

# Measuring the sustainability of logistics in small island nations in the Pacific

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# Abstract

This thesis examines the factors which small island nations in the Pacific could consider measuring as indicators when monitoring and reporting on the sustainability of supply chain management practices, focused on the logistics elements.

A theoretical framework is derived from a review of appropriate literature to guide the research, which employs a case study methodology. The case study provides a cross sectional view of the reporting environment for early 2015, focused on the small island developing states (SIDS) that are members of the Pacific Islands Forum. Governmental regional organisations are the core participants for the development of the research, due to the nature of the political and business environment in these Pacific nations. One private company and one academic institute are also included as possible triangulation validations.

The research finds that no effective measuring or reporting is currently being conducted in relation to assessing the holistic sustainability levels of logistics in the region. The lack of past adequate cross sectional or other methodology of data capture and reporting by the nations, has consequently resulted in a lack of adequate longitudinal data sets. Such data is needed to reliably inform and enable effective decision and policy making on logistics activity and investment in the region.

The research finds that monitoring and reporting systems would operate effectively at the regional government level, with data disaggregation to national and indicator level. The Global Reporting Initiative (GRI) method of reporting fits within the political environment, and the research finds that this, linked with the UN Sustainable Development Goals (SDG) indicators, which are to apply from 2015 to the year 2030, could provide a suitable monitoring and reporting framework. This would enable a consistent longitudinal data capture.

The research's recommended methodology will enhance the monitoring value and improve the opportunity for effective further research for the sustainability levels of logistics and other related societal functions in the small island nations.

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The advice and guidance supplied by the Massey University supply chain team, led by Paul Childerhouse, and my supervisors Jersey Seipel and Alan Win has been critical to the completion of this research. Undertaking the research for this paper has flowed from my work in the Pacific Islands for various projects with NZAID and other organisations. However, analysing the situation in a rigorous academic environment meant that a significant directional focus was required in defining the research question to enable effective analysis.

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# Glossary

<b>AOSIS</b>	Alliance of Small Island States, a global organisation of all small island states
<b>APICS</b>	American Production and Inventory Control Society; now simply branded as APICS
<b>APICS SCC</b>	APICS Supply Chain Council (APICS & SCC merged in 2014)
<b>CSF</b>	Critical success factor
<b>CSO</b>	Community service obligation
<b>CSR</b>	Corporate social responsibility
<b>EE</b>	Ecological economics
<b>ERL</b>	Environmentally responsible logistics
<b>EVI</b>	Economic vulnerability index
<b>GHG</b>	Greenhouse gases, principally carbon dioxide, methane, nitrous oxide, and fluorinated gases such as hydroflouorocarbon
<b>GISR</b>	Global Initiative for Sustainability Ratings
<b>GRI</b>	Global Reporting Initiative
<b>GRIG4</b>	Global Reporting Initiative G4 version, the latest version, implemented 2014
<b>GSCM</b>	Green supply chain management
<b>GVSM</b>	Green value stream mapping
<b>IEA</b>	International Energy Agency
<b>IISD</b>	International Institute for Sustainable Development
<b>IUCN</b>	International Union for the Conservation of Nature
<b>KPI</b>	Key performance indicator

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<b>LCA</b>	Life cycle analysis; relating to sustainability, means the total effect on the environment of the product from design to disposal
<b>MDG</b>	Millennium development goals
<b>MSC</b>	Marine Stewardship Council
<b>NMDI</b>	National minimum development indicators
<b>ODA</b>	Official Development Assistance
<b>PIC</b>	Pacific Island countries
<b>PICT</b>	Pacific Island countries and territories; members of SPC
<b>PIDF</b>	Pacific Islands Development Forum
<b>PIF</b>	Pacific Islands Forum, Pacific Islands Forum Secretariat; a political grouping of the nations in the area, with secretariat based in Suva
<b>PNA</b>	Parties to the Nauru Agreement, a fishing licensing agreement for a group of PICTs
<b>PRDR</b>	Pacific Regional Data Repository, for Sustainable Energy for All (PRDR SE4ALL)
<b>PRISM</b>	Pacific Regional Information System; a project of the statistics division of SPC
<b>PSIDS</b>	Pacific SIDS
<b>PSSA</b>	Particularly sensitive sea areas; an IMO activity
<b>SASB</b>	Sustainability Accounting Standards Board
<b>SCOR</b>	Supply chain operations reference model, managed by APICS
<b>SDG</b>	Sustainability Development Goals
<b>SDSN</b>	Sustainable Development Solution Network (a UN organisation)
<b>SEEA</b>	System of environmental and economic accounting (a UN system for valuing the natural capital of a nation)
<b>SIDS</b>	Small island developing states

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<b>SPC</b>	Secretariat of the Pacific Community; an operational and research organisation with a role to implement the policies of the PIF; corporate management based in Noumea with some operational management in Suva
<b>SPSCs</b>	Sustainability performance of supply chains
<b>SRPP</b>	Socially responsible public procurement
<b>SSI</b>	Sustainable shipping initiative
<b>SuSCM or SSCM</b>	Sustainable Supply Chain Management
<b>TBL</b>	Triple bottom line
<b>TEU</b>	Twenty foot Equivalent Unit, the standard shipping container unit used in this region
<b>UN-OHRLLS</b>	UN office of the high representative for the least developed countries, landlocked developing countries, and small island developing states
<b>UNCTAD</b>	UN conference on trade and development
<b>UNEP</b>	UN Environment Programme
<b>VSM</b>	Value stream mapping
<b>WBCSD</b>	World Business Council for Sustainable Development
<b>WRI</b>	World Resources Institute