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Potential for sustainable sea transport: A case study of the Southern Lomaiviti, Fiji islands

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ABSTRACT

This paper outlines research on the sea transport need and potential options for the future for the islands of Gau, Batiki and Nairai, Southern Lomaiviti, Fiji. Sea transport is vital for this island group but is limited to infrequent commercial ferry services and outboard driven punts. The Fiji Government subsidises the ferries through its Shipping Franchise Scheme to ensure commercial operators service the route. The absence of commercial development within the group has meant high biodiversity and cultural values have been preserved and there are a number of projects, especially on Gau, with a common aim of building resilience or 'climate change proofing' the communities and their island environments. These projects are focused on supporting local communities to maintain well-being through improved reliance on local and natural assets. It is logical to add analysis of low carbon sea transport options to these initiatives. Lomaiviti has been selected as representative of a number of isolated Maritime Provinces in the Pacific. This paper is expected to pave the way for greater research in this field and assist in solving the crippling effect of the region's current fossil fuel dependency.

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1. Introduction

This paper discusses a case study of the local sea transport use and potential options for the future for three related islands, the Southern Lomaiviti group in Fiji. A comprehensive needs survey building on preliminary assessments on Kadavu Island, Fiji, is being conducted. The sea transport context facing Small Island Developing States (SIDS) in the Pacific is given and the rationale for prioritising baseline survey work at the village and island level explained. The potential of using this assessment methodology in other island locations to build the data sets needed for projects which seek to address the issue of sustainable transport for the Pacific is highlighted.

Acronyms and Abbreviations: ADB, Asian Development Bank; AusAID, Australian Agency for International Development; FAO, Food and Agriculture Organisation (UN); FICS, Forum (Secretariat) Island Country States; FAD, Fish Aggregating Device; HIE, Household Income and Expenditure; IAS, Institute of Applied Sciences; IMO, International Maritime Organisation; JICA, Japan International Cooperation Agency; NFMV, Nature Fiji-Mareqeti Viti; NGO, Non-Government Organisation; PaCE-SD, Pacific Centre for Environment and Sustainable Development; PICs, Pacific Island Countries; PIDF, Pacific Islands Development Forum; PIF, Pacific Islands Forum (list countries); SIDS, Small Island Developing States; SOFI, Spirit of the Fiji Islands; SPC, Secretariat of the Pacific Community; SST, Sustainable Sea Transport Talanoa; SSTRP, Sustainable Sea Transport Research Programme; UNCTAD, United Nations Conference on Trade and Development; UNDP, United Nations Development Programme; UNESCAP, United Nations Economic and Social Commission for Asia and the Pacific; USP, the University of the South Pacific; WCS, Wildlife Conservation Society; WWF, World Wildlife Fund for Nature

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This research seeks to replicate and extend an initial village scale survey to an island group scope. It is believed that such surveys have not previously been conducted for this level in Fiji. It is intended that the survey methodology developed will prove replicable in other Fiji and Pacific locales and can eventually be used as a basis for collating much needed data on the lowest common denominator of the sea transport sector. Our preliminary analysis suggests that fuel used for local level sea transport, as a proportion of national use, has either been discounted or heavily underestimated in previous analysis of Pacific Island Countries' (PICs) transport need and fuel use.

Issues of sea transport remain universal and primary, a basic human need of Oceanic peoples today and tomorrow [22]. The region's transport issues are unique; tiny economies scattered at the ends of some of the longest transportation routes in the world [2,25] and the most challenging network to maintain per capita and per sea mile with the resource base available to support it [24]. Transport is a priority for Pacific Island Forum leaders under the Pacific Plan, the overarching regional policy framework for PICs, and its importance as an essential facilitator of economic growth is well recognised [33].

Sea transport in this region is about much more than facilitating economies and trade. Fijians, like most Pacific Islanders, are highly mobile; maintaining family connections is a vital concern and there is considerable travel between kin throughout Fiji [24]. Any increase in transport costs immediately impacts social and cultural connectivity. The agenda needs to be considered in a

ESTIMATES OF THE FOSSIL FUEL USE FOR POWER GENERATION AND TRANSPORTATION IN THE FICS IN 2009 (IN KL)

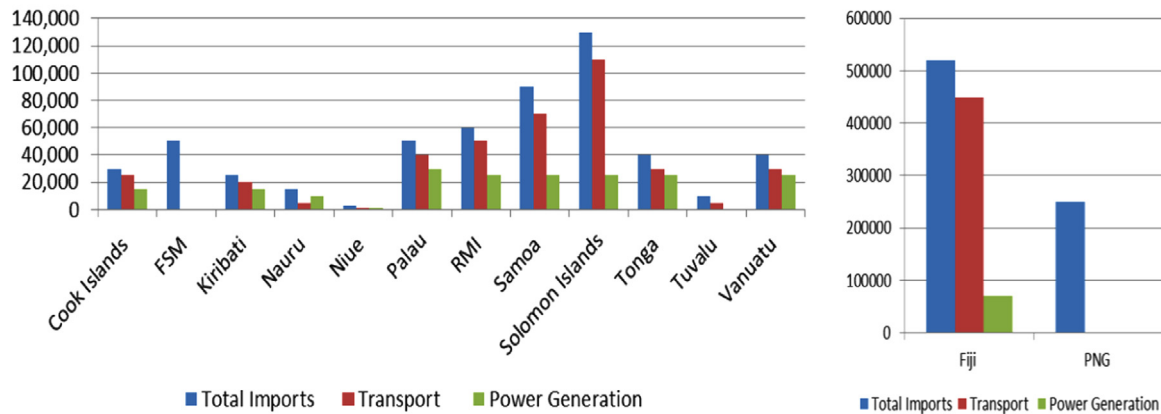


Fig. 1. Estimates of fuel with Fiji and PNG shown separately (adapted from [12]).

wider context than just economics and the research is seeking to provide the basis for an analysis that includes social, cultural and environmental bottom-lines.

This village level research is an essential building block for the University of the South Pacific's (USP) current research programme on sustainable sea transport for PICs. Analysis of the sector is severely hampered by a lack of reliable and up-to-date data on which to base recommendations for future action. For future solutions to be demonstrated as truly sustainable an accurate picture of both current use and projected need is essential and data availability, especially at the lowest common denominator of the island and village is currently almost entirely lacking.

2. Pacific island sea transport context

The Pacific region is the most dependent on imported fossil fuels in the world with PICs importing more than 95% of fuel [36]. Such dependency is recognised as having a crippling effect on national budgets and revenues and impacts on key productive sectors in the region [33,28,25]. Various strategies to reduce this dependency are being considered and implemented but primarily target electricity generation. Transport generally has received far less attention, despite being the region's single largest sector user of imported fuel (75% regional average) [12]. Alternatives to current sea transport options are almost totally ignored in current regional and national debates and the issue has been previously invisible within the policy and donor strategy space at all levels [24,28] (Fig. 1).

Sea transport is essential at all levels of society from fishing and local transport needs of small isolated islands and villages to inter-regional shipping requirements of nation states. Currently all maritime transport services are fossil-fuel powered and are becoming increasingly unsustainable as operational fossil fuels costs increase. Such increases have considerable effect socially and culturally, as well as being a major inhibitor of development economically. SPC [25] summarises that large distances, high fuel costs and low economies of scale make the cost of developing and maintaining transport infrastructure relatively high. Issues of constricted markets for local products and reliance on international trade are exacerbated by global developments as well, resulting in fewer employment and livelihood possibilities.

The literature on Pacific sea transport is thin, comprising mainly historical assessments (e.g. [5–10]), some specialised studies (e.g. [1,14]) or the reports of a small number of development agencies (in particular ADB, AusAID, ESCAP, SPC, and UNCTAD). All agree that it is the intra-country domestic shipping services that are in most dire need [2,4,25,33]. Recently, USP researchers have begun populating the literature base for this field with Nuttall et al. [24] providing the regional overview supported by more specialised findings [37,21,23,22,28].

Throughout the Pacific inter-island and coastal shipping services are usually run by governments or small, independent shipping companies. Many routes are commercially unviable and some are simply uneconomic. Governments are required to subsidise or otherwise provide for these with continually accumulating costs.

This is illustrated using Fiji as an example. Fiji has 332 islands, of which 100 are inhabited, and an area of 1.3 million square kilometres of ocean. For many communities there is no other form of transport except by sea. All maritime transport is fossil fuel dependent. There are a number of private shipping operators serving the major economic routes. However, the Fiji Government's budget for 2014 includes FJ\$ 1.725 million for the Government Shipping Franchise Scheme¹ which subsidises private sector vessels to ensure provision of maritime transport services to ten identified "uneconomical" sea routes (based on 42% of shipping company operating costs/trip) [18]. For instance, the government subsidy for sea transport between Suva and Rotuma costs FJ\$25,000 per 700 nautical mile trip.

Because the vast bulk of commodities and manufactured goods are transported by ship in the Pacific, and considerable domestic travel is by sea, the cost and quality of shipping immediately affects the welfare of the consumers and producers [25]. Additionally, the marginal nature of the industry means that financing shipping investment, either for governments or private operators, is problematic [2,25].

Generally for many PICs at a domestic level, shipping services are restricted to an aging and inefficient fleet. The marginal returns and financing barriers, especially for domestic services, means most operators are trapped in a cycle of replacing old ships

¹ The shipping franchise scheme was established by the government in 1996 and seeks to provide at least a monthly service to those outlying maritime islands which would otherwise be unserved.

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