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Citation (APA)
Anantharajah, K., & Setyowati, A. B. (2022). Beyond promises: Realities of climate finance justice and energy transitions in Asia and the Pacific. *Energy Research and Social Science*, *89*, Article 102550. https://doi.org/10.1016/j.erss.2022.102550

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Energy Research & Social Science 89 (2022) 102550

Contents lists available at ScienceDirect

Energy Research & Social Science

journal homepage: www.elsevier.com/locate/erss

Original research article

Beyond promises: Realities of climate finance justice and energy transitions in Asia and the Pacific

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ARTICLE INFO

Keywords:
Climate finance
Climate justice
Energy justice
Energy transition
Fiji
Indonesia

ABSTRACT

Climate change is already having substantial adverse impacts across the globe, and these are projected to worsen dramatically in years to come without rapid and far-reaching measures to transition to low carbon development. Crucially, massive financial investment will be necessary to fast track a low carbon transition and the level of finance required will arguably be well beyond the resources and capability of public finance alone. With a focus on climate finance in Asia and the Pacific and drawing empirical evidence from our work in Fiji and Indonesia, this article investigates complex realities of climate finance as it flows to the recipient countries. This article reveals how existing structures and power relations impact the outcomes of financing transitions to low carbon energy. The findings suggest that climate finance flows primarily to the most bankable, lowest risk, highest return, and often the largest scale projects. Moreover, the prioritisation of large-scale projects tends to result in preference for on-grid as opposed to off-grid renewable infrastructures, the reinforcement of technological preferences of powerful stakeholders, and the exclusion of smaller projects and developers. Consequently, it could exacerbate rather than ameliorate existing inequalities with the most vulnerable groups gaining little if any benefits from such finance. This article concludes by highlighting the importance of designing climate finance governance and financial products that could mitigate multi-scalar inequalities and design the mechanisms that internalise the need for critical, intersectional co-benefit delivery.

1. Introduction

As cautioned by recent Intergovernmental Panel on Climate Change reports, there is barely a decade for taking far-reaching action to avert a climate change catastrophe with existential consequences [1]. Representations of transformative climate action have moved from centring on international treaties and national ambitions to financing the transition to a low carbon, resilient future [2]. Indeed, climate finance is increasingly generating optimism as a 'game changer' [3].

In the global policy debates on climate finance, questions of justice have been particularly prominent. These revolve around the moral obligations of the Global North vis-à-vis the Global South. The former, it is pointed out, has long benefitted from a high carbon economy and has better capacities to withstand climate change. Accordingly, it is argued that they are morally obligated to assist countries in the Global South that have been disproportionately affected by climate change impacts [4]. Such policy discourses have manifested in various global initiatives to facilitate the flow of climate finance from developed countries to the developing world. For instance, the 'Roadmap to US$100 billion'—a global pledge to mobilize at least USD 100 billion per year in climate finance for developing countries by 2020—was explicitly concerned with addressing climate justice and mitigating the disparities between the developing and the developed world [5]. Similarly, the Reducing Emissions from Deforestation and Forest Degradation (REDD+) initiative is a global mechanism that allows developed countries to pay developing countries based on their performance in reducing emissions from deforestation and in enhancing carbon stocks through sustainable forest management and conservation [6].

Yet, there remains a dearth of studies on the link between climate finance and justice prompting a call for critical analysis and empirical investigation of how climate finance might best serve as a mechanism to address climate (in)justices [4,7]. Calls for such studies and for consequent action to mitigate climate injustice have particular resonance in the Asia-Pacific, a region with more than its share of developing or undeveloped economies and one that is particularly vulnerable to climate-change impacts. With extensive coastlines, many archipelagic

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https://doi.org/10.1016/j.erss.2022.102550
Received 4 March 2021; Received in revised form 1 February 2022; Accepted 20 February 2022
Available online 28 February 2022
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nations and low-lying territories, the region is highly susceptible to climate related disasters [8]. Moreover, many countries within the region have limited resources and inadequate infrastructure that leave them ill-equipped to address climate change impacts [9]. Therefore, if appropriately constructed and harnessed, climate finance could facilitate the region's rapid transition to low carbon development and could do so in a way that takes account of the importance of justice. The paper thus embarks on critical exploration of climate finance and its premises, through the lived experiences of climate finance in two developing countries in the Asia Pacific region, Fiji and Indonesia.

It is important at the outset to acknowledge that the definitional parameters of climate finance are contested and blurred [10] as are methods of tracking and quantifying its flows [11]. Broader articulations of climate finance conceptualise it as 'the realm of all investments that target climate change mitigation, adaptation or geoengineering projects' [12] (p. 154). Areas of definitional narrowing approaches see climate finance connoting a particular relational dynamic, for example, as flows of finance from industrialised to developing countries [13]. Sayegh [12] proposes a more narrowly defined conception of climate finance, one which internalises the notion of justice: 'it is the portion of all transfers and funds of climate finance, as described, which should be implemented following the interpretation of principles of justice' (p. 154).

The nebulous boundaries and rhetorical homogenisation of climate finance without distinguishing its various sources is problematic for several reasons. For one, an increasing number of studies show that the type of climate finance in operation can have material justice implications [7,12,14,15]. For example, Bracking argues that bonds and insurance products could '…act both as a firewall and fetish to protect against encroaching reality and provide a new means of providing debt-based finance to entities often already in ecological and financial deficit.' [14] (p. 259). Further, scholars posit that with certain climate finance mechanisms the benefits are unjustly allocated: "frequently the 'winners' of financialized climate governance are neoliberal institutions, and other entities promoting market-based strategies for climate mitigation and adaptation" [4] (p. 248). In this paper, we explore climate finance primarily in two manifestations most salient in the case countries. First, we look at private finance largely as bank finance for climate related projects. Second, we interrogate disbursements from climate funds such as the Green Climate Fund (GCF). We acknowledge that within these sources there is still significant financial diversity; for example, the GCF funding structures may include both grants and concessional loans.

Against this backdrop, this article examines the complex realities of climate finance when it flows into recipient countries using the case studies in Fiji and Indonesia. Both countries confront complex dilemmas and inequalities with the arrival of climate finance, and aspects of their experiences are likely to resonate across multiple other countries in the region as key recipients of climate finance. Our empirical exploration not only examines multi-scalar experiences of climate finance at the national, subnational and local level but also interrogates various justice implications of the mobilization of climate finance to deliver low carbon energy. In doing so, the study further investigates how the high-level claims of climate finance's character and benefits are manifesting in practice.

The article aims to make empirical and theoretical contributions. Empirically, through sustained fieldwork in both Fiji and Indonesia, the study contributes grounded empirics to a region where the effects of climate finance remain understudied. Theoretically, the article aims to contribute to the emerging literature on climate justice finance through a bottom-up approach in investigating the deployment of climate finance in the Global South, particularly with regards to renewable energy development. Through these contributions, the paper also raises policy implications with a view towards steering climate finance towards more socially just operation in the Asia-Pacific region.

This article is organized as follows. Section 2 frames our research by setting out the key analytical framework through which we explore the intersections of climate finance, its premises and justice. It is followed by an overview of the empirical context of climate finance and transition to low carbon energy in Fiji and Indonesia. Section 4 describes our data collection methods. The fifth section provides our key findings in Fiji and Indonesia. Drawing on these findings, the article discusses key implications on contemporary issues and debates on climate finance justice.

2. Analytical frameworks

2.1. Climate finance and energy transitions in the Global South

This article engages two processes. Firstly, key propositions of climate finance will be 'reality checked.' This analytic intervention has already begun in the literature at the systems level of analysis yielding concerning insights on the efficacy of climate finance [14,16]. In contrast to these studies, our process will use grounded ethnographic research in two Global South countries to unsettle claims regarding the purported benefits of climate finance. Secondly, we analyse the experiences of these two countries against grounded, emergent notions of justice. Using justice as a framework further enables a piecing together of the material effects of climate finance on the ground. These processes aim to facilitate understandings of Global South experiences of climate finance, unmuddied by illusory promises.

A key element of our approach is centring the empirical findings from the Global South in both analytic processes employed in this paper. As highlighted previously, relational conceptions of climate finance situate developing nations as key recipients of financing [13]. While the discursive politics surrounding climate change, climate justice, and energy transitions have been highlighted in the developing country context [17]; the Global South remains underrepresented in climate finance literature, despite emerging contributions [7,15,19–23]. For example, a review on sustainable finance literature found that approximately 39% of studies focused on the Global North as opposed to only 6% on the Global South [23]. Beyond these broad disparities, analysis of the implications of climate finance at the national, subnational and local level in developing countries remains scarce. Turning to energy, the other loci of analysis in the paper, scholars note a 'striking' lack of sociotechnical analysis of energy transitions in the Global South [24] (p. 91). Cholibois [7] also highlights the lacunae in studies on energy transitions in developing countries, particularly to investigate 'the potential repercussions that different forms of financing could have on the equality of energy access in the developing world' (p. 350). Addressing these pressing gaps is key to interrogating the efficacy of climate financing.

2.2. Climate finance promises and Global South realities

In order to 'reality check' climate finance, we must lay out its promise, that is, what it purports to deliver. The need to unpack the premises and promises of climate finance is validated by emergent work highlighting discord between climate finance and its proposed benefits. In a recent contribution, Bracking investigates the efficacy of climate finance by unsettling some key climate finance propositions including claims of public good, accountability and innovation [14]. Our paper further unpacks additional premises of climate finance that have particular salience on a subnational and local level. These premises were noted as particularly salient due to the synergies identified between the knowledge production of key climate finance organizations such as multilateral development banks, and climate finance actors operating in both case countries.

Firstly, climate finance is presented as a driver of considerable economic opportunity, opening up new markets for the private sector. The International Finance Corporation (IFC), for example estimates that the Nationally Determined Contributions (NDC) of 21 emerging market economies alone represent $23 trillion by 2030 in investment

opportunities. Secondly, climate finance and investment are presented as congruent with mainstream commercial logic that could generate attractive investment returns. In terms of local benefits, climate finance purports to deliver various social benefits alongside climate mitigation and adaptation. Indeed, the third claim is that local job creation is a key co-benefit in tandem with climate change mitigation. Fourthly, climate finance broadly asserts its capacity to reduce the impact of climate change on the poor [25].

This paper will centre the experiences of two Global South countries, Indonesia and Fiji, in unsettling these key premises. This bottom-up approach to climate finance is also paramount to developing grounded understandings of climate finance [26] and, in particular, highlighting issues of equity and justice emergent in a subnational and local, rather than an international, level. Until the benefits of climate finance, especially in terms of equity and justice, can be empirically grounded in the developing world context, the discursive claims of high-level climate finance agents will remain unchecked, and the lived implications of climate finance will remain nebulous.

2.3. Emerging issues of justice and climate finance in the Global South

After determining whether climate finance's premises are found illusionary on the ground, we aim to piece together and highlight some of its key effects experienced in Fiji and Indonesia. In particular, we are interested in highlighting the ways various forms of (in)justices are manifesting surrounding climate finance and energy transitions. Justice is used as a key analytic here due to its salience in the relational underpinnings of climate finance. In guiding these analytic endeavours, we will draw from notions of justice that are enlivened in our case studies, particularly the notion of climate justice finance.

Climate justice finance is an emergent concept linked to but distinct from the established literature on climate justice. One aspect of the associated debate on climate justice finance reflects the problem of 'historical responsibility' [12,27–29]. This acknowledges that climate change is disproportionately affecting the Global South, which also, historically has contributed significantly less to GHG emissions [28–30]. The further relevant argument raised by climate justice finance is that of capacity. Scholars argue that countries have differentiated abilities to adapt and mitigate to climate change and further posit that greater abilities here tend to stem from the benefits derived from past emissions [12]. Thus 'affluent nations today have a duty to solve the problem of climate change and to help those that cannot do it alone' [12] (p. 156). In the case of Small Island Developing States (SIDS), for example, scholars find that domestic resources fall short of meeting climate adaptation and mitigation needs, and thus SIDS are reliant on foreign markets and finance [31].

In this way, the 'justice' groundings of climate justice finance raise important questions. For one, both foundations highlight the need for the availability of climate finance in the Global South [12,30]. A regional study of the Asia Pacific region's access to funds such as the GCF, however, highlights perversions of climate justice finance, in that some of the most vulnerable nations of the Pacific face immutable barriers to access [18]. In our study, we draw the question of availability from the global level of analysis into the sub-national and local level, interrogating dynamics surrounding access to climate finance in Fiji and Indonesia. Secondly, current work on climate justice finance highlights the discordance with particular sources and principles of justice; for example, scholars argue that debt based climate finance is in tension with moral rationales, grounded in historic responsibility [12,32]. These issues will guide our explorations of the data.

Further, emerging work on the implications of climate finance in developing countries illuminates important grounded questions of justice and equity that have not been captured in high-level climate finance discourses [7,15,22,33,34]. While some have explored the risk of climate finance maldevelopment in a macroeconomic sense [31], country level analysis will generate a more nuanced understanding on relational dynamics that can reveal key loci of inequality. For example, Cholibois [7] highlights how certain modes of financing may exclude the majority of Madagascar's rural population from the benefits of electrification. Sauls' study on the climate finance justice in Mesoamerica reveals how the requirements for legibility—becoming 'fundable'—may hamper transformative pathways to justice [15]. This issue of becoming 'fundable' or 'ready' has been a particular issue in the Pacific where 'readiness' for climate finance and renewable energy deployment has subverted or justified limited access to renewable energy infrastructure and finance [19,35]. In exploring financialisation and low carbon pathways in both developed and developing nations, Sovacool et al. [36] note how existing inequalities, exclusion and injustice may be perpetuated. Further, scholars use the principle of intersectionality to interrogate the way energy development may map on to existing marginalisations [37].

Evolving case studies at this level highlight various critical dynamics enlivened by climate finance, including the interaction between climate finance and existing power structures, and the resultant ramifications for social equity and ecosystems (e.g. [33,38]). Further, such studies can de-homogenise climate finance claims by highlighting the social implications of various forms of climate finance [7,39]. Issues of scale, technological preferences and mutually reinforcing barriers emerge as transformative issues, findings which also guide our explorations of the data [7,40]. These partial, messy, and emergent justice questions rooted in climate, climate finance and energy justice literature will inform the reconstructive analytical approach. Through this analysis we interrogate whether, in what ways and in which spaces climate finance is enlivening (in)justice.

3. Climate finance in Fiji and Indonesia

The climate crisis has already arrived in Pacific Small Island Developing States. It manifests in rising seas, extreme weather events, loss of arable lands and sinking islands [41]. In response to these lived experiences with climate change, Pacific leaders, including those of Fiji, have committed to ambitious climate goals under the Paris Agreement. A particular locus of transformation has been in Pacific energy sectors; Fiji, for one, has committed to nearing 100% renewables by 2030 [42]. These goals, however, have been contingent on finance. Climate finance has thus been a regional priority; Fiji drew the issue of financing into central focus in its Presidency of COP23. However, acquiring finance of the scale and type necessary to address the climate crisis has been problematic at best. Securing accreditation to access funds under the GCF, for example, was an enormously challenging process [18].

Like Fiji, Indonesia has also been impacted by climate change with more frequent extreme weather events, heat waves, floods and prolonged droughts. The country is frequently swept by forest fires, making it one of the world's biggest contributors of carbon emissions from the forest and land use-based sector [43]. Under the Paris Agreement, Indonesia has committed to address climate change with its Nationally Determined Commitment (NDC) for greenhouse gas emissions of 29% by 2030 or 41% conditional on international support [44]. In the energy sector, Indonesia has committed to achieving a 23% renewable energy mix by 2025. These commitments, if they are to have any chance of being delivered on, must be underpinned by the mobilization of climate finance from international sources. The country needs an estimated USD 247 billion by 2030 to meet its NDC target of reducing greenhouse gas emissions, much of which will come from private climate finance. However, recent research reveals that only about USD 13.2 billion in private climate finance has been mobilized during 2015–2018 [45]. Although Indonesia receives a relatively large proportion of climate mitigation fund financing, the funding is likely to make little more than minimal contribution to the country's transition to low carbon development.

4. Methods

In response to calls for 'human centric' methods in energy studies research [46–48] this paper is informed by empirical data drawn from multi-sited ethnographies from local to national scale in Fiji and in Indonesia. The exploratory, qualitative work is guided by some features of the Eisenhardt method for multi-case theory-building: this allows for not only the contribution of empirical experiences of climate finance, but also the development of theory on the nature of climate finance emerging from the findings in the Global South [49,50]. As a start, the paper explores two research questions: firstly, to what extent are climate finance's premises retaining validity in the Global South? Secondly, what forms of (in)justices are enlivened through the operation of climate finance in the Global South? These questions are conducive to theory building, as they are ones without an obvious answer [49]; this is due to the underrepresentation of developing nation perspectives on climate finance and energy transitions in the literature [7,37].

In mobilizing this analysis, careful case selection is critical. The motivation for the theoretical sampling is exploratory, in which Indonesia and Fiji cases have been selected as polar types [49]. Similar to Seawright and Gerring's rationale, polar types are chosen for their extremes, while remaining consistent in various respects [51]. Here Fiji and Indonesia share many similar aspects, including both being archipelagic, developing nations in Asia and the Pacific, and both having the challenge of reaching and electrifying remote communities. Further the salience of monopolistic electricity utilities was clear in both case countries. A key divergence between both cases is particularly on the scale of population and economy: Indonesia is far more populous, the biggest economy of the Southeast Asia region with a much larger private sector than Fiji. Given the focus of climate finance on market potential, this divergence is a key variable. Due to the demands of ethnographic work, we have confined the case selection to two as have others who have applied the multi-case theory building approach [49,52].

In collecting the data, we employed two methods: first, we carried out interviews with various key informants in Fiji and Indonesia (see Annex 1 for stakeholder breakdown) and field observation. In Fiji, cumulatively 6 months were spent in the field, with 79 interviews conducted between August 2018–March 2020. Participants were selected based on their current or past involvement in climate finance and renewable energy projects and recruitment occurred through the snowball technique. Field observation, semi-structured interviews and Talanoa were conducted with various stakeholders at three key sites in Fiji: Suva, Ovalau and island X[1] as well as in Canberra and Sydney, Australia. The Pacific methodology of Talanoa was used where appropriate: Talanoa is a relational methodology, and a cultural discursive practice, which requires a shared emotionality and a strong sense of empathy [53]. In Indonesia, interviews were carried out in Jakarta and two selected study sites with 64 participants who have been directly or indirectly involved in policy and projects on climate finance (with a focus on renewable energy) at national and sub-national levels during March 2019 – Feb 2020. We also carried out field observations on renewable energy projects in Sumba Island, Nusa Tenggara Timur Province and Sidenreng Rappang District, South Sulawesi Province. Both cases are located in the eastern part of Indonesia, which are among areas with the lowest electrification rate.

Second, the qualitative interviews were complemented by a detailed analysis of government documents, including policy and regulations, media and other articles on renewable energy and climate finance in Indonesia and Fiji. Documents were mainly accessed through web searches, and some were shared or suggested by interviewees. The collected data sets were analysed using content and discourse analysis [54]. The data from interviews and documents were coded and analysed to identify emerging themes and key ideas particularly related to climate finance justice and to explore their connections, (in)consistencies, and contradictions [55]. Some key emerging themes include: access to finance, on-grid vs. off-grid, preference of scale and technological hierarchies, and co-benefits. These developing themes guide us when carrying out the process of exploring the manifestations of (in)justice that emerge from findings (see Section 2.2). Credibility, trustworthiness, and reliability of the data collected were ensured through triangulation, which includes using several types of data collection (secondary and primary data) and relying on multiple interviewees to address similar questions.

5. Findings

5.1. Access to finance

In both countries, access to climate funds has proven to be challenging. Fiji, lacking robust capital markets, largely relies on the commercial banking sector for finance. Interactions between private sector renewable energy actors in Fiji and commercial banks have been fraught: participants note both serious barriers to accessing finance and high capital costs. One board member of a renewable energy start-up noted, 'Banks saw us as risky' (August 2018). These difficulties in securing commercial finance from banks were consistently reported across private sector participants. Requirements for collateral were recorded to be discordant with profiles of renewable energy companies in Fiji: 'Here, a small business can take on huge projects. What happens is the size of the projects is greater than the equity of the company which can be an issue for the commercial banks' (representative of renewable energy company, August 2018).

In response to this challenge, The Reserve Bank of Fiji implemented a 2% mandatory minimum loan disbursement requirement to benefit renewable energy, yet various participants suspect that this has generated poor compliance. The participant perspectives demonstrate that both incentives and mandates have had mixed results in compelling the banking sector to support Fiji's energy transition.

Further, access to climate funds such as the GGF has proven difficult for Pacific nations. The Fiji Development Bank (FDB) was the first national entity in the Pacific region to be accredited for direct access to the GCF in 2017, and was approved for 'micro' access, which provides for projected project costs up to USD 10 million. The process of accreditation was noted to be difficult. '[FDB] started the accreditation process in 2015. It was a lengthy and cumbersome process. Readying for climate finance is a huge challenge. There's financial challenges, policy, governance, rules, legislation to prepare on the readiness side' (government representative, August 2018). A further dimension for consideration is a preference for the provision of loans rather than grants. Participants noted this trend in the GCF; one representative from an international finance institute (MFI) pointed out that the GCF was 'happy to loan, as opposed to grant' (August 2018). This puts the practice of the GCF in line with that of other international financial institutes operating in Fiji. Indeed, the 5 million USD the GCF has approved for Ovalau's Agro Photovoltaic project, its first national project, constitutes USD 3.9 million in loan financing and only USD 1.1 million in grant finance [56].

Access to climate finance was perceived to be out of reach of smaller companies, both in terms of the scale of the finance available, and the administrative process of access. One representative of a private sector peak body noted (November 2018):

> The private companies know that they have absolutely no hope of getting climate finance. But the biggest issue is that the minimum that can be applied for is a million; this is way too much for SMEs [Small and Medium Enterprises] here. It's impossible for most members to apply for this…And they generally have to recruit someone external to do this paperwork for you.

Further, participants noted that important players, such as NGOs and

[1] Cited thus to preserve anonymity.

communities did not have pathways of accessing climate finance: 'it is the communities that are the most vulnerable and they have no opportunity to tap into some of this funding' (representative from Regional Organisation, October 2019). Overall, participants across sectors perceived climate finance funds to be generally inaccessible, and unlikely to be a tangible reality in their operations in the near future.

In Indonesia, gaining access to available funding sources is also challenging despite the plethora of funding options from loans and international development grants [57]. In practice, there are very few funding options. As in Fiji, the Indonesian financial market is dominated by the banking sector comprising approximately 79.8% of total assets [57]. The Indonesia banking sector typically relies on short-term deposits and sets an average loan tenor of only 8 years. However, renewable energy investment generally requires funding over a much longer term, manifesting a key area of discord. Interviews with financial institutions also suggest that banks remain reluctant to provide longer loan tenors due to the perception of high risks in investing in renewable energy projects, likely attributable to a lack of capacity and experience in financing such projects. The adverse risk perception is reinforced by the uncertain regulatory environment in the renewable energy sector and multiple misaligned government policies [22,59].

Indonesia also experiences difficulties accessing finance from international sources such as the GCF. Currently, there is only one GCF accredited national institution in Indonesia, PT SMI, the state-owned infrastructure company. As of 2020, Indonesia has received GCF funding for three climate mitigation projects with a total value of 212.9 million that include a geothermal project, REDD+ and blended finance for renewable energy infrastructure. With the exception of the REDD+ initiatives funded through grants, the other projects are largely co-financed with debt and equity instruments. Participants contend that accessing the fund requires long and arduous processes. An interview with an international organization representative sums up key challenges for accessing GCF funding (January 2020):

> Accessing GCF fund could take a very long time, 2–3 years or longer, because it needs to fit the format required by GCF. It is often not viable for many project developers as they expect to kick off projects in the second year. Moreover, many local institutions do not have the capacity to fulfil the rigid requirements that are hard to comply. Another layer of obstacles is that only accredited institutions could access the fund.

The statement above illustrates how the mechanisms for accessing climate finance have favoured national and international accredited institutions while creating significant obstacles for local organizations and project developers.

5.2. On-grid vs. off-grid

In Fiji, a key finding in the data is a preference on the part of financiers and developers for on-grid as opposed to off-grid opportunities. One private sector actor noted this dynamic: 'the focus is currently on on-grid' (private sector representative, August 2018). There are social implications of this imbalance. Given Fiji's remote island geography, grid connected electricity supply is concentrated in urban centres whereas grid extension is unfeasible in more rural and remote areas. In this way, off-grid projects in Fiji are linked to the important social agenda of rural electrification. Traditionally in Fiji, rural electrification has primarily been carried out through public and development administration and finance. The private sector has been involved at various junctures, particularly through the energy service company (ESCO) model. This program, however, reportedly yielded mixed results.

Interviews across stakeholder groups highlighted the importance of rural electrification projects having a 'commercial aspect.' A rationale provided for this was the importance of linking the payment of fees to the maintenance of infrastructure:

> If you talk to communities about their electrification and they get electricity to support an income, they will pay for the system. The private sector is important, because making these systems commercial is important. If the systems are commercial, people will be more likely to take care of the systems. It also has the added benefit of moving us away from a donor driven economy.
>
> Energy sector consultant (August 2018)

Private investment in off-grid opportunities, however, is disincentivised by various factors. For example, logistical challenges of shipping expertise and materials to remote locations raise initial capital costs. Further, the lengthy dealings surrounding customary land and consultation practices can also raise up-front costs.

Participants, however, noted unique challenges linked to on-grid investment and private sector participation that are mitigated in off-grid projects. For one, potential Independent Power Producers (IPPs) have noted the difficultly in negotiating with the state utility company (Energy Fiji Limited/EFL) currently in the process of being corporatized. At the time of research, there was only one truly independent IPP signed in Fiji (two others were with state owned companies), a biomass plant in Nabua. Due to feedstock issues, however, this plant was not operational during the research period. The finding reveals significant private investment interest in on-grid renewable generation that is extinguished by these political and institutional barriers. In Fiji, the utility does not have jurisdiction over rural areas, and thus off-grid generation opportunities potentially offer smoother pathways for negotiation.

As an archipelagic nation with 17,000 islands, Indonesia needs multiple approaches to provide electricity to its population, which could include various combinations of on-grid and off-grid solutions. In the places where logistical problems and a sparsely distributed population preclude grid-based solutions, small scale, off-grid and distributed renewable technologies offer a cost-effective means to provide access to energy with low climate impacts [22,60]. Yet, the data shows persistent modes of centralized electrification that prioritise on-grid rather than off-grid solutions [33]. Small-scale and off-grid renewable energy systems installed remain minimal compared to that of on-grid renewables [60].

The existing regulatory frameworks make it hard to establish off-grid-power plants. The electricity law 30/2009 stipulates that the market jurisdiction (*wilayah bisnis*) of the state-owned electricity company, Perusahaan Listrik Negara (PLN), covers the entire country. All private entities who wish to establish off-grid plants will be required to obtain a permit from the government in coordination with PLN, which will require PLN to release a particular area from its market jurisdiction. Some cases show that persuading PLN to release areas from its market jurisdiction proves to be challenging. For example, an off-grid rural electrification initiative in Sumba Island involved protracted negotiations between the project proponents and PLN to convince the company to release the area for an off-grid solar plant. According to a local government representative (March 2019),

> We chose the location for establishing an off-grid plant powered by solar covering five villages because it was not a priority area for PLN's electrification project. However, it changed after the national government set a target for PLN on rural electrification that made PLN refused to release those villages [from its market jurisdiction]. It was a long and difficult negotiation. PLN finally released some parts of these areas, and a private company has built the solar power plant. But you see, other areas targeted by PLN remain without electricity to date.

Due to substantial challenges to establish off-grid renewables, only a handful of them have been granted the permit so far, and those approved are mostly from large-scale industries.

5.3. Preference in scale and technological hierarchies

The findings suggest that there is preference in scale[2] of the projects and renewable technologies. In Fiji, private investment is key to the attainment of mitigation goals in the energy sector; financing needs are estimated at US$ 2.97 billion from 2017 to 2030 [42]. However, challenges of scale, in terms of the size of the investment opportunity, are also important. Both in Fiji and elsewhere in the Pacific, issues of investment scale are invariably cited as barriers to attracting private sector investment, 'At the moment, the private sector sees the Pacific as too small, too risky. They need things like sovereign guarantees. And not every government is able to provide it' (regional energy association representative, October 2018). One financial sector actor also noted the issue of scale: 'A lot of projects are small. So, you either need a warehouse facility to bundle them together, or you need a cookie cutter mould to project planning and delivery' (Development Bank representative, August 2018). Participants with extensive Pacific experience, caution against the latter strategy. The 'cookie cutter' approach is ill-adapted to the Fijian context because of the need to consult with diverse communities, the various protocols surrounding customary land, and various social, cultural, and economic needs across the nation.

Several participants raised the suggestion for regional scaling to address small-scale opportunities within national boundaries: 'Regional projects are more attractive than national scale' (impact investor, December 2019). Yet, participants also note that despite the theoretical opportunities regional scaling may provide, in practice navigating regional politics, regulatory differences and other complexities would be difficult (Regional Organisation, October 2019).

> [The utility] is difficult and are often unwilling to work with IPPs because they essentially want to control the type of contract… They put huge storage requirements in- which makes the feasibility for IPPs low. They want to guarantee 24 hours power from solar.

In Indonesia, interviews reveal that private climate finance sources currently flow to large-scale projects that enable the project developers to generate reasonable investment returns. One of the reasons is the current regulatory framework (MEMR 50/2017) that stipulates a geographically differentiated price structure and price cap in renewable energy sources (except for hydro and geothermal). Consequently, only those who wish to develop renewable projects at a significant scale are likely to be capable of bringing the cost under the regulated price and make a reasonable investment return. Project developers also favour large-scale projects. As one developer describes, 'everything is good for us as long as we have big scale projects…we need scale for investment return' (March 2019). The current regulatory regime imposes substantial obstacles on SMEs seeking investment for small and medium scale renewable energy projects by making them too costly to be feasible and by cutting off viable sources of finance. This is evidenced in the Power Purchase Agreements (PPAs) negotiations between PLN and project developers during 2017–2018, in which only 27 out of 78 PPAs could reach financial close. The majority of those that could not meet financial close were mini-hydro projects accounting for 23 PPAs [62].

An interview with a financial institution championing blended finance reveals that despite the opportunity to combine the different financial sources for financing a variety of project scales, the institution still favours funding large scale projects:

> We are talking from the perspective of commercial lenders. We want to help small and medium enterprises for smaller scale projects. But we need to remember, the costs for due diligence for such projects are quite similar [to that of large-scale projects], and they are not cheap. Therefore, we need to prioritize which projects to choose. Prioritizing large-scale projects could help us achieving our spending target for lending.
>
> Financial institution representative (April 2019)

This finding reaffirms previous studies that show that a purely market-based approach results in often insurmountable funding gaps for small-scale projects [7,39].

The current trend of climate finance flowing to large-scale projects results in a disparity of electrification between urban and rural areas. The large scale and on-grid power plants are often located in areas with a high-density population and in urban settings. It is not surprising that most of the areas remaining without electricity are located in rural areas and outlying islands.

Clear technological preferences on the part of the utility are also evidenced in Indonesia. Despite the government's ambition to increase the renewable energy mix target, the government's procurement plans reveal that the installed capacity of coal plants in the country is expected to nearly double from the current 28 GW [63]. Coal will remain dominant in the energy mix at 55% by 2025. This situation can be attributed to PLN's deep commitment to fossil fuel-based power generation and resistance to change as well as vested interests and rent seeking in fossil fuel industries that continue shaping the country's energy decisions [58]. This situation is exacerbated by the dominant perception among the financial institutions that still consider coal the 'cheapest' energy source, hence increasing the perception of bankability of the coal power plant projects [21].

In terms of renewable energy technologies, the interviews in Indonesia reveal that large hydropower and geothermal projects are prioritised to the disadvantage of the other renewable energy sources. While solar and wind hold significant potential as renewable energy sources, key participants in the state-owned electricity company suggest that these renewable technologies remain disadvantaged because of their perceived high costs per kwh (compared to coal) and intermittence. They also argued that PLN's obsolete grid infrastructure, particularly in the eastern part of Indonesia, result in the grids being incapable of accommodating intermittent renewable energy sources (group interview April 2019).

5.4. Co-benefits

A key potential co-benefit of climate finance for renewable energy development was that rural electrification had the potential to enliven local economies. At one field site in Fiji, we observed a community's experience with electrification. Here, the community received a level of electrification that was too low to power freezers. As a key industry on this island is diving for seafood, freezers would have allowed the divers to transport their products to more competitive markets. The community was thus disappointed with the lack of electrification received, which failed to enliven local economic aspirations (community representatives, March 2020). This finding observed at a field site was reinforced by participants who noted patterns of low or inconsistent electrification in rural areas in Fiji.

The interviews also revealed the complex relationship between climate finance and local job growth. For one, a practice of relying on external, international consultants to meet new sectoral needs, such as climate finance reporting, policy and project development, was noted. The creation of new skilled work around renewable energy infrastructure was often hampered by poor training and knowledge transfer. This was particularly relevant in rural areas where the poor training of local technicians was highlighted as a key issue. In Fiji, training local technicians to operate and maintain the systems is by far the most cost-effective and sustainable option. While this is increasingly acknowledged, practices of training have been inconsistent. One community

[2] Scale is understood as the material size of energy technologies and the levels of energy governance and their interconnected relations (i.e. local, national, regional, and global) [61]. Here, we specifically use the notion of scale in terms of scale of energy projects and the size of investment opportunities.

technician responsible for the operation and maintenance of the entire community's energy infrastructure noted that his training had lasted 'fifteen, twenty minutes' (community technician, March 2020). In sum, climate finance has not consistently led to increased knowledge transfers or increased economic activity in Fiji.

As in Fiji, there is a widely held assumption that there are co-benefits in mobilizing climate finance for renewable energy, namely that doing so will facilitate not just electricity provision but also local economic development in Indonesia. For renewable rural electrification, for instance, one study suggests that it should be considered as an initiative that improves local development rather than one purely concerned with electricity provision [21]. Harnessing new economic opportunities could increase communities' capacity to pay for electricity, with such an assurance serving to enhance the viability of the renewable energy investment. Yet, participants suggest that such an assumption may be incorrect, because renewable rural electrification would not immediately yield economic development without providing necessary supports to improve local economic activities. As a representative of development aid organization puts it (April 2019),

> One of the premises for financing renewable electrification is for improving local development, alleviating poverty, etc. For this to happen, the communities need to use electricity not only for consumption but also for productive activities. Such productive activities will enable communities to pay the electricity bills. At the same time, access to electricity is key for particular productive activities. However, this situation is like the chicken and egg problem. It is hard to choose which one needs to come first because they are all interconnected.

To generate local economic opportunities and employment, the Indonesian government attempts to boost local renewable enterprises by stipulating protectionist policies. For instance, it sets up a 5 percent tariff on imported solar panel and requires around 40% of goods and service inputs to grid-connected solar PV project to be locally sourced local content [64]. However, interviews reveal that there is a mismatch between the ambition to support local enterprises and available supports to enable local renewable energy industries to fulfil such demands. Moreover, the current procurement and bidding processes for renewable energy projects require all companies to be listed in a registry established by PLN through lengthy and unclear screening processes [33]. These processes have excluded domestic and small-scale project developers with limited financial resources and experience in implementing renewable energy projects, although some have the technical capacities and qualifications to carry out such work.

6. Discussion

6.1. The definition of climate justice finance is challenged in developing contexts

The work on climate justice finance speaks primarily about relationalities on a global scale rather than subnational or locally. The emergent concept draws on the rationale of the historic responsibly and capacity of Northern vis-à-vis Southern countries. The findings from both case countries problematize the notion of climate justice finance in two ways: firstly, through the type of finance being offered; secondly, through the actual (rather than promised) mobilization of finance from the North to South.

As to the former issue, the type of finance mobilized in both nations' GCF projects consisted largely of debt finance. This correlates with the climate finance experience in Madagascar: the "GCF, originally mandated to provide financing to those countries without the means to obtain it elsewhere, is increasingly employing a 'banker's logic', … providing funding exclusively to the least risky projects that can offer secure and predictable returns" [7] (p. 359). Materially, if this funding source is indeed shifting towards prioritising commercially viable projects, critical non-bankable projects may be deprioritised. Here, the developing context has direct epistemic ramifications on high-level discussions on climate finance's character. Sayegh, for example, argues that loans cannot constitute climate justice finance as they 'do not serve the purpose of justice following the basic principles of historical responsibility and capacity' [12] (p. 159). As to the second issue of actual availability, very few nationally accredited GCF renewable energy projects have been approved. The limits of GCF disbursements in both countries prompt a question on the articulations of global climate finance justice premised on the actual flows from the Global North to South [12]. The injustice of the limited disbursement is further exacerbated by the resources and time spent in both countries in pursuing access.

In sum, there is significant discord between the experience of developing nations with climate funds and the emerging definitional concept of climate justice finance. That said, we argue that this concept itself mobilizes a too narrow exploration of justice, one located between states, manifesting within a binary North-South relationality [12,13]. Emerging work on climate finance located on a subnational level and local level contributes to a deeper understanding of the notion of justice and we call for further empirical and theoretical work in this space [7,15,33].

6.2. The premises of climate finance are largely illusory when tested in a developing context

We have explored the realities of key sources of climate finance, including climate funds (e.g. the GCF, bank finance) in Fiji and Indonesia. Four premises of climate finance were investigated. Firstly, in both cases, climate finance fell short of opening up 'considerable economic opportunities' [25]; due to the tensions between the prerequisites and motivations of financing streams and the realities of renewable energy development in the context of developing countries. The access requirements of the GCF barred various stakeholders and hindered the flow of climate finance into both countries. The risk tolerances and preferences for large scale investments on the part of both banks and other private investors also conflicted with the profiles of the opportunities offered in both nations, again, leading to barriers to access rather than openings of financial opportunity. Contrary to the second premise, the case studies demonstrated how climate finance is, in many ways, incongruent with mainstream commercial logic [25]. This discord stems from the mismatch in commercial lending tenors with renewable energy developments, perceptions of risk augmented by regulatory environments, and the preference for large scale investments rather than small scale investments, particularly that of discreet distributed systems necessary for electrifying remote archipelagic nations.

Given these barriers, it is perhaps unsurprising that climate finance is not having a transformative effect on job creation, the third premise. As both case studies demonstrate, climate finance's promise to stimulate local economies is more complex and contested. In Indonesia, regulatory efforts to support local renewable enterprise have been hampered by a lack of accompanying support mechanisms. In Fiji, the new sectoral opportunities opened up by climate finance, including the labour involved in accessing funds, is often outsourced, in particular to international consultants. SMEs are also deprioritised through constructions of risk, in favour of bigger players. This has serious implications for the health of this sector and draws into question high-level climate finance claims of job creation. Indeed, co-benefits are not inherent in climate finance. Rather, they must be prioritised and built in. Climate finance has also not had the promised effect on the 'poor' [25]. In both countries, already marginalised rural communities often fell out of scope for climate finance's benefits due to the risk and lack of profit they reflected.

6.3. The operation of climate finance can perpetuate existing marginalisation, exclusions and injustices

The case studies have highlighted the way in which climate finance may reinforce a lack of recognition and exclusions. Indeed, issues of justice and exclusion are salient in the experience of both case countries with access to climate funds, particularly the GCF. Yet, as with the exclusions highlighted by Cholibois [7] in Madagascar's experience with private climate finance, exclusions in Fiji and Indonesia continue to materialise subnational and locally. The analysis of both case studies reveals limited and unbalanced access to climate funds such as the GCF, with some groups and projects experiencing systemic disadvantage. In the Indonesia case, local organizations and project developers experienced high levels of exclusion. In Fiji, climate finance for SMEs is out of reach, while access pathways for communities and NGOs remain minimal or blocked entirely.

Our study shows that off-grid renewable rural electrification could be a site of potential inequity and marginalisation. Both case studies demonstrate off-grid rural electrification often falls outside bankable parameters, thus matching such projects with willing finance is difficult as climate finance is increasingly prioritising commercial viability. This is exacerbated by the ramifications of scale: the small scale of rural electrification opportunities often draws it outside the scope of various climate finance opportunities. Access to appropriate finance is vital to the success of rural electrification. The Fijian case can be distinguished from other studies (e.g. [7]) in finding that a level of private participation in rural electrification is key to positive and sustainable energy outcomes. The findings in both cases support the contention that the type of climate finance matters in delivering socially equitable outcomes [7,39].

The lack of appropriate pathways by which communities may gain access to climate funds has important implications for issues of equity and justice, particularly of participation. As communities in both countries are at the coalface of climate change, a lack of direct access to finance places their fates in the hands of ‘fundable’ stakeholders, including donors. A recent study shows that communities' connection with climate finance may be a site of important, more nuanced visions of participatory justice contended on the grounds of ‘past injustices, ongoing threats, and a simple right to exist’ [15] (p. 321). Further, the purview of powerful entities over rural areas may block the flows of climate finance, resulting in exclusion and deprivation, as highlighted in the Indonesian rural communities which have not been released from PLN's market jurisdiction, yet remain without electricity access. These exclusions resonate with processes noted in the energy justice literature which highlight the victims of renewable transitions [65]. Finally, key co-benefits envisioned by both high-level climate finance discourse and national hopes, are reality checked in rural areas. Climate finance does not necessarily help the energy poor. Further, both countries revealed practices of rural electrification that indeed do not support communities' economic aspirations, particularly through the provision of unreliable electricity.

This raises important justice issues, particularly that of recognition [15,33,37]. Here, the operation of climate fundability considerations is in tension with those of equity, self-determination and recognition [15]. Sauls' study on REDD+ in Mesoamerica highlights that although certain climate finance mechanisms had made progress vis-à-vis their recognition praxis and relationalities with indigenous and local communities, these efforts require the communities to conform to ‘specific behaviours and legal forms’ that represents an ongoing imposition [15] (p. 320). In the case studies, communities are often positioned as objects of energy transitions as opposed to agents [22]; without direct access to funds they must wait to be recipients of projects administered by external actors deemed fundable. The energy justice literature also has resonances here. The conceptualisation of and intersectional principle of energy justice, an expansion of recognition justice, aptly speaks to the way energy may interact with existing fault lines of marginalisation [37]. The intersectional implications of climate finance may manifest across various axis: the issue of outsourcing green jobs and the acknowledgement of climate finance expertise in Fiji, for example, intersects with issues of racial formation [66]. The extent to which women are benefiting from the climate finance must also be considered [67]. This idea of intersectionality of energy and climate finance concerns is a cornerstone of our argument: current conditions of subjugation and marginality are key determinants of the lived effects of climate finance in the Global South.

6.4. Climate finance is mediated through existing power structures

The findings from both case studies highlight that climate finance operates within, rather than disrupts, existing power structures. The banking sector is dominant in the financial landscape of both countries, generating flow-on effects for the financing of renewable energy. In both cases, disbursement of climate finance is filtered through this sector's risk and return calculus. Scale also manifests as a critical issue for this sector where smaller scale projects and applicants are perceived as high risk and low return. Uncertain regulatory frameworks augment the perceptions of risk in Indonesia; in Fiji, perceptions of risk have endured despite efforts of incentive and regulation. Here, discourses of risk indeed have material implications, and tie into issues of scale [66,68]. Beyond the effects on risk and return, Baker et al. argues that large scale renewable developments rely on centrally maintained grids, which in turn links to loci of existing power such as ‘state actors and structures and institutions of incumbency’ [69] (p. 103). The experience of both countries appear to reflect a prioritisation noted in the literature of ‘big networks, big infrastructure and big capital’ ([70] cited in [69] (p. 103)). Our findings resonate that of Sovacool et al. [36] that shows the significance of elite processes in constructing low-carbon transitions as ‘conduits of capital’ rather than reducing carbon emissions or building human capacity to climate change (p. 11).

Further *loci* of power dynamics in both countries were the state electricity utilities, PLN and EFL. Here, the outcomes of climate finance are mediated through existing technological preferences. In Indonesia, the PLN's reliance on coal has created a barrier to robust climate finance outcomes. Moreover, both utility companies have demonstrated recalcitrance over intermittent renewable sources such as solar and wind; climate finance does little to shift these preferences. The dominance of utilities in urban centres also proves a challenge for participation and renewable energy development, though the number of IPPs in Indonesia vastly outnumbers that of Fiji. In rural areas, PLN's dominance remains, through its discretionary, thus limited release of business area. In Fiji, rural areas fall outside EFL's business jurisdiction, and this raises participatory opportunity for the private sector. Cholibois [7] notes several justice dilemmas in external actors potentially ‘leapfrogging’ national systems and structures: for one, this jeopardizes principles of ownership and inclusivity.

In both cases, the issue of scale proves salient in determining financing success. Large-scale projects are considered more likely to generate the necessary return and are thus prioritised. This exacerbates the prioritisation of on-grid as opposed off-grid projects. An interesting point of difference arises from the preferences of scale in both countries. In Indonesia, necessary scale could be met within national boundaries; in Fiji, some developers argued that attractive scale could only be found regionally. This demonstrates that climate finance may generate serious inequities by which SMEs and small projects are excluded from climate finance participation, and indeed, that the issues of scale may be so salient as to render an entire national market unattractive. Scale may also reinforce the practices and processes of the powerful [70]. Large hydropower projects' ability to absorb vast capital, for example, renders such projects highly bankable, reaffirming utility preferences and steering climate finance towards focus on capital gain rather than social and environmental justice [71]. Indeed, climate finance does not prima facie enliven participatory pathways. Rather, it is mediated through

existing power structures, which may stymy participation and could jeopardize the likelihood of the energy transition benefits will flow on to environmentally and socially just outcomes.

7. Conclusion

The article contributes to and advances emerging body of literature on climate finance justice (e.g. [4,12,15,33]) particularly in Asia and the Pacific, an area that remains underexplored. By critically interrogating multi-scalar experiences of climate finance in Fiji and Indonesia, the article contests high-level delineations of climate finance's characters and benefits (see also [14,16]) by providing a 'reality check' to claims of climate finance's ability to open up new markets for the private sector and the prima facie amenability of mainstream commercial logic to climate investments. The article also deconstructs assertions of social benefit resultant from climate finance flows. In doing so, we make space for grounded issues of justice and equity arising in the context of climate finance in the Global South. Further, we find that rather than being a 'game changer' [3], climate finance has caused little disruption to the status quo in both countries. This lack of disruption, coupled with the uneven power relations and access to resources conferred by climate finance has meant that climate finance has mapped onto, reinforced and, in some cases, exacerbated existing marginalisation, power inequalities and injustices. As such, this paper joins emerging literature critically examining climate finance, highlighting its limits as a driver of the transformation necessitated by escalating climate crisis [14,16,32].

Responding to the call for examining the (in)justice outcomes of the climate finance [4], we identify some key forms of (in)justices in both countries. These include the following: first, accessing the climate funds (e.g. GCF), involves long and arduous processes and actual finance approved remain limited. Moreover, the flows and outcomes of climate finance are mediated through existing power structures. In both countries, loci of power include the dominant state-owned utility companies and the commercial banking sector, which leads to limiting the potential benefits and beneficiaries of climate finance. Second, the prioritisation of large-scale projects also tends to result in preference for on-grid as opposed to off-grid, the reinforcement of technological preferences of powerful stakeholders, and the exclusion of smaller projects and developers. The findings have salience in the context of electrification, where the prioritisation of large scale, in turn reinforces spatial inequalities of electricity access between urban and rural communities. Third, our study also reveals that communities have limited pathways to accessing climate finance. Finally, the co-benefits of climate finance, such as the enlivening of local economies, knowledge sharing and job creation, which are key in ensuring socially just outcomes, are by no means inherent in climate finance's flows. The failure to build-in co-benefits to rural electrification results in the economic aspirations of communities being neglected. In sum, the findings from Indonesia and Fiji have elucidated that aspirational visions of climate finance as a justice mechanism and a game changer are fundamentally challenged in the Global South contexts.

While this article is based on the empirics in Fiji and Indonesia, the findings and policy implications might resonate with other developing countries aiming to access climate finance for transition to low carbon energy. We highlight key policy implications: first, to ensure the social justice outcomes of climate finance, climate funds need to develop mechanisms to mitigate the multi-scalar exclusions experienced in developing countries, particularly in the Asia Pacific region. Further, as scale was a profound issue in both cases, a priority must be developing financial products and governance innovation that can respond to and mitigate potential scalar inequalities. Finally, the targeted financial mechanisms, which are inclusive of key stakeholders, must be developed for the purpose of rural electrification. The design of these mechanisms should internalise the need for critical, intersectional co-benefit delivery.

This study bears several limitations. Given the presence of intersectionality as theme of this research, it is unfortunate that the data from both countries did not support further analysis on the implications of gender. Therefore, future studies that explicitly address the question on gender in climate finance justice will be particularly helpful to gain deeper insights on this issue. This study calls for others with the goal of generating greater focus and understanding on how climate finance justice and equity manifests and is compromised in developing countries.

CRediT authorship contribution statement

Kirsty Anantharajah: conceptualisation, research design, data collection, data analysis, writing; **Abidah Setyowati:** conceptualisation, research design, data collection, data analysis, writing.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgments

The authors are grateful to all key informants who participated in the interviews and provided their time and valuable insights. The authors also highly appreciate Prof Neil Gunningham's comments on an early draft of this manuscript. The research is benefited from the financial support of research grants from Department of Foreign Affairs and Trade (DFAT) of Australia entitled 'Harnessing Financial Markets and Institutional Investment to Increase the Take Up of Renewable Energy in Asia-Pacific' and Asia Pacific Innovation Program (APIP)-Research Excellence Award and Research Development Award, Australian National University. The second author also thanks to the project funded by the Dutch Research Council (NWO) "Regional Development Planning and Ideal Lifestyle of Future Indonesia" that partially provides time for the manuscript completion.

Annex 1. Stakeholder interview lists

Stakeholders	Interviews
Fiji	
Technical/policy consultants	16
Government representatives	11
Regional/international organization representatives	13
NGO activists/academics	8
Community representatives	6
Financial actors/regulators	5
Utility representatives	4
International financial institutions	7

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(*continued*)

Stakeholders	Interviews
Private sector representatives	9
Total	79
Indonesia	
National/subnational policy makers	15
Utility representatives	3
Banking/finance institutions	17
Renewable energy developers	10
NGOs/research institutions/community organizations	19
Total	64

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