
Annex B

Outline of Peer Reviews

undertaken by the INBCSP Team



Pacific Region
Infrastructure Facility

ANNEX B:

OUTLINE OF PEER REVIEWS UNDERTAKEN BY THE INBCSP TEAM

1 PEER REVIEWS UNDERTAKEN

The INBCSP team has undertaken the following peer reviews at the request of PRIF development partners and regional stakeholders:

1. Global Green Growth Institute
2. Review of the Facility Designers Guide for Tropical Islands
3. Review of the RMI draft NBC
4. ADB funded support for the Fiji NBC
5. SPREP funded Nauru Electrical Installations "Wiring Guidelines"
6. Rights and Inclusion Australia support to the Pacific Disability Forum
7. Solomon Islands Infrastructure Management Bill Assistance (SIIMBA)
8. Sendai Framework Implementation Midterm Review- Thematic consultation

and has provided support to other PRIF Initiatives and webinars outside the specific scope of this INBCSP-TA. Details of the peer reviews are outlined below.

2 GLOBAL GREEN GROWTH INSTITUTE

GGGI have been commissioned under the 2021 Fiji Low Emissions Climate Resilient Development Program to develop a Sustainability Chapter for the Fiji National Building Code. As this is expected to complement the ADB support to the forthcoming revision of the Fiji NBC, ADB and GoF Ministry of Infrastructure and Meteorological Services (MoIMS) requested the INBCSP team complete a review of the chapter. Two comprehensive reviews were undertaken and provided to GGGI, ADB and the MoIMS in January and February 2022. The reviews identified two main concerns:

1. From a regulatory, legal, and enforcement standpoint, the "Recommended" or "Guidance" elements would be more appropriate for a separate document (rather than an NBC annex) that is non-mandatory. The guide could be then referenced by owners or government procurement on how to achieve the mandatory requirements and/or if they want to go above the minimum required sustainability requirements.
2. In its current form, the Sustainability Chapter does not appear to be written as a regulatory document that is enforceable & numerous concepts presented appear to be more appropriate for a "Fiji Guideline or Code of Practice for Sustainable Buildings." From a practitioner's point of view, it would also be appropriate to integrate sustainability requirements into the appropriate Fiji NBC Chapter.

It is also understood that GGGI has issued in July a consultancy: "Fiji: Capacity Development to Enhance Sustainability of Building Sector" with the objective of delivering

- an Industry Capacity Survey;
- development of a checklist/scorecard for implementation of the Sustainability Chapter;
- providing a Low Carbon Buildings Training Program, and
- conducting training for trainers' program.

It is also understood that the consultant engaged by ADB to update the Fiji National Building Code will integrate the intent of GGGI Sustainability Chapter as regulatory requirements into the updated Fiji Building Code, rather than integrating the Sustainability Chapter verbatim.

Considering the above, it is recommended that the Fiji MI&MS review and coordinate the content and timing of these 2 consultancies. i.e. Potentially the Fiji NBC should be completed with scorecards developed and training provided subsequently.

3 REVIEW OF THE FACILITY DESIGNERS GUIDE FOR TROPICAL ISLANDS

INK Architects and Stantec have been engaged by the US Army Corps of Engineers (USACE) on behalf of the Office of Insular Affairs (OIA), to develop a Critical Infrastructure Design Guide (CIDG) for the US Pacific territories and compact states, including RMI, Palau and FSM. USACE requested the INBCSP team review the consultant's "CIDG Study Report" (43 pages). A comprehensive and constructive review was provided in March 2022.

The INBCSP team noted that the CIDG guide is a substantial effort covering a wide range of topics and that guide could be used to substantially assist designers and inform North Pacific building codes and practices. There is a potential that the FDGTI could provide practical insights for other Pacific Island Contexts.

In July 2022 the INBCSP will provide review comments to USACE on the consultant's draft "Facility Designers Guide for Tropical Islands (FDGTI) - Designing for Resilience in a Changing Climate" (88 pages).

The purpose of the FDGTI for the island areas is to provide design guidance for standardising and improving the quality and long-term performance of building projects. The FDGTI sets out the minimum requirements for building projects funded by OIA.

Considering that RMI has developed a draft NBC and that FSM is in the process of developing an NBC there may be a potential for overlap and potential challenges for OIA funded projects depending on when the FDGTI will be published and when the RMI and FSM NBCs will be legally adopted. Based on RMI's survey response the RMI NBC will apply to all internationally funded projects. It is unclear if specific FDGTI minimum requirements will be above or below the RMI NBC; and it is unclear at this time if OIA would retain or exempt RMI from FDGTI minimum requirements if an RMI NBC is legally adopted. A similar situation may occur with FSM. It is unclear at this time if Palau will develop and adopt an NBC in the near future and/or if the FDGTI is a precursor document to a future Palau NBC.

4 REVIEW OF THE RMI DRAFT NBC

RMI have completed a draft RMI National Building Code (2021 Edition) based on the International Building Code (IBC). RMI requested INBCSP review the draft RMI National Building Code 2021 (706 pages) to be incorporated into the current public review. Comments were provided to RMI on 18 March 2022.

The INBCSP team noted in their review that the draft RMI NBC 2021 is a substantial effort and a significant achievement and provided comprehensive review comments that will add value to improving the draft NBC. One of the main challenges observed with the draft was that there should be additional prescriptive and/or performance requirements to improve durability/longevity, low-maintenance, and climate adapted building structures that are appropriate to the RMI tropical and coastal environment. The CIDG described in the previous section could support these requirements.

5 ADB FUNDED SUPPORT FOR THE FIJI NBC

At the request of ADB, INBCSP have provided ADB and the Government of Fiji (GoF) with an overview of the structure of NBCs across the region and comments on the FNBC structure proposed by the FNBC Support TA consultant Wavefront Planning and Design Inc (Canada). The INBCSP commentary noted that:

- Of the 9 South Pacific PICS that have NBCs, 8, including Fiji, have almost identical structures and align well with the Australian National Construction Code.
- The current FNBC is generally "harmonized" with the rest of the South Pacific and Australia National Construction Code.
- The Samoa NBC appears to be a completely different approach from that in the other 8 PICS.
- The scope of 8 PIC NBCs covers buildings, while the Samoa NBC also covers Buildings, Dams, Seawalls and Maritime Infrastructure.

The key message from the review was that the structure and approach of 8 of the 9 South Pacific Islands, including Fiji, are "harmonized" and generally in alignment. The Samoa NBC does not appear harmonized with the other PICS.

The Wavefront approach appears to follow the Samoa NBC approach (Wavefront were the consultants for updating Samoa NBC in 2016-17). The INBCSP team queried whether the Fiji Task Force had been presented with different options on the structure and content of the proposed Fiji NBC and whether Wavefront provided pros and cons of different building code approaches and obtained feedback on the different approaches. i.e. present options on the format of the updated building code for consideration.

The INBCSP team undertook a basic analysis of the Fiji NBC structure proposed by Wavefront and identified several comments and concerns that ADB could share with Wavefront, noting that

1. There should be a smooth and efficient transition from the 2004 Fiji NBC to the 2023 Fiji NBC; ensuring that the new Fiji NBC is readily adopted by the Fiji construction industry and easily enforced by local councils and provincial governments; without substantial restructuring, retraining, and changes to administrative processes or ways of doing business. This was one of the key findings from the 2019 PRIF "Regional Diagnostic Study of Constraints in the Application of Building codes in the Pacific".
2. There should be consideration of the potential effects that a restructured Fiji NBC may have on regional harmonization and alignment with other Pacific Building Codes and practices and the ease of doing business regionally.

And adding the following comments for ADB consideration:

- **Modern but Same Structure:** the Fiji NBC should be modernised, and the content updated. i.e. agree and advocate for change, with a structure/format consistent with the current FNBC and the region rather than a full restructure. The Fiji Task Force should be presented for their consideration the Wavefront option of a restructured building code as well as the option of modernising but keeping a similar structure.
- **For the Sustainability/DRM Chapters:** Sustainability and resilience are more likely to become the norm through direct integration rather than separation. The INBCSP team proposed to ADB a methodology for how this could be achieved.
- **Green / Net-Zero / Sustainability Ratings (Green Star, EDGE, etc):** The INBCSP team recommended that there should be a review of the different rating systems, and which would be the most appropriate for Fiji.

The comments and concerns were well received by both ADB and Wavefront and a clarification meeting between the Wavefront Team Leader and PRIF was held in August (minutes pending). Subsequent to the meeting ADB have formally requested PRIF for support from the INBCSP team to peer review for the Fiji National Building Code (FNBC) and associated documents throughout the development process.

The INBCP team were requested to review the FNBC Legal and Institutional Arrangements Report in November 2022. Comprehensive review comments were provided. While the INBCSP team observed that the Report was well structured and clearly written they noted some areas that required further attention. Key areas where additional information would be helpful included:

1. **NBC roles and responsibilities:** A better understanding of the roles and responsibilities each department and relevant authority has in managing and administrating their NBC responsibilities and the challenges they face in undertaking these roles. This could be demonstrated in a table which identifies gaps and proposes solutions.
2. **Legislation gap analysis:** A diagram showing how each of the acts/regulations/policies/legislation/plans/strategies link to the existing FNBC and a gap analysis conducted indicating what amendments are required for existing legislation to accommodate the new NBC act.
3. **Trades and Standards legislation:** Inclusion of the "Trade Standards and Quality Control Act 1992" and related standards into the "Existing Acts" section of the report and how the Act and standards impact the FNBC.
4. **Building permitting and enforcement processes:** A flow chart of the existing building permitting process followed by a second flow chart demonstrating how efficiencies and streamlining of administration/building permitting and enforcement and ensuring quality/consistency can be better achieved.
5. **Benchmarking of other PIC legislation and NBCs:** A matrix that benchmark's Fiji's building control legislation against comparable Pacific Island Country legislation and building codes.
6. **Stakeholder concerns:** Inclusion of stakeholder concerns into a matrix with proposals on how the concerns could be addressed.
7. **Summary of recommendations:** A summary table of the recommendations on how the building control legislation should be improved and rationalized, the building legislation harmonized with related legislation and how institutional arrangements can be strengthened and better administered. The table could include the pros and cons of each recommendation.
8. **Next steps:** More information on next steps and a proposed timeline

6 SPREP FUNDED NAURU ELECTRICAL INSTALLATIONS "WIRING GUIDELINES"

At the request from SPREP and GoN the INBCSP team have been assisting the SPREP consultant, Maruan Jimwereiy, with advice on how best to approach the "Nauru Electrical Installations Wiring Guidelines" (24 pages) with a link to the new NNBC. PRIF is supportive of the work carried out by the consultant and the link it provides to regulating electricity through the adoption of the AS/NZS 3000:2018 Standard "Electrical installations (known as the Australian/New Zealand Wiring Rules)." Adoption of this standard and regulating the profession is a positive step for electrical safety and a steppingstone for the NNBC.

The most recent review by the INBCSP team of the final "Nauru Electrical Installations Wiring Guidelines" document identified the following for consideration by the consultant and SPREP:

- The Guidelines appears to be more "Regulation" than "Guideline".
- The guidelines appear to be an adapted version of the "Fiji Electricity Regulations 2019" but noted that the Nauru Guidelines appear to omit some key legal language that is in the Fiji Electricity Regulations.
- It is not clear which Government entity in Nauru is considered the "Electricity Regulator."
- To have a legally binding and enforceable guideline (or regulation) there should be a "Nauru Electricity Act" or potentially an amendment to the Nauru Utilities Corporation Act 2011.

The INBCSP team proposed potential next steps to address the review comments, initiate a process to legally adopt a revised version, develop an Act, and operationalise the Guidelines

to ensure that there are the necessary administrative and enforcement resources and tools. The review was provided to SPREP and GoN in early July.

7 RIGHTS AND INCLUSION AUSTRALIA SUPPORT TO THE PACIFIC DISABILITY FORUM

At the request of the Pacific Disability Forum the INBCSP team reviewed the following documents prepared by Rights and Inclusion Australia (RIA):

- Report 3A: Pacific Region Accessibility Standards Framework - Pacific Regional Accessibility Guidelines -Draft 9 (15 pages)
- Report 4: Pacific Region Accessibility Standards - Pacific Regional Accessibility Guidelines and Standards - Phase II.- Draft 5 (22 pages)

which are part of a ADFAT consultancy to develop Pacific regional accessibility guidelines.

A comprehensive matrix of comments and recommendations was prepared and provided to PDF and RIA in June 2022. The main comments were:

- The proposed Pacific Accessibility Standards appears to only cover the South Pacific and doesn't appear to include the North Pacific; noting that accessibility standards and requirements may be different between the South Pacific which is based on AS/NZS standards while the North Pacific is typically based on American Standards.
- The reports provided didn't appear to provide a review of what accessibility requirements and standards are currently referenced in the PIC building codes and regulations.
- PDF should consider preparing an engagement plan to assist PICs in evaluating whether the PDF/RIA Pacific Accessibility Standard should be referenced in their NBCs, urban regulations, and transportation guidelines.:
- The Solomon Islands NBC 2022 references the DFAT Accessibility Guide while other NBCs reference the "Design for access and mobility standards" AS 1428.1 and NZS 4121. It would be useful for PDF/RIA to perform a comparison and evaluation of the DFAT Guide and AS/NZS standards and the practicality of application in the PICs. Advice on whether PICs should amend their NBCs to reference the DFAT Guide, keep and/or amend the AS/NZS accessibility standards, or wait for the PDF/RIA Accessibility Standard should be provided.

The comments were well received by RIA on June 13 and a follow up meeting was held between RIA and the INBCSP on 30 June. RIA indicated they would review the draft documents considering the INBCSP comments.

8 SOLOMON ISLANDS INFRASTRUCTURE MANAGEMENT BILL ASSISTANCE (SIIMBA)

Ongoing assistance has been provided by the BCS on structural content related to the development of a new NBC of the Solomon Islands under the ADFAT funded SIIMBA TA as it impacts regional initiatives, related to:

- Earthquake and wind standards,
- ADB -World Bank – UNICEF initiatives in the water and sanitation sector, and
- UN Habitat and Habitat for Humanity work with informal settlements in urban areas.

9 SENDAI FRAMEWORK IMPLEMENTATION MIDTERM REVIEW- THEMATIC CONSULTATION

The INBCSP Team leader participated in the Sendai Framework Implementation Midterm Review- Thematic consultation. It proved to be an excellent platform to promote PRIF work around the Pacific and specifically the Pacific Building Code TAs. The INBCSP-TA

contribution will make a valuable contribution to the midterm review and will help improve some of the Sendai resilient infrastructure outcomes in the Pacific.

Contributions included discussion on

- Integration of social inclusion into the NBCs and collaboration with PDF and R&IA.
- Maintenance work on critical infrastructure with the USACE.
- Local community construction - Construction building manuals targeting simple housing and building that complies with the building code and can be constructed by local builders and communities – in particular schools and places of worship in remote communities- without the expense of hiring architects and engineers.
- Updates on building code related seismic and wind risk hazard initiatives.
- Differences in building code approach – Samoa and the rest if the Pacific.
- Integration of local materials – in particular Solomon Island local timbers – into the building codes.
- Consultative methodologies used to review and update building codes and compliance.
- Long term support proposals(10-20 years) for building the capability and capacity at the local government level to enforce compliance and promote building code benefits.

Key take outs from the review were:

1. There is a disconnect between infrastructure policy and implementation (compliance).
2. A key factor that results in non-resilient infrastructure is lack of maintenance (though this is only one of a number of factors).
3. At the housing level, particularly in rural areas, while there is a lot of traditional knowledge for traditional building techniques, there is a lack of knowledge and understanding of western building techniques.
4. Building codes need to be flexible to accommodate both sophisticated commercial, institutional, and industrial buildings and high covenant housing together with low covenant housing and simple buildings in urban, rural and informal settlements.
5. There needs to be a balance between macro and micro levels. Currently the emphasis has been at the macro level- eg high level policy – and not at the micro level – eg compliance and enforcement at local government level. Macro is easy – micro is hard – Micro requires a high commitment, significant financial and personnel resources and a long time frame.
6. There needs to be greater co-operation between ministries - eg disaster management and public works.
7. There needs to be greater co-operation between central government responsible for policy (eg Building code management and administration) and local government agencies responsible for implementation (Building code application and compliance).
8. In the Pacific, supply chain disruptions and high costs are an impediment to good construction outcomes.

CDRI summed up their takeout from the review with three points:

1. Disconnect between policy and implementation.
2. Disconnect between culture and technology.
3. Importance of maintenance.

It was noted that the INBCSP-TA is targeting real solutions to the CDRI points:

1. Emphasis on NBC institutional and legislative frameworks, building capability and capacity at the local level and NBC promotion and awareness
2. Updating the 1990 Home Building Manuals to be more relevant to local communities
3. USACE Facility Designers Guide for Tropical Islands

10 SUPPORT FOR OTHER PRIF INITIATIVES AND WEBINARS (REGIONAL)

The Team Leader was a guest panel member on the PRIF Community of Practice webinar: *Regional perspectives on the role of infrastructure in building back better and supporting disaster recovery* on 9 June 2022.

The Team Leader supports PRIF in leading one of the 3 key work streams identified by the Pacific Resilience Partnership (PRP) Technical Working Group on Resilient Infrastructure and Resilient Housing. The Team leader sits in on PRP meetings and attends and participates in PRP sponsored webinars and resilient infrastructure and housing related activities and broader work around the upcoming Asia Pacific Ministerial Conference on disaster response and recovery.