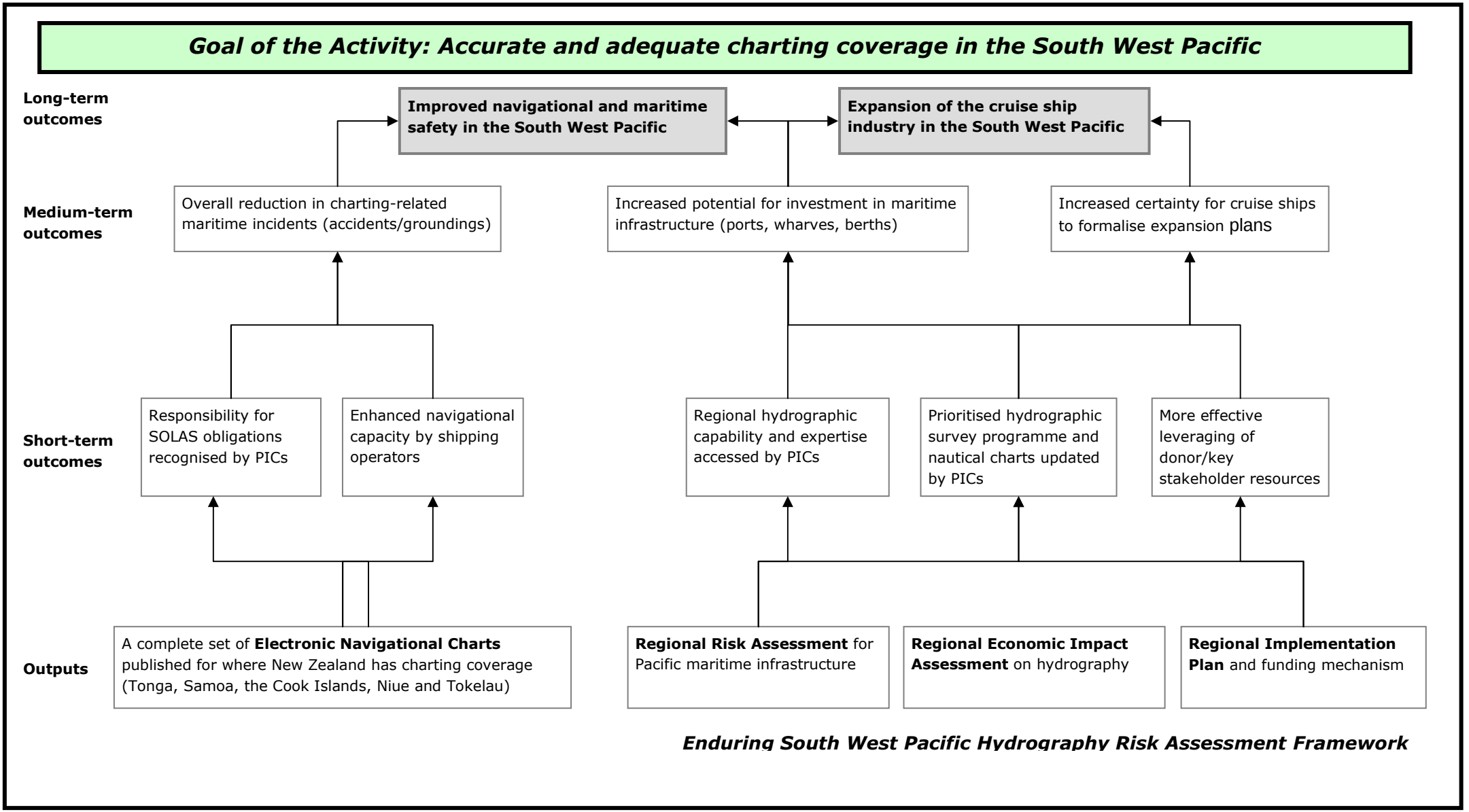
Refer to Appendix B: the Risk Register.

8 Appendices

This section includes the following appendices:

- Appendix A: Results Framework (Results Diagram, Results Measurement Table, Monitoring and Evaluation Workplan)
- Appendix B: Risk Register & Matrix
- Appendix C: Detailed Outputs-Based Budget / Cost Estimates
- Appendix D: Detailed Description of Programme activities – Economic Impact Analysis
- Appendix E: Programme Management & Implementation Arrangements – Organization Chart and other details as appropriate including Roles / Responsibilities of Parties/Stakeholders
- Appendix F: LINZ Recruitment Process Map
- Appendix G: LINZ New Position Establishment Application Form
- Appendix H: Glossary

Appendix A: Results Framework



Outputs/Inputs Table

Outputs from the Results Diagram	Activities to Delivery Outputs	Inputs to Resource Activities
Output 1		
A complete set of **Electronic Navigational Charts** published for Tonga, Samoa, Tokelau, Niue and the Cook Islands	**Year 1:** Publish a minimum of 25 Electronic Navigational Charts for the South West Pacific region where New Zealand provides charting coverage **Year 2:** All Electronic Navigational Charts published for the South West Pacific region where New Zealand has charting coverage	LINZ will recruit ENC Data Analyst(s) (ENC_DA) via the MFAT/LINZ MoU LINZ will provide staff time and management for additional input and expertise
Output 2		
A **Regional Hydrography Risk Assessment**	**Year 1:** Scope and publish the hydrography risk assessment methodology **Year 1:** Undertake the risk assessment for Vanuatu via in-country consultation and desktop evaluation **Year 1:** Publish the prioritised hydrographic survey plan and national chart scheme for Vanuatu **Year 1/2:** Undertake risk assessments for each PIC via in-country consultation and desktop evaluation **Year 2:** Publish the final South West Pacific-wide Hydrography Risk Assessment Framework	LINZ will recruit a 2-year Pacific Hydrography Risk Assessor (PHRA) via the MFAT/LINZ MoU LINZ will provide staff time Technical Economic Advisor: Up to XX days will be spent developing the economic impact analysis methodology. This will be contracted by LINZ and funded via the MFAT/LINZ MoU
Output 3		
A Regional Economic Impact Analysis	**Year 1:** Scope the economic impact analysis methodology **Year 1:** Finalise with key stakeholders (including donors) methodology and strategic approach for regional risk assessment **Year 2:** Publish the final South West Pacific-wide Hydrography Economic Impact Analysis	MFAT will contract a Transport Economic to undertake the EIA. MFAT will provide staff time to lead donor dialogue LINZ will provide staff time to liaise with hydrographic authorities

Outputs from the Results Diagram	Activities to Delivery Outputs	Inputs to Resource Activities
Output 4		
Regional Implementation Plan and funding mechanism agreed by donors/key stakeholders	**Year 1:** Agree on a donor funding plan for Vanuatu **Year 2:** Develop a Regional Risk Assessment Implementation Plan to outline key implementation requirements with clear priorities and timelines which includes the use of GIS **Year 2:** Agree on a strategic donor funding plan	MFAT will provide staff time to lead donor dialogue LINZ will provide staff time to liaise with hydrographic authorities

Results Measurement Table

Results	Indicator(s)	Baseline Information and Targets	Methodology/Data Sources
Long-Term Outcomes			
Improved navigational and maritime safety in the Pacific	• To be developed/confirmed, but should incorporate IMO Audit results & stats, IHO Technical Visit reports and SPC stats	To be developed/confirmed IMO Audit results IHO Technical Visits	SPC IMO IHO MNZ - Pacific Shipping Safety Advisor Shipping Registers Protection & Indemnity Clubs (P&I)
Expansion of the cruise ship industry in the Pacific	• Number of total cruise ship visits and new operators to the South West Pacific	To be developed/confirmed Cruise Industry to supply current stats and forecast	LINZ *(methodology for ascertaining this information to be gathered during the methodology scoping)*
Medium Term Outcomes			
Reduction in charting-related accidents	• Number of reported groundings, accidents and other incidents	To be developed/confirmed	SPC IMO MNZ - Pacific Shipping Safety Advisor Shipping Registers Protection & Indemnity Clubs (P&I)
Increased investment in maritime infrastructure	• Quantum of new maritime infrastructure investment	To be developed/confirmed	SPC Pacific Regional Infrastructure Facility

Results	Indicator(s)	Baseline Information and Targets	Methodology/Data Sources
Increased certainty for cruise ships to formalise expansion	• Number of new Pacific Island cruise ship destinations planned and operators to the region	To be developed/confirmed Tourism statistics	LINZ *(methodology for ascertaining this information to be gathered during the methodology scoping)*
Short-Term Outcomes			
Responsibility for SOLAS requirements recognised by PICs	• Number of PICs that recognise SOLAS requirements and form appropriate action plans.	To be developed/confirmed IMO Audit report IHO Technical visit report	IMO IHO
Enhanced navigational capacity by shipping operators	• Number of shipping operators that utilise Electronic Chart Display & Information Systems (ECDIS)	To be developed/confirmed IMO RENC Services	LINZ *(methodology for ascertaining this information to be gathered during the methodology scoping)*
Regional hydrographic capability accessed by PICs	• Number of PICs with a formal mechanism / agreement in place with hydrographic authorities to support them in the provision of hydrographic services	IMO Audit report IHO Technical visit report	IHO SWPHC
Prioritised nautical charts updated by PICs	• Number of accurate and adequate official nautical charts	National chart scheme reviewed and XX charts have been updated in the South West Pacific in the past XX years.	IHO SWPHC IHO Publication C-55 - Status of Hydrographic Surveying & Nautical Charting Worldwide

Results	Indicator(s)	Baseline Information and Targets	Methodology/Data Sources
More effective leveraging of donor resources	• Quantum of joint donor funding spent on hydrographic survey work	None	Pacific Regional Infrastructure Facility
Outputs			
A complete set of **Electronic Navigational Charts** published for Tonga, Samoa, Tokelau, Niue and the Cook Islands	• Number of Electronic Navigational Charts published and available to the mariner worldwide through the established global chart distribution services.	There are currently 0 Electronic Navigational Charts published. Target is 61	LINZ AusRENC
A **Regional Hydrography Risk Assessment**	• Publication and dissemination of final Regional Risk Assessment	There is currently no Regional Risk Assessment Framework	LINZ
A Regional Economic Impact Analysis	• Publication and dissemination of final Regional Economic Impact Analysis	There is currently no Regional Economic Impact Analysis	MFAT
A **Regional Risk Assessment Implementation Plan** and funding mechanism agreed by donors/key stakeholders	• Agreed pipeline activities to be undertaken • Established 'owner' of the Regional Risk Assessment Framework and supporting technical requirements	There is currently no Regional Risk Assessment Implementation Plan	LINZ

Monitoring and Evaluation Workplan

Monitoring & Evaluation Tasks	Approach	Timeline	Roles and responsibilities	Deliverables and Reporting	Indicative Costs
Monitoring					
ENC production	Establish production schedule and reporting framework	January 2012 – December 2013	Lead: LINZ ENC Production Manager Support: LINZ Manager Hydrography	ENC Production schedule & workflow forms Fortnightly ENC Production meetings	LINZ staff time
Evaluation					
Year one evaluation	Present results	Dec 2012	Lead: LINZ ENC Production Manager Support: LINZ Manager Hydrography Independent validation - AusRENC	25 ENCs published LINZ NtM AusRENC P007 validation report	LINZ staff time
Year two evaluation	Present results	Dec 2013	Lead: LINZ ENC Production Manager Support: LINZ Manager Hydrography Independent validation – AusRENC	61 ENCs published LINZ NtM AusRENC P007 validation report	LINZ staff time
Monitoring					

Monitoring & Evaluation Tasks	Approach	Timeline	Roles and responsibilities	Deliverables and Reporting	Indicative Costs
South West Pacific Hydrography Risk Assessment	Establish project governance and reporting framework	January 2012 – December 2013	Lead: Steering Committee Support: National Hydrographer	Verbal and written reports Quarterly project progress reporting Monthly project reporting Agree sign-off on MOU milestones	Steering Committee LINZ staff time
Evaluation					
Monthly evaluation	Present results	Monthly	Lead: National Hydrographer	Project timeline, progress and operational planning Verbal report	LINZ staff time
Quarterly evaluation	Present results	Quarterly	Lead: Steering Committee Support: National Hydrographer	Present current activities, progress, financials – actual/ budget, risk register and issues Present risk assessments for each PIC via in-country consultation and desktop evaluation Verbal and written report	Steering Committee LINZ staff time
6 month milestone	Present results	June 2012	Lead: Steering Committee Support: National Hydrographer & Informal Pacific wide stakeholder group	Present methodology and strategic approach for regional risk assessment Present methodology and approach for the economic impact analysis Verbal and written report	Steering Committee LINZ staff time

Monitoring & Evaluation Tasks	Approach	Timeline	Roles and responsibilities	Deliverables and Reporting	Indicative Costs
Year one evaluation	Present results	Dec 2012	Lead: Steering Committee Support: National Hydrographer & Informal Pacific wide stakeholder group	Present prioritised hydrographic survey plan and national chart scheme for Vanuatu Present the scoping of the economic impact assessment Present approach for implementation plan Verbal and written report	Steering Committee LINZ staff time
18 month evaluation	Present results	June 2013	Lead: Steering Committee Support: National Hydrographer & Informal Pacific wide stakeholder group	Present progress on Risk assessment, economic impact assessment analysis and implementation plan.	Steering Committee LINZ staff time
Year two evaluation	Present results	Dec 2013	Lead: Steering Committee Support: National Hydrographer & Informal Pacific wide stakeholder group	Present the regional risk assessment Present the regional implementation plan Verbal and written report	Steering Committee LINZ staff time
				TOTAL INDICATIVE COSTS	**N/A (in-kind)**
Overall Monitoring and Evaluation Budget					
				Funding source	$
				Funding source	$
				TOTAL BUDGETED	**$**

Appendix B: Risk Register & Matrix

This section summarises the key risks facing the project. It is a snapshot of significant risks which may impact on the successful delivery of the project, providing assurance that risk management is being used as part of the project planning by:

- describing the risk
- providing an assessment of the level of risk (likelihood and consequence)
- detailing the mitigating controls and treatment actions.

These activities will be recorded in the project risk register, which informs this section. The risk register is the record of ongoing risk management activities.

As the project moves into the design and scoping phase more detailed project risk assessment and treatment activities will be completed.

Note:

- *The LINZ Risk Policy and Risk Management Framework describes the process to be followed to appropriately manage risks within LINZ. Refer to the Risk Management Framework for further information.*
- *The Strategy and Planning team can provide assistance and facilitation in any area of the risk management process.*

Category *Definitions detailed below*	**Risk and Consequence** *Describe the risk and the most probable associated consequences.*	**Level of Risk** *Measure using the Consequence and Likelihood Evaluation Matrix.*	**Treatments** *What are the planned treatments?*	**Responsibility**
Organisational	Delay in recruiting PHRA / ENC-DA resulting in delays in commencing Risk Assessment and ENC production	Possible / Moderate **Yellow (Medium Risk)**	Start recruitment early, identify potential candidates, broaden recruitment base/options	LINZ
Organisational	Inappropriate risk assessment methodology resulting in low quality risk assessment, poor decisions and ineffective implementation plans	Possible / High **Orange (High Risk)**	Invite early consultation with key stakeholders and informal Pacific wide stakeholder group to achieve best practice 6 month Steering Group Milestone to identify gaps and discuss options to mitigate risk and/or seek alternatives	LINZ, PHRA

Financial	Insufficient funding for scoping of Economic impact analysis resulting in an incomplete Risk Assessment Framework	Possible / Moderate **Yellow (Medium Risk)**	Obtain quotes and monitor progress on scoping of Economic Impact Assessment Establish clear requirements early Request additional funding	Steering Group
Financial	Insufficient funding for RHRA to complete work resulting in incomplete risk assessment	Possible / High **Orange (High Risk)**	Early work planning Monitor actual / budget and forecasts Request additional funding	Steering Group
External	Unable to visit all PICs resulting in some PICs not included in Risk Assessment or Implementation plan	Possible / High **Orange (High Risk)**	Early work planning Prepare comprehensive travel plan early to PICs inc. dates, itinerary and bookings	PHRA
External	Key stakeholders and government officials unavailable during PHRA visit to PICs resulting in low quality risk assessment	Possible / High **Orange (High Risk)**	Notify visits with rationale to PICs early through posts. Raise awareness to ensure availability of key stakeholders and government officials	MFAT, PHRA
Organisational	PICs have heightened expectations of aid funding resulting in unrealistic expectations on donor funding	Likely / Moderate **Yellow (Medium Risk)**	Communicate clear funding expectations to PICs through posts and during visits verbally and in writing.	MFAT, PHRA
Organisational	PHRA does not complete work resulting in incomplete risk assessment	Unlikely / Extreme **Yellow (Medium Risk)**	Mitigate through recruitment and selection process for PHRA and close monitoring of progress Impact analysis on delay to risk assessment	MFAT, LINZ
External	Inappropriate *result indicators* resulting in misleading *outcomes indicators*	Possible / Moderate **Yellow (Medium Risk)**	Review results indicators with informal Pacific wide stakeholder group at start up.	PHRA, LINZ, SWPHC, MNZ-PMSA
External	Stakeholder focus on a particular PIC resulting in emphasis on that PIC resulting in an unbalanced regional view	Possible / Moderate **Yellow (Medium Risk)**	Closely monitor stakeholder focus Set early expectations and communicate clearly to all stakeholders	PHRA, LINZ, MFAT, MNZ-PMSA
External	Results indicators unavailable resulting in an inability to effectively measure outcomes	Possible / Moderate **Yellow (Medium Risk)**	Working with PICs, MFAT posts, IMO, IHO & Maritime NZ (PMSA) to secure agreement to release documentation	LINZ, MFAT, MNZ, PHRA

External	Natural disaster during the course of the risk assessment	Rare / High **Orange (High Risk)**	Steering Committee request for extension of funding and project timeline	Steering Committee
External	PIC unwilling to collaborate or become involved in the risk assessment process	Unlikely / Moderate **Yellow (Medium Risk)**	Notify visits with rationale to PICs early through posts. Raise awareness to ensure availability of key stakeholders and government officials	PHRA, LINZ, MFAT, SWPHC, MNZ-PMSA
External	Prioritised hydrography programme (surveys and charting) is not implemented resulting in outcomes not being met	Possible / High **Orange (High Risk)**	Working with PICs, MFAT, IMO, IHO, Maritime NZ (PMSA) and Key donors to secure funding and implement hydrography programme	PHRA, LINZ, MFAT, SWPHC, MNZ-PMSA, Key donors
External	IMO audit reports unavailable resulting in an inability to effectively measure outcomes	Likely / Moderate **Orange (High Risk)**	Working with PICs, MFAT posts, IMO, IHO & Maritime NZ (PMSA) to secure agreement to release documentation	MFAT, MNZ

Key to Risk Register

1.Risk Categories

Identify possible risks using the following categories as a prompt. Risk categories include:

- **External**
  e.g. Economic, Political, Natural Event, Security,
- **Organisational**
  e.g. Personnel, Capacity, Policies,
- **Financial**
  e.g. financial management weaknesses, corruption, fraud, cost/exchange rate escalation, lack of funding

2. Risk Description and Consequences (Impacts)

Describe the risk and the most probable consequence (impact)

3. Risk Matrix

Identify the level of likelihood of the risk occurring and the consequence if the risk occurs. Then use the likelihood and consequences ratings to determine the level of risk from the matrix

LINZ Project Combined Likelihood, Consequence and Matrix (Abridged Version)

Likelihood						
	5. Almost certain: Expected to occur in most circumstances	**Medium**	**High**	**High**	**Extreme**	**Extreme**
	4. Likely: Will probably occur in most circumstances	**Medium**	**Medium**	**High**	**High**	**Extreme**
	3. Possible: Could occur at some stage - 50/50 that it might occur	**Low**	**Medium**	**Medium**	**High**	**Extreme**
	2. Unlikely: May occur in exceptional circumstances,.	**Low**	**Low**	**Medium**	**Medium**	**High**
	1. Rare: Will only occur in exceptional circumstances.	**Low**	**Low**	**Medium**	**Medium**	**High**
	Consequences	**1. Negligible** • <2.5% of budget • <5% project delay & can make it up • Few quality and system issues • Little stakeholder interest, few complaints to project team	**2. Low** • >2.5%<12.5% of budget • <5% project delay & can't make it up • Minor quality & /or system concerns - meets design criteria most of the time • Minor reputational consequences	**3. Moderate** • >12.5%<25% of budget • >5%-<10% project delay & maybe make it up • Moderate quality and/or system compromises • Some political and reputational consequences • Stakeholder complaints to lead agency • Significant stakeholder interest	**4. High** • >25%<50% of budget • >10% project delay & can't make it up • Major quality and/or system compromises • Poor quality information, significant work required & significant • Serious political and reputational consequences • Serious stakeholder criticism	**5. Extreme** • >50% of budget • Unspecified delay, uncontrolled "Acts of God" (force majeure) • Significant performance deficiencies, quality failure or system breakdown • Redundant & inadequate information requiring a redo • Extreme political and reputational consequences • Serious and continuing stakeholder criticism expressed publicly.

4. Management Action and Escalation requirements

Based on the 'level of risk the following are to be applied:

Level of Risk	Escalate to Project	Timeframes	Required Actions
Extreme	Steering Committee (SC)	Urgent escalation of risk via line management or diplomatic channels	• Immediate attention required – risk management strategies have not been effective. • SC acceptance of risks with approved treatment plans and agreed, implemented review cycles and reporting requirements
High	LINZ, MFAT, MNZ PMSA	Immediate escalation to via line management	• Urgent attention to these risks is required • SC to acceptance of risks with approved treatment plans and agreed, implemented review cycles and reporting requirements
Medium	LINZ, MFAT, MNZ PMSA	Escalation in a timely manner	• Active monitoring and management of these risks is required
Low	LINZ	N/A	• Review regularly to ensure the level of risk is not increasing

Appendix D: Detailed Activity Description: Economic Impact Analysis

Economic Impact Analysis

Background

An importance component of the Regional Risk Assessment Framework will be an **economic impact analysis**.

This **economic impact analysis** will determine whether undertaking the hydrographic surveys in a particular area is a sound investment, and how this compares with alternative projects. This analysis would also consider the wider economic impacts, including the multiplier effects. For example, it also looks at the impacts of an activity shifting location as a result of the investment in undertaking hydrographic survey work, such as the expansion of the cruise ship industry.

In addition, the economic impact analysis will quantify the **current and potential economic impact from the cruise ship industry**. This analysis will consider the potential opportunities for cruise ship expansion should priority hydrographic surveys be undertaken.

MFAT will lead and manage the economic impact assessment. The Terms of Reference will be finalized in consultation with LINZ and other key stakeholders.

A draft overview of the economic impact analysis is outlined below. The final Terms of Reference will be agreed between MFAT and LINZ.

Overall Goal

Maximised investment by South-west Pacific countries and donors in updating and undertaking hydrographic surveys.

Objectives

a) To identify the current direct and indirect contribution of the port, harbour and wider shipping industry (including the cruise ship industry) to selected South-west PIC economies.

b) To identify the direct and indirect linkages between hydrographic surveys, and port, harbour and wider shipping industry economic activity, including shipping routes[1].

c) To establish the likely economic impacts (costs/benefits) of the port and wider shipping industry over the next 30 years if hydrographic surveys were undertaken compared to a scenario where this investment was not made.

d) To develop a prioritised list of hydrographic surveys in the South-west Pacific based on the direct and indirect economic benefits undertaking this survey work would bring.

Methodology

The methodological basis for this study should be an input-output analysis.

This type of analysis is a suitable model for the detailed description of regional economies and for measuring the impacts of existing industries, new industries or changes in the industry (in this context, there is particular interest in the potential expansion/exit of the cruise ship industry).

The different analytical tools the EIA should use include:

- Modeling the current economic impacts using an input-output model;
- Modelling the differences in the long term impacts of proceeding and not proceeding with hydrographic surveys; and
- Using the input-output model, extrapolating indicative economic impacts.

The economic impacts should:

- be disaggregated by geographic area (both country to country and within the country itself);
- be disaggregated by cargo type – containers, cargo, passengers and dangerous goods.

[1] This analysis will need to consider current and projected inter and intra-island maritime routing – in terms of which routes are currently most widely used, which routes are not able to be used due to poor charting, which islands are not currently able to be accessed due to poor charting, and which routes/islands would be used if the navigational risks were reduced.

- include direct outputs, value-added, household income and employment.

- include externalities such as exploring the potential economic impact of an environmental disaster due to a charting-related grounding or sinking.

Stakeholder consultation should include discussions with the following key stakeholders:

Commercial stakeholders including:

- cruise ship companies (Carnival Australia, Royal Caribbean)
- regional freight companies (Reef Shipping, PFL, PIL)
- domestic intra-island passenger ferry operators
- other shipping operators including fuel tankers and major fishing vessels; and
- tourism operators (e.g. whale watch operators)

Government / maritime regulatory bodies including:

- PIC maritime authorities
- PIC tourism and economic development lead agencies
- International Maritime Organisation
- International Hydrographic Organisation
- South West Pacific Regional Hydrographic Commission
- Australian Hydrography Authority
- Maritime New Zealand
- Australian Maritime Safety Authority

Appendix E: Programme Management and Implementation Arrangements

Position Descriptions

Title - **Pacific Hydrography Risk Assessor (PHRA)**
Responsible to - LINZ NZ National Hydrographer
Staff Responsibilities- Nil
Location - Wellington
Date - January 2012

Purpose
To conduct a strategic South West Pacific-wide Regional Hydrography Risk Assessment of the accuracy and adequacy of nautical charting coverage to improve understanding of the wider risks and priority areas for action by partner countries and donors. (Includes scope/commission an economic impact analysis and development of a long term implementation plan).

Nature and scope
There is a lack of accurate and adequate charting coverage in the South West Pacific which has led to inefficient and unsafe maritime transport control which prevents or inhibits safe maritime trade, sustainable economic opportunity and protection of the environment.

The PHRA will work closely with Land Information New Zealand (LINZ) and other IHO Member States with charting coverage in the Pacific region, the South West Pacific Regional Hydrographic Commission (SWPHC), PICs maritime administrations, the Ministry of Foreign Affairs and Trade (MFAT) and other agencies and groups engaged in the maritime sector to progress and coordinate the South West Pacific-wide Regional risk assessment.

An inter-agency Steering Group will oversee and provide guidance on the PHRA's work plan.

Key Accountabilities and duties
Short term:

- Establish good working relationships with all major stakeholders in the region – AHS, UKHO, SWPHC, MNZ, SPC, Cruise industry
- Develop a scoping document which includes economic impact analysis methodology, risk assessment requirements and methodology options with recommendations

Long term:

- Undertake a strategic South West Pacific-wide Regional risk assessment of the accuracy and adequacy of nautical charting coverage,
- In consultation with relevant stakeholders develop an implementation plan for hydrographic surveying and chart production based on the risk assessment in consultation with all major stakeholders
- In consultation with relevant stakeholders develop a prioritised hydrographic survey programme and national chart scheme for each PIC, harmonised across the pacific
- Provide advice and technical assistance for hydrography risk assessment in the Pacific region
- Liaise with relevant New Zealand and International bodies on issues related to hydrography risk assessment throughout the duration of the project
- Report quarterly to the MFAT/LINZ inter-agency steering group on progress

Relationships

The person in this role is expected to foster good working relationships with the following people by providing accurate, expert and timely advice and constant liaison:

Internal: LINZ – National Hydrographer, Manager Hydrography and LINZ-MFAT Steering Committee

External: Australian Hydrographic Service (AHS), UK Hydrographic Office (UKHO), SWPHC, NZ MFAT, AMSA, MNZ, Pacific Maritime Administrations, SPC

Person Specification

- Relevant hydrography/maritime qualification or tertiary qualification
- Experience working for a national hydrographic authority
- Experience of leading and managing people
- Proven track record of managing complex projects to a successful conclusion - tenacious and determined.
- Strong problem-solving skills and decision making skills
- An ability to manage ambiguity in complex and fluid situations
- Effective negotiation skills
- Ability to network and influence effectively at a range of levels in industry and government
- An understanding of the political, social and economic dynamics of Pacific states
- Strong oral and written skills
- Strong relationship management skills

LINZ Code of Conduct

Fair, Impartial, Responsible, Trustworthy

Title - **Electronic Navigational Chart Data Analyst (ENC_DA)**

Purpose

The role of the ENC Data Analyst is to enable accelerated production of Electronic Navigational Charts (ENC) for the New Zealand region of the South West Pacific where LINZ has charting coverage

Key Accountabilities and duties

This position is accountable for:

- Contribute towards the output requirements of the South West Pacific ENC's through;
- Reducing complex Hydrographic data into clear, meaningful and safe products
- Application of knowledge and understanding of the IHO S-57 Transfer Standard for Digital Hydrographic Data
- Application of the LINZ source data specification and workflows for ENC production through HPD Source Editor including New ENC production and ENC maintenance
- Quality checks throughout the workflows of ENC Production in HPD

Relationships

The ENC Data Analyst needs to have strong working relationships with

- Manager ENC Production
- Manager Hydrography
- National Hydrographer
- ENC Data Analyst Team

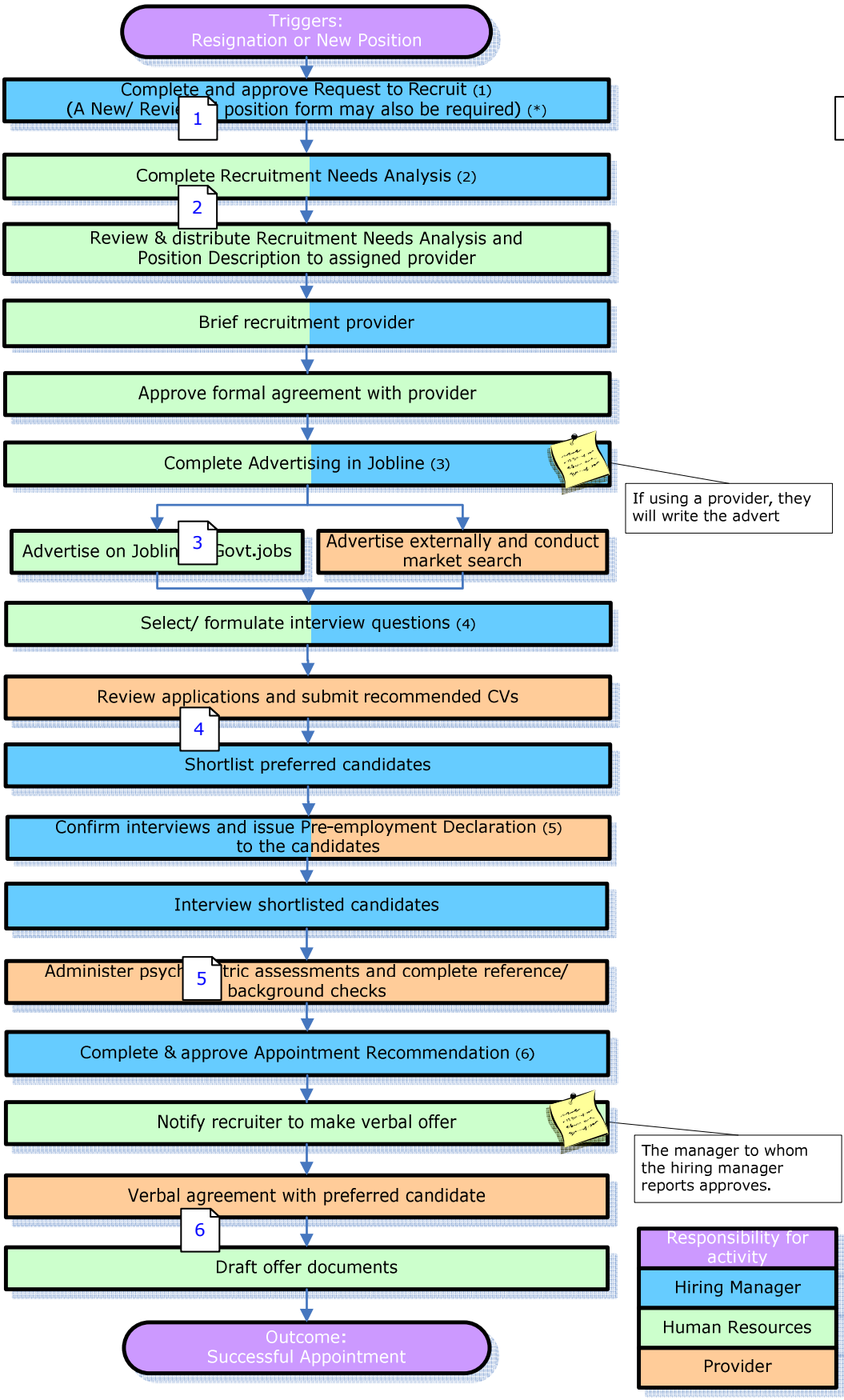
Person Specification

Conscientious and well organized approach to their work
Team player with strong communication skills
Ability to visually interpret data
Demonstrable focus on quality with attention to detail
Customer focused
Results oriented with the ability to think and solve problems

LINZ Code of Conduct

Fair, Impartial, Responsible, Trustworthy

Appendix F: LINZ Recruitment Process Map



Appendix G: LINZ New Position Establishment Application Form

New or Reviewed Position Details

Use this form when you are establishing a new position or are changing the details of a position in CHRIS21. This form is to be used by managers. All fields need to be completed. Please sign and return the form to Human Resources in National Office.

Position Title											
Effective Date											
Cost Centre	**Number:**										
	Name:										
Salary Band:	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	**NB** Secondments
1 to 9 or Senior Mgmt	1	2	3	4	5	6	7	8	9	Snr Mgmnt	are not sized
UP:											
EXECUTIVE	NVESTMENT								ENT &		
					ING POSITION:						
Tenure:	**Open Term** ☐				**Fixed Term** ☐				**Specify duration:**		
					Secondment ☐				**Specify duration:**		
Hours per Week (Normal)	**Fulltime** ☐				**Part time** ☐				**%**_____		

Position code:	(HR To complete after sign off)	
ANZSCO Code	(HR to complete)	
Management Level	(Reporting Level) (HR to complete)	Level
Position reports to (position)	**Position code:** **Emp No:** **Name:** **Title:**	CHRIS Screens PDT and REL EPD (Workflow Group – LINZ)
Cost Centre Manager	**Name:**	
Additional information for CHRIS21	(HR to complete)	ACC: 81110 O/T Payable: Y Security Level: 5
Job Points (HR)		**JEP**: Job Eval for Posn

General Manager: **Establishment Slot is available** ☐	**Management Accountant** **Funding available and cost centre correct** ☐

Notes or comments on where establishment is coming from:		Notes or comments:	
SIGNED:		**Signed:**	
Name:		**Name:**	
Title:	General Manager	**Title:**	Management Accountant
Date:	**/ /**2011	**Date**	**/ /**2011
Cost Centre Manager to confirm that all the details are correct:		**Seen by Team Leader Administration if additional accommodation requirements needed:**	
Signed:			
Name:		**NAME:**	KELLIE HARRALL
Title:			TEAM LEADER ADMINISTRATION
Date:	**/ /**2011	**Date:**	**/ /**2011

Appendix H: Glossary

AHS	Australian Hydrographic Service
PHRA	Pacific Hydrography Risk Assessor
ENC-DA	ENC Data Analyst
PICs	Pacific Islands and Countries
SPC	Secretariat of the Pacific
UKHO	United Kingdom Hydrographic Office
SWPHC	South West Pacific Hydrographic Commission
IHO	International Hydrographic Organization
IMO	International maritime Organisation
Risk Matrix	Table identifying level of risk based upon frequency and consequence
Outputs	Deliverables from the projects
Outcomes	Desired impact achieved from the projects outputs
Stakeholders	A person, group or organisation that has direct or indirect interest in the projects
Donor	Government and non-governmental funding agency
Risk Register	Table identifying specific risks for the project, their consequences and treatment to mitigate against them
Deliverables	Products produced as a result of the work being completed successfully
ECDIS	Electronic Chart Display and Information System
VLCC	Very Large Crude Carrier