

Title: States of Power: Energy Imaginaries and Transnational Assemblages in Norway, Nepal and Tanzania

Citation: Movik, S and Allouche, J. (2020) 'States of Power: Energy Imaginaries and Transnational Assemblages in Norway, Nepal and Tanzania', Energy Research & Social Science 67, doi:10.1016/j.erss.2020.101548

Official URL: <https://doi.org/10.1016/j.erss.2020.101548>

More details/abstract:

Support to energy, particularly hydropower, has formed an important element of many donor programmes. How have such interventions shaped the emergence of particular energy imaginaries in the countries engaged with? 'Energy imaginaries' can be understood as the set of institutions, logics, values, and visions that spur ideas around what sources of energy and forms of energy governance best foster development. Adopting a historical and comparative perspective and drawing on the notion of 'transnational assemblages', we explore the nature of energy aid interventions and the dynamic shifts of specific actors and discourses in bilateral relations. We focus on Norway, a leading player in energy support, and two of its long-term partner countries, Nepal and Tanzania. Through document analysis and interviews with key actors, we trace how Norwegian energy transnational assemblages have formed part of evolving energy imaginaries in Nepal and Tanzania in radically diverging ways. In Nepal, dominated by an energy imaginary of hydropower as 'white gold', efforts to foster a bottom-up-driven indigent energy sector were eclipsed by an emphasis on facilitating privatisation, resulting in a chaotic fragmentation of the energy landscape. In Tanzania, the donor-state energy imaginaries were centred on grandiose projects of hydropowered industrialisation bound for failure, but later revived as part of an authoritarian project. The study untangles a history of changing and partially conflicting discourses, offering a richer and more nuanced understanding than studies focused on single projects or policies. We highlight how the idea of transnational assemblages can be useful in understanding shifting imaginaries of energy development.

Version: Version of Record.

Terms of use: © 2020 The Author(s). Published by Elsevier Ltd. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

This is a download from OpenDocs at the Institute of Development Studies



States of Power: Energy Imaginaries and Transnational Assemblages in Norway, Nepal and Tanzania

Synne Movik^{a,*}, Jeremy Allouche^b

^a Department of Urban and Regional Planning, Norwegian University of Life Sciences, 1432 Aas, Norway

^b Institute of Development Studies, University of Sussex, Library Road, Brighton BN1 9RE, UK



ARTICLE INFO

Keywords:

Energy imaginaries
Assemblages
Aid
Norway
Nepal
Tanzania

ABSTRACT

Support to energy, particularly hydropower, has formed an important element of many donor programmes. How have such interventions shaped the emergence of particular energy imaginaries in the countries engaged with? ‘Energy imaginaries’ can be understood as the set of institutions, logics, values, and visions that spur ideas around what sources of energy and forms of energy governance best foster development. Adopting a historical and comparative perspective and drawing on the notion of ‘transnational assemblages’, we explore the nature of energy aid interventions and the dynamic shifts of specific actors and discourses in bilateral relations. We focus on Norway, a leading player in energy support, and two of its long-term partner countries, Nepal and Tanzania. Through document analysis and interviews with key actors, we trace how Norwegian energy transnational assemblages have formed part of evolving energy imaginaries in Nepal and Tanzania in radically diverging ways. In Nepal, dominated by an energy imaginary of hydropower as ‘white gold’, efforts to foster a bottom-up-driven indigent energy sector were eclipsed by an emphasis on facilitating privatisation, resulting in a chaotic fragmentation of the energy landscape. In Tanzania, the donor-state energy imaginaries were centred on grandiose projects of hydropowered industrialisation bound for failure, but later revived as part of an authoritarian project. The study untangles a history of changing and partially conflicting discourses, offering a richer and more nuanced understanding than studies focused on single projects or policies. We highlight how the idea of transnational assemblages can be useful in understanding shifting imaginaries of energy development.

1. Introduction

The rise of particular energy imaginaries is shaped by shifting socio-economic, political, ideological and environmental dynamics and dominant values, logics, and contingencies. Energy imaginaries refer to shared ideas about a country’s “place in the world and its modernising passage from past to future” [1, p. 6]. How energy is produced, distributed, and supplied can take a myriad of different forms, depending on the nature of the energy source and the institutional structures governing its production, transmission, and supply. Approaches range from localised and small-scale community-based strategies to grandiose projects moulded on ideas of modernisation and industrialisation, with differing emphasis on the relative roles of the state, communities, and the private sector. The concept of energy imaginaries captures the notion that energy is not just about technological systems, it is fundamentally a socio-cultural and political project, incorporating the social and physical production of energy across “types, sources, places, and time” [2, p. 2]. It provides a different understanding to energy systems

analysis, focusing more on a human-centred approach to understand energy projects [3].

Energy is a key dimension of development, and donors have played a significant part in supporting energy projects and sectoral reforms in developing countries, although aid flows have fluctuated over time [4]. While access to affordable energy is now firmly embedded in the Sustainable Development Goals (SDG7), until recently, global policy efforts in energy development have ignored how energy governance could be geared towards the needs of the poor [5–7]. It is here that the idea of energy imaginaries is useful in the sense that it forces us to explicitly consider the social and political aspects of energy systems, and shared conceptions of social meanings [Castoriadis 1975, cited in 8, p. 137]. Future imaginaries are not neutral constructs, they are framed in a certain way, with some actors having more power than others to project their imaginations [9], shaping future governance and societal conditions [10]. Like utopias, visions of energy futures are “trapped within the imaginative potentials and resources available in the contemporary socioeconomic system” [Kuchler 2014, cited in 8, p. 138]. Thus,

* Corresponding author.

E-mail addresses: synne.movik@nmbu.no (S. Movik), j.allouche@ids.ac.uk (J. Allouche).

<https://doi.org/10.1016/j.erss.2020.101548>

Received 25 September 2019; Received in revised form 29 March 2020; Accepted 1 April 2020

2214-6296/ © 2020 The Author(s). Published by Elsevier Ltd. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

imaginaries rarely represent radical departures from the past, as the representations and materialities of past and present tend to frame societies' visions of the future in profound ways [8].

Scant explicit attention has been paid to the question of how energy imaginaries in developing countries have been shaped through donor interventions and influence, which is what this article sets out to address. In responding to this question, we seek to historicise the emergence of energy imaginaries in developing countries through studying the intersections of energy development, the politics of aid, and neoliberal transformations, from a comparative perspective. We do this through focusing on a three-country case study involving Norway, Nepal, and Tanzania, aiming to shed light on the complex interlinkages between energy imaginaries, energy infrastructures, and the political economy of development aid. While the 'global form' of neoliberalism [11] gripped all three countries in the early 1990s, it played out in markedly different ways, partly due to the contingent nature of the assemblages present in each context.

Much of the literature on aid and energy development has focused on specific projects [4, 12], but less attention has been devoted to comparative approaches that elucidate the divergences of energy development policy and practices in different settings over time, and how these have meshed with existing thinking and institutional frameworks. Hence, while there is a rich literature on specific development projects, most of these studies tend to take a short-term agency focus. This points to the need, as suggested by Gilman [13, p. 5] for a historiographical approach to the study of development that combines a variety of methods and sources to "compose narratives that connect theory, policy, and action, and to do so comparatively". This call is echoed by Nusser [14] in the context of large dams, as he argues that the transformation of fluvial environments is seldom framed within the broader picture of contested development paradigms across changing historical, political, and spatial contexts. Moreover, with regard to analysing macro development processes – such as the relative roles of states and markets in development trends – Mahoney [15] points to the power of comparative-historical analysis. More generally, Hirsh and Jones [16] highlight the value of historical approaches in energy research, in particular to identify the essential role of social and cultural considerations in shaping the successes and failures of energy regimes.

Norway, a fully electrified country relying entirely on hydropower, has a long history of providing aid to developing countries for energy development, particularly hydropower. It has sustained long-term aid relations with two key partner countries, Nepal and Tanzania, since the 1960s. We sought to critically engage with and understand the ways in which the interventions in these two strategic partner countries contributed to the emergence and co-production of national energy imaginaries. This involved accommodating a complex set of actors and discourses operating across temporal and spatial scales. We found that conceptualising these sets of actors and discourses as *assemblages* was helpful in getting to grips with how these have shaped specific ideas and framings of energy over time.

We have structured the article as follows. In Section 2, we flesh out in more detail the key concepts of energy imaginaries and assemblages, and Section 3 describes the methodological approach of the research. We then go on to provide a brief overview of the Norwegian landscape of actors and discourses in aid and energy in Section 4, before moving on to focus on the rich stories of shifting assemblages and emerging energy imaginaries in Nepal and Tanzania in Sections 5 and 6 respectively. We compare and contrast these findings in Section 7, before rounding off with some concluding reflections in Section 8.

2. Energy imaginaries and transnational assemblages: a long-term comparative approach

Our analytical approach combines a focus on the emergence of particular energy imaginaries with mapping out shifting transnational energy aid assemblages in a long-term comparative perspective. Energy

imaginaries draw on the work done on socio-technical imaginaries, which can be defined as "collectively imagined forms of social life and social order reflected in the design and fulfilment of nation-specific scientific and/or technological projects" [17, p. 119]. Energy imaginaries are intimately connected with the materiality of infrastructures and energy resources, and thinking about imaginaries is helpful in denaturalising spatial relations that are often seen as fixed, as well as reflecting on questions of national identities [1, 18]. They are shaped by the sets of institutions, logics, values, and visions, giving rise to specific ideas around what sources of energy and forms of energy governance are the most optimal in terms of bringing about development (ibid.).

Studying how diverse framings of energy futures emerge and jostle for space is useful in that it brings to light how imaginaries arise and gain traction, and what the drivers of such imaginaries are [19]. The agendas and actions of international aid organisations and other actors, financial models, and resources for implementation will potentially influence government policies. It is through such interactions that particular energy discourses and practices are made "material, naturalised, and reified" [18, p. 264]. However, while the literature on energy imaginaries points to these complex sets of policies, actors, and institutions influencing the emergence of such imaginaries, there appears to be little explicit attention to how donor interventions have shaped and co-produced such collective visions.

The broader field of donor-recipient relations has received increasing attention over the past few years, with ethnographic studies of specific aid projects bringing to light the complexity of interactions and outcomes. While the anthropology of development literature offers rich empirical descriptions of the politics of development project actors [see for example 20, 21], there is still a tendency, in the strands of literature dealing more directly with aid negotiations, to portray the negotiating parties as monolithic entities. This is reflected, for instance, in the terms used to describe asymmetries of power between donors and recipients, with negotiating capital for donors and extraversion for recipients [22, 23].

In order to avoid such monolithic entities, we find it useful to draw on the notion of assemblages. Assemblages can be conceived of as "constructionist account[s] of social-spatial relations" [24, p. 125], and as "material, collective and discursive relationships" [25, p. 4]. The idea of assemblages is reminiscent of 'collections', or 'collages', but it also involves active practice, that is, the 'activity of assembling'. For example, in her work on community forestry management, Tania Murray Li focuses on the practices of assemblage, the bringing together of diverse elements of discourses, institutions, forms of expertise, and social groups, and how these different elements of assemblages are made (or not) to cohere [26]. What makes assemblages so appealing is the associated conception of power as "multiple co-existences" [27, p. 562], perceiving power as distributed, rather than centralised, raising questions about where causality and responsibility are situated [24, p. 125].

While 'assemblage' as a concept can be traced back to the work of Deleuze and Guattari [28], see also DeLanda [29], the sense in which it is used in this context is more as a descriptor [24]. Assemblage is an attractive idea, as it is so malleable [24], and it has been deployed in a diversity of ways. For instance, the idea of 'global assemblages' represents a composite term that focuses on the specificities of global forms in particular sites. Global forms can include, for example, neoliberalism, international regulations and standards, the nation, class, citizenship, democracy, or certain ethical problems [25, 27]. The notion of global assemblages offers an alternative to the binaries inherent in the categories of local and global, providing a way to eschew the binaries of 'globalisation' versus 'the national' [11], see also Siakwah's [30] work on globalised assemblages in Ghana's petroleum industry. McFarlane, in his work on social movements, coins the term 'translocal assemblages' to bypass what he sees as the scalar dissociation between local and global [27].

For the purpose of our study, we suggest that the term 'transnational

assemblages' can be usefully deployed to describe assemblages that comprise bilateral relations between actors situated in specific countries, but that are embedded within a context of global discursive trends. While global assemblages focus on how global forms are articulated in specific settings, and translocal assemblages explores the ways in which assemblages are constituted in specific localities, the notion of transnational assemblages captures the dynamic shifts of specific actors and discourses in bilateral relations – in our case, Norway-Nepal and Norway-Tanzania. These relations are embedded in larger discourses on aid, energy, and development, and global forms such as neoliberalism.

3. Methods

We adopted a mixed-methods approach, drawing on a combination of extensive reading of policy documents and grey literature, as well as semi-structured interviews, focus group discussions and workshops. The policy documents and grey literature formed a key part of our research material. In Norway, we searched for country-specific information on the websites of the Norwegian Agency for Development Cooperation (Norad), the Ministry of Foreign Affairs, the Ministry of Petroleum and Energy, the Directorate of Water Resources and Energy, and the parliamentary archives for relevant documentation on development and energy policy. A number of white papers have been produced over the years pertaining to development policies, and we carefully read through those that were most relevant, eight white papers in total. We were also given access to a cache of unpublished internal travel reports from Tanzania and Nepal by former Norad staff working on energy development, eight such travel reports in total.

To trace the evolution of energy policy, we searched out the most relevant documentation relating to both domestic policies and international development, such as the Clean Energy Initiative launched by the Ministry of Foreign Affairs in 2007, and the Energy+ Initiative launched in 2011, as well as energy-related regulations and legislation. We meticulously read these texts, paying attention to the framings they contained about energy and development relations. In Nepal, we went through the relevant legislation and policy documents, including the 1992 Electricity Act, the 2001 Hydropower Development Policy, the 2006 Renewable Energy Policy, the 2013 National Energy Strategy, and the 2016 Subsidy Policy for Renewable Energy. We did the same thing for Tanzania, paying particular attention to the 2003 National Energy Policy and the Electricity Supply Industry Reform Strategy and Roadmap 2014–2025, as well as relevant reports and material that we sourced from NGOs working within the energy sector.

Another key source of information was semi-structured interviews with relevant actors within the aid and energy sectors. In Norway, we conducted semi-structured interviews with 14 people. These included six Norad employees (two of whom are former employees), one employee from the Directorate of Water Resources and Energy (who were involved in projects in Nepal), one independent energy consultant (who had worked in both Nepal and Tanzania), two former Statkraft employees, a journalist writing for a development-oriented magazine which also covers energy projects, and two representatives from energy NGOs.

In Tanzania we interviewed three staff from the Ministry of Energy and Minerals, two employees from Tanesco, one from the Pangani Water Basin Office, two people from an NGO working to promote renewable energy, as well as two energy advisers from the Norwegian embassy (one current and one former adviser). In Nepal we interviewed two staff members in the Ministry of Energy, one employee from the National Energy Authority (NEA), one employee from the association of independent power producers, one employee from Himal Power, and an adviser from the Norwegian embassy in Kathmandu.

Two energy development projects of roughly the same size and built around the same time were selected to enable us to gain a more in-depth understanding of how these specific projects reflect the particular

logics of development interventions and how these intersect with national policies, agendas, and framings. The cases selected were Khimti in Nepal, and Pangani in Tanzania. These were both medium-size (60 MW) and were built in the mid-1990s. Repeated field trips were organised to each of these sites during 2015 and 2016, where we conducted focus group discussions with villagers living in the vicinity of both projects. We sought out people who had been involved in the construction and management of the projects on the Norwegian, Tanzanian and Nepali sides, and conducted semi-structured interviews with the managers and engineers (most of whom were no longer in their original positions). We did four such interviews in Nepal and three in Tanzania.

We also organised two workshops, one in Kathmandu in September 2016 and one in Dar es Salaam in August 2017. The purpose of these workshops was to elicit different actors' experiences, perceptions and perspectives on energy imaginaries, bringing together people from state agencies, NGOs, donor agencies, civil society, as well as academics, to discuss energy and development relations and what they considered to be the most pressing issues and concerns. The workshops started off with invited presentations from participants, before moving on to discuss key questions pertaining to energy and development issues, and visions for the future. The workshop in Nepal was attended by about 20 people, including people from the Ministry of Energy, NEA, NGOs, and donor representatives. In Tanzania, there were about 25 people, including representatives from Tanesco, the Pangani Water Basin Office, and the University of Dar es Salaam. Both country teams were represented at both workshops, thus facilitating comparison and reflection on contrasts, as well as the exchange of experiences.

4. The evolving landscape of aid and energy in Norway

4.1. From rags to energy riches

Norway's history of hydropower development has shaped its own imaginaries on development co-operation. The country is a high-volume energy producer and consumer, practically all of it derived from hydropower, and hydropower has always occupied a central place in the national psyche [31]. There are currently 1 393 hydropower installations in the country, of which 36 are more than 200 MW and the annual total electricity production is about 146 TWh.¹ In the early 1900s, access to abundant, inexpensive energy became a key driver of the country's industrial development and modernisation efforts. From the initial small-scale efforts, consisting basic run-of-river projects powering local grain mills, schemes gradually grew in scale. Some of the world's biggest hydropower projects were built in this period, to fuel the budding chemical and aluminium industries, and in the post-war era, access to energy for households became an important priority. The dominant idea guiding hydropower development in the post-war period was one of a state-guided, hydropowered industrialisation to mould a modern state [31]. The discovery of North Sea oil in 1969 set Norway on the path to petroleum riches, transforming it into a wealthy, oil-exporting welfare state. While oil and gas have since become an important element of energy politics, the focus in this paper is mainly on Norway as a hydropower nation.

The country's dependence on hydropower spawned educational institutions and entrepreneurial initiatives. A technical college was established in Trondheim to serve as a hub for technology innovation, setting up a hydropower laboratory and creating a vibrant environment for directed research and development. This initiative generated extensive networks of expertise which laid the foundations for a diversity of specialist engineering companies that would later become engaged in development projects abroad.

Norway began taking on the mantle of an aid provider in the 1950s and 1960s. In 1962, an independent agency was set up for development

¹ <https://www.nve.no/energiforsyning/kraftproduksjon/?ref=mainmenu>

co-operation, known since 1968 as the Norwegian Agency for Development Co-operation (Norad). The relationship between the Government of Norway and countries with which it co-operates has traditionally been one where the embassies and aid agencies followed in the wake of early Norwegian missionaries. From 2004, the Ministry of Foreign Affairs and national embassies were tasked with the overall responsibility of day-to-day management of bilateral and multilateral aid, with Norad serving mainly as an advisory body.

4.2. Shifting energy aid assemblages

While the former colonial powers became aid providers to their erstwhile colonies, the government of Norway prided itself on its lack of a colonial past, which, in its own opinion, made it particularly suited as a donor [32]. In the early years, the emphasis was on strengthening the sense of being a ‘good Samaritan’ through the transfer of knowledge, capital, and improved technologies. However, the lack of tangible results from the broad range of aid projects led to something of an existential crisis in the aid industry at the end of the 1980s, and the focus shifted to the institutions in the recipient countries themselves. ‘Good governance’ became a ubiquitous buzzword [33]. According to a former Norad employee “there was a shift towards reforming institutions and then expecting economic growth and democracy to follow in the wake of such efforts” (interview, March 2016).

While the aid discourse in the first couple of decades had tended to be couched in terms of idealistic notions of altruism and state-to-state support, the publication of two reports in the early 1990s that considered the potential of private sector engagement in aid created a stir in Norwegian policy circles.² Essentially, the reports argued that Norwegian aid should be conducted in a way that was compatible with creating opportunities for Norwegian companies in developing country contexts. Companies could be supported through mixed credits, and there was a strong emphasis on the idea that Norway should concentrate on areas where it had specific competence. The commissioning of these reports coincided with a marked downturn in the Norwegian economy, with companies increasingly looking towards the international arena for potential new markets. This was certainly the case for the hydropower sector, as the era of domestic big dam projects was drawing to a close. Thus, the notion of Norway as a selfless provider of aid gave way to a view that legitimised aid as serving both foreign policy and business interests (interview with journalist for an independent development magazine, March 2016).

The early 1990s saw a major liberalising of the domestic Norwegian energy sector, and a concomitant shift in the political imagination of the value of hydropower, shifting from an emphasis on hydropower as a key element in promoting industrial development and securing national welfare, to emphasising the monetary value of electricity as an abstract commodity [31]. The state-owned commercial company Statkraft was created in 1992.³ During the same period, interest in promoting energy as a key development field kept mounting, and energy came to be regarded as fundamental to all aspects of development.

The early 2000s saw a flurry of policies and initiatives, including the Clean Energy Initiative⁴ and the Energy + initiative,⁵ which involved

² The first report, entitled ‘Aid and Business’ was penned by Borger A. Lenth, the Director of Eksportfinans, and presented to the Minister for Development in March 1990. The second report was produced by Einar Risa in 1992 and was titled ‘Report to the Minister of Development from the Association for Aid and Business’ (both titles are authors’ translation). Risa was then State Secretary for development affairs, on leave from Statoil. See Kielland (2008) for details on the reports. E. Kielland, Norsk bistand og næringslivet – fra motkonjunkturtiltak til konjunkturuavhengig samarbeid, Masteroppgave ved Institutt for statsvitenskap, University of Oslo, Oslo, 2008.

³ It had two divisions – Statkraft for the generation of energy, and Statnett for the bulk transmission of energy

⁴ <https://www.norad.no/en/front/thematic-areas/energy/clean-energy/>

Norwegian expertise, particularly in hydropower, increasingly being viewed as an export commodity. The Clean Energy for Development Initiative was launched by the Ministry of Foreign Affairs in 2007 and is geared towards increasing access to renewable energy in developing countries through a combination of grants and commercial investments. The Energy + Initiative was launched by the Norwegian Government at a high-level conference in 2011 convened in co-operation with the International Energy Agency, where the focus was on mobilising private capital and public resources for energy access. The driver was to “create more opportunities for renewable energy”, and concomitantly, to “create commercial opportunities for Norwegian actors” (interview with Energy Norway employee, February 2016). In December 2013, Statkraft and Norfund, a development finance institution created in 1997 to finance investments in energy, signed a Transaction Agreement to restructure and prolong their cooperation within the renewable energy sector. This led to the creation of a new company, SN Power AS. Kjell Roland, Norfund’s director at the time, spoke of a revolution in energy aid [34]. These assemblages of institutions, beliefs and practices were emerging through the merging of aid and private sector interests, facilitated by a rapprochement between aid bureaucrats and consultants.

The form of the energy-aid transnational assemblages thus morphed into a very different shape, reflecting the global trends that shifted focus away from traditional donor-recipient aid relations to privilege ideas of partnership and investment. The practices within conventional development projects changed, becoming preoccupied with reporting procedures rather than getting to know local contexts – “now it’s all about reporting results, and I think the consultancy sector is gaining too much clout within the aid industry” (interview with former Norad employee, March 2016).

Having briefly described the Norwegian landscape of shifting energy-aid assemblages, we now turn to the country contexts of Nepal and Tanzania, exploring how the assemblages of Norwegian actors and discourses became entangled in the emergence of particular imaginaries and pathways of energy development within the spaces shaped by local political contexts and institutions.

5. Energy imaginaries in Nepal

Hydropower has played a prominent part in Nepal’s imagination of energy futures. A particularly powerful idea was the image of hydropower as ‘white gold’, a term coined by a Swiss geographer visiting Nepal in the 1950s [35]. This imaginary referred to how the country’s rich water resources could serve as an export-oriented revenue-generating mechanism to put the country on a path to prosperity; and co-existed with ideas and initiatives of smaller-scale, bottom-up driven hydropower development initiatives. The ‘white gold’ imaginary provided a sense of national unity and of Nepal as a hydropower nation, but its potential state-constructing ethos was eroded over time by the fracturing of the energy landscape, triggered through donor-led efforts to liberalise the sector.

5.1. Overview

Nepal lies squeezed between two neighbouring giants, China to the northeast, and India to the southwest. The Rana dynasty ruled the region for centuries, but in 1960 the Panchayat system was introduced, a structure of party-less self-governance where people could elect their own representatives, but with executive power residing in the hands of the monarch, King Mahendra. The 1990s marked the beginning of

(footnote continued)

[clean-energy-for-development-initiative/](https://www.norad.no/en/front/thematic-areas/energy/clean-energy-for-development-initiative/)

⁵ <http://sdg.iisd.org/news/norway-launches-energy-initiative-at-energy-for-all-conference/>

democracy, which lasted until the 2001 royal massacre,⁶ ushering in a new regime and the direct rule of King Gyanendra until 2006. From then on, the political landscape has been in constant turmoil, dominated by people's movements and constitutional reforms [36].

Foreign aid has played a key role in Nepal. During the 1950s and 1960s, aid and advice from around the world started to pour into the country, a trickle at first, then a torrent [37, 38]. Some donors, such as the US and the USSR, had a geopolitical interest in the early Cold War in supporting Nepal – the US wanted to contain communist China, and both the US and USSR sought to influence India. Aid flows, including for hydropower, dwindled in the 1970s in response to Nepal's declining geopolitical importance during the détente period, and international lenders like the World Bank and the International Monetary Fund (IMF) moved in to fill the gap. After a dip, aid dependency increased from 34% of the national budget in the mid-1970s to almost 70% in the mid-1990s [35]. Nepal remains one of the least developed countries in the world, with aid still accounting for roughly half the nation's development expenditure (*ibid.*), with 80% of the country's population depending on biomass to meet their energy needs [39].

5.2. Hydropower in Nepal and Norwegian involvement

In 1967 it was estimated that the rivers in Nepal could theoretically generate 83 000 MW of electricity [40, p. 75]. That figure is something every Nepali schoolchild knows by heart, instilling in them the sense of being a citizen of a hydropower nation [41]. Thus, the enormity of this potential not only grips the minds of the political elite, but also fuels the popular imagination, with hydropower being hailed as a guarantee for Nepal's future prosperity. Such visions of an inevitable hydropower future “are important technologies of government that might unify a fractured nation-state” [41, p. 147]. A model of export-led growth caught hold, premised on exporting electricity to the northern state of India to power irrigation pumps and nascent industrial development.

In order to fulfil this imaginary, the Government of Nepal was financially dependant on international donors and consultants to do the necessary feasibility studies. In addition to the projects commissioned to facilitate export of electricity to India, there were also more *ad hoc* state-led projects, in which foreign donors and companies were brought in to build plants that would supply power to the capital, Kathmandu, and some other major cities (such as Pokhara and Lalitpur). However, most of these interventions were carried out without reflecting on how hydropower would bring about development in the region. The projects were planned, designed and managed in a top-down fashion, paying scant attention to building local capacity or thinking about how the energy could be put to productive use [35].

In the early 1960s, while most international and bilateral donors with an interest in Nepal were involved in these large-scale projects, a small Norwegian faith-based organisation supported by Norad, the United Mission to Nepal (UMN), began its work. Throughout the 1960s, 70s and 80s, the Mission – and its champion, Odd Hoftun – strived to build local capacity to create an indigenous hydropower industry, mimicking in certain ways the early phases of hydropower's role in Norwegian state-building. Hoftun helped to establish the Butwal Technical Institute, forging links with technical education institutions in Norway, described in the preceding section. The Institute provided village boys with skills and self-discipline to devise their own hydropower projects, making use of local materials and techniques, and establishing a locally owned company in the process, the Butwal Power Company (BPC). These efforts paid off, and several small-scale hydropower plants were successfully built to provide local communities and

small industries with power [42]. There were other government-led attempts to develop small-scale and micro-hydro projects to serve settlements in rural areas in the 1970s, but these initiatives did not prove long-lasting, however, and soon faded out [35].

5.3. Policy rupture: privatisation gains ground

The start of the 1990s marked a political shift in Nepal, with the reinstatement of multiparty democracy and parliamentary elections in 1991. The new government's discourse underscored the importance of promoting hydropower-led development and closing the energy deficit – Nepal's installed capacity at the time was a mere 245 MW, serving about 8% of the population [35].

This discourse contributed to an energy imaginary about achieving greater energy independence from India, thus promoting Nepalese identity and nation-building [42]. The former secretary of water resources approached Hoftun and asked him if the Butwal Power Company could build a project on the Khimti river, on a larger scale than the three small-scale projects that had already been completed. The onus of securing finance, technology and management support from Norad fell on Hoftun. The secretary's request reflected that there had been little institutional learning from the projects built by international contractors during the earlier decades [35]. Since the scale of the task was going to be too much for the local company BPC to take on alone, Hoftun approached the Norwegian state-owned company Statkraft to ask for help.

As described in the previous section, the early 1990s was a time of liberalisation reforms in the Norwegian energy sector, and a concomitant shift in thinking around hydropower towards perceiving it more in terms of an abstract commodity [31]. These reforms meant that it was not possible to finance the Khimti project using public funds, and private financing would have to be sought. Hoftun's negotiations with Statkraft were difficult, as one of their preconditions was the creation of an appropriate legal framework. The Nepal Energy Authority (NEA) had been used to negotiating with Norad, but now they were faced with Statkraft's hard-nosed corporate lawyers, and they had little clue how to handle the situation. The negotiations were arduous, according to one of the team members (interview with employee of the Directorate of Energy and Water Resources, March 2016).

Eventually, the Nepalese Electricity Act was promulgated in 1992, mimicking energy regulatory reforms in Norway and paving the way for the Khimti project. A new company, Himal Power, was created solely for the purpose of owning and operating the run-of-river, 60 MW project, with the BPC and Statkraft as its main shareholders.⁷ Two further small projects, which drew on the strong traditions of community management in Nepal, were built to provide off-grid electricity for the adjacent villages, with the Khimti Rural Electric Cooperative (KREC), formed in 2004. Norad funded the village electrification schemes, and also supported the project with some 230 million, as well as guaranteeing the Norwegian export credits.

The international lenders set strict conditions, which put Himal Power Limited (HPL) under severe pressure (interview with HPL employee, November 2016). Because it was viewed as a high-risk, commercial operation, the tariffs were steep, and the Power Purchase Agreement (PPA) stipulated that NEA should pay for the electricity provided in USD (interview with HPL employee, November 2016). NEA later tried to renegotiate the agreement, even as late as 2014, but did not succeed. NEA buys the electricity at market rates, but then sells it at a flat, subsidised rate, as there is little political interest in charging market prices for electricity [43]. The discrepancy is borne by NEA,

⁶ On 1 June 2001, Crown Prince Dipendra shot and killed ten members of the Nepalese monarchy, including his father King Birendra, and his mother, Queen Aishwarya, and then shot himself in the head. He later died from his head wounds, and his brother, Gyanendra, acceded the throne.

⁷ The initial shareholding structure was Statkraft 73%, Butwal Power Company (BPC) 17% and ABB (now Alstom Power) and Kværner (now GE Energy) 5% each. The current shareholders are Statkraft, Bergenshalvøens Kommunal Kraftselskap (BKK) and BPC.

thus exacerbating the huge deficit it already carries due to management challenges and allegations of corruption (ibid.). In some ways, this reflects the illusion of the Norwegian shift in energy imaginaries towards viewing electricity mainly as a commodity, and of regulatory reforms that were premised on market conditions detached from political realities.

Khimti became the first privately owned hydropower project in Nepal, and it marked a major shift in attitudes towards energy development. Whereas Norad had funded Hoftun's work through conventional grants, there was now a more commercial approach, with an accompanying emphasis on the long-term financial viability of energy projects.⁸ There was irritation amongst Nepalese bureaucrats too, regarding the sudden change of tune from their Norwegian partners. In conceptualising plans for hydropower development, the major donors did not consider lessons that the bottom-up approach could have provided for the sector and Nepal's development. If there had been closer co-operation and willingness to learn, Nepal could have had two decades of lead-time to build a more resilient imaginary of an indigenous hydropower sector that could have helped the country on its development path [35].

5.4. Fragmentation and chaotic pluralism

Following this 'triggering moment' and having opened up for the entry of private actors through putting into place a privatisation-friendly legal framework, the Nepali Government soon began pushing privatisation of its own accord. Following the 1992 Electricity Act, there was a burst of activity in formulating new energy policies and enactments on existing policies. The Hydropower Development Policy was published in 2001, followed by a Renewable Energy Policy in 2006. In 2013 came the National Energy Strategy, and in 2016 a Subsidy Policy for Renewable Energy. Hydro had become 'hot' amongst local investors, and many of the companies listed on the Kathmandu stock exchange were hydro companies. Some project-affected communities, such as those in the Upper Tamakoshi area, were offered the opportunity to purchase a piece of the hydropower future via initial public offerings [41]. There is a lot of speculation in shares, without people necessarily appreciating the risks involved (stakeholder interviews, project workshop in Kathmandu, September 2016), fuelling a potent 'hydro hype' [35]. According to the Nepal Electricity Authority (NEA), Nepal currently has a total installed capacity of about 746 MW from hydropower, with about 26 MW produced by mini- and micro-hydro plants. Electricity accounts for only about 1,5% of energy supply, with the mainstay of energy needs (about 75%) being covered by fuelwood. The remainder is made up of petroleum products, animal waste, and agricultural residues [44].

The imaginary of hydropower as 'white gold' that could have served as a force to potentially unify a struggling and fractured state, was thus turned into a vehicle for its further fracturing. Efforts to build an indigent hydropower sector were eclipsed by approaches that tried to deal with the problems of what they perceived to be a bloated and ineffective state bureaucracy, through emphasising private investment and electricity as an abstract commodity. This reflected the reframing and reforms being rolled out in Norway in the early 1990s, where hydropower went from playing the role of undergirding the construction of an inclusive welfare state to being viewed mainly in terms of its monetary value.

While the energy imaginary of hydropower as 'white gold' remained strong, its potential role as a state-building force morphed into becoming mainly an emblem of export-oriented revenue generation,

⁸ The law guaranteed the return of responsibility for operating the power plant to the national government after a certain period. There was also an emphasis on building technical competence and awareness of environmental issues.

fuelled by private investments. The export-oriented model was supported by the Norwegian embassy through co-funding the building of high-voltage transmission lines between Nepal and India. Statkraft was involved in the 650 MW Tamakoshi III project in 2016. However, the company eventually withdrew from the project, due to, amongst other things, uncertainty linked to the potential to export energy to India. While many foreigners are today withdrawing from Nepal due to the instability of the political regime, India and China continue to vie for influence in the country.

6. Energy imaginaries in Tanzania

Energy imaginaries in post-colonial Tanzania were heavily influenced by ideas of state-led, large-scale hydropower development, or 'hydropowered industrialisation'. Dams were striking symbols of the power of the state to direct its own course of development in the early years of African independence [45]. Leaders of socialist post-colonial states, such as Nkrumah in Ghana and Nyerere in Tanzania, looked to the nation's rivers to solidify their political power and foster economic development [46].

6.1. Overview

Tanganyika became independent in 1961,⁹ with the charismatic Julius Nyerere taking the helm as the country's first president. He was to dominate Tanzanian politics for more than two decades, attempting to fashion an African version of socialism. His 1967 Arusha Declaration set out in broad terms a new vision for rural development, emphasising self-reliance and the settling of people into village co-operatives, a policy known as *ujamaa* (familyhood) [47, 48]. The implementation of this development strategy relied on the installation of a powerful state, controlled by the bureaucracy and a single dominant party [49]. However, although Nyerere was sincerely committed to improving the condition of the peasantry, his legacy is ambivalent. The practice of *ujamaa* was deeply problematic as it relied on coercion and forceful resettlements, rather than voluntarism. The tension between participatory empowerment, as emphasised by the president in his speeches, and state authority was resolved in favour of the latter [50].

Following the financial crisis in 1983–85, Tanzania completely reversed Nyerere's socialist policies over the following decade [51]. The World Bank and the IMF imposed economic reforms and liberalisation as conditions for loans, and aid conditionality became the order of the day [52]. While the country became a multi-party democracy in 1992, it has remained dominated by the major party, Chama Cha Mapinduzi [53]. The current president, John Magufuli, has vowed to crack down on corruption and reduce the dependency on aid, and while he was initially credited for his tough stance on graft, he is increasingly being criticised for his authoritarian style [54].

6.2. Energy development and Norwegian engagement

In the decades after independence, Tanzania engaged in efforts to generate electricity, mostly diesel-based, setting up the Tanzania Electric Supply Company (Tanesco) in 1975. The expansion of the national electric grid was made possible through "violent state-making projects enacted by Tanzania's early political leaders who were inspired by colonial logics" [55, p. 12]. For Nyerere, village living, development services, sedentary agriculture and mechanisation, coupled with power generation and industrialisation, became a single indissoluble idea of his newly-independent Tanzania [55, 56].

Surveys in the early 1960s by FAO and the US Bureau of Reclamation had suggested that there could be great potential in

⁹ The country became Tanzania upon entering into a union with Zanzibar in 1964.

developing the Rufiji River, one of the country's main hydrological resources. In the mid-1960s Tanzanian planners visited the US to witness the wonders of the Tennessee Valley Authority (TVA), seen as a model of river-basin development at the time [57]. Thus, interest increased in the potential of hydropower, reflecting a faith that power produced by dams would spur industrial development. The country's second Five Year Plan for Economic and Social Development stated that "The expansion of power supplies is a necessary ingredient for such development" [46, p. 249]. Thus, the Stiegler's Gorge project was conceived, a grandiose 2 100 MW scheme on the Rufiji River, hailed by the Tanzanian Government as a symbol of modernity and a cornerstone of the country's industrialisation plan [United Republic of Tanzania, 1969, cited in 46, p. 149]. As the Volta River project had been Nkrumah's vision of transforming his country into a modern industrialised nation, so the Stiegler's Gorge project became Nyerere's dream [46, 58], consolidating an energy imaginary of hydropowered industrialisation.

As US interest in funding the project waned due to the increasing antipathy towards Nyerere's socialist ideas, the Norwegians readily stepped into the fray [46]. They were attracted by an opportunity to export the expertise of their own hydropower consultants and share their experiences and imaginaries of large-scale dam building to power industry. The socialist ideals of the Tanzanian leader were an additional attraction which chimed well with Norwegian ideals of a strong state [46, 58, 59]. Nyerere was well aware of the role of hydropower in Norway's history of becoming a modern industrialised welfare state. There had been close links between Nyerere and some of the Nordic social democrats in the 1960s and 1970s [52].

Tanzania occupied a significant space in Norwegian bilateral aid relations. While some of the staff working for Norad at the time began raising concerns about human rights issues – particularly in relation to the *ujamaa* policy – the will to believe in Nyerere's policies and images of the future was so powerful on the political left that such warnings went unheeded [52, 60]. This infatuation resulted in an assortment of Norwegian and Scandinavian actors in Tanzania [52, 60], including Norad bureaucrats, experts, and ambassadors, as well as NGOs and consultancy companies. Norad set up a local office in Dar es Salaam in 1968, and an embassy was established in 1975. Norad introduced a system of resident representatives which lasted for a period of around twenty years before being phased out in the early 1990s [61].

The emphasis was on providing electricity for industry to promote hydropowered industrialisation, such as Norway itself had experienced. Thus the focus of the Stiegler's project centred on maximising power production, rather than flood control or irrigation [46]. In fact, the World Bank had done a feasibility study and found the project to be unrealistic, a study that Norad was not aware of. Norad went ahead and financed a feasibility study of its own, carried out in 1973 by Norconsult, a Norwegian consultancy company, and the project kept lumbering on, running up costs to the tune of about 150 million NOK before finally being terminated in 1981 [52, 58].

In the meantime, the Great Ruaha Power Project, conceived by Tanesco, Sida (the Swedish equivalent of Norad) and the World Bank, resulted in building the smaller-scale Kidatu and Mtera reservoirs on the Ruaha River, which were completed in 1980 [62]. Further hydropower projects were not proposed until the early 1990s, notably the Pangani Falls Redevelopment Project, finalised in 1995. Pangani was a medium-sized 60 MW, 100 million NOK project funded by three Nordic donors, Norad, Finnida (the Finnish aid agency), and Sida, with Norad footing the largest share of the bill. Norad further supported a Programme for Upgrading Local Infrastructure and Services (PULIS), targeted at the project-affected villages, building health centres, sanitation facilities, and schools but with no provision for rural electricity. While deemed successful at the time, the Pangani project soon ran into problems of water shortages due to seasonal variability and upstream irrigation, which the mandatory creation of the Pangani River Basin Authority could not solve. There was also the Kihansi project, upstream on the Rufiji River, which was completed in 2000 [63].

6.3. Reforms and resistance

The 1990s saw Tanzania embarking on an extensive reform programme [64]. At the behest of the World Bank, the electricity sector was liberalised in 1992, with the formulation of the country's first energy policy, followed by a new electricity industry policy and restructuring framework in 1999. The major role that electricity came to play in the country's development trajectory was brought to the fore in the Tanzanian Development Vision 2025, which was forged by Tanzania's third president, Benjamin Mkapa, in collaboration with foreign supporters. The document emphasises the extension of the state's development vision in transitioning from agriculture to electrified industry [55, 65].

However, while there was broad consensus around the importance of electricity for development, there was more controversy around how the energy sector was to be organised. The World Bank's Power Sector VI Programme involved extensive corporatisation of the sector. The 2003 Energy Sector Policy thus emphasised competition and the state's disengagement from energy production, in line with the standard unbundling model of separating production, transmission, and distribution. In the wake of this policy, two independent power providers were created, Independent Power Tanzania Limited (IPTL) and Songas, which were established in 2003 and 2004 respectively. A major corruption scandal surrounded IPTL, which became one of the most expensive projects of its kind [66, 67]. While Norad supported the World Bank Power Sector Reform Programme through multilateral funding, it was not actively involved. Indeed, travel reports from Norad staff at the time reveal uneasiness at not being properly informed about what was going on with the programme. There were doubts regarding the World Bank's proposition to unbundle Tanesco, with one Norad staff member remarking that it was 'rash' (interview with former Norad adviser, March 2016).

The Tanzanian authorities had few alternatives but to accept the package offered by the World Bank, and showed initial complacency; but a quiet resistance was gaining momentum that resulted in the de-specification of Tanesco in 2005. Plans around Tanesco's future were revived in the Energy Roadmap published by the Ministry of Minerals and Energy in 2014, and the current government's attitude to privatisation thus seems "deeply ambivalent" in the words of a former energy adviser with the Norwegian embassy (interview, November 2017). Despite efforts to reform and liberalise the energy sector, the socialist past still shapes people's vision of development and energy imaginaries, a point that was also expressed by several participants at the stakeholder workshop we held in Dar es Salaam in September 2017.

6.4. The centrality of state control

Concomitant with the contested reform efforts, there was a reorientation of Norwegian aid to the energy sector, shifting from infrastructure projects to 'softer' approaches, such as strengthening state institutional capacity and emphasising rural electrification. The Rural Energy Agency (REA) and the Rural Energy Fund (REF) were set up in 2007 to promote energy access in rural areas, mainly through expanding the central grid. There was an emphasis on continuing support to Tanesco, though it was considered as being overly bureaucratic, ineffective, and cumbersome, with the effectiveness of its support being brought into question [68]. NGOs working in the sector, such as the Tanzania Renewable Energy Association (TAREA), complained that "it is very hard to offer alternative solutions and change the mindset of the Agency people, who tend to be stuck in their old ways of thinking" (TAREA staff member, personal communication, September 2017). Part of the reason for the State's resistance to decentralised rural energy, such as solar, might lie in the still-prevalent desire to make informal pastoralist Maasai livelihoods 'legible', and to incorporate them into formal economies through centralised electrification controlled by the State [55].

The reorientation of Norwegian aid was associated with a gradual decline in the presence of Norwegian actors in Tanzania. The early 2000s saw major budget cuts, and Norwegian consultancy companies have scaled down their activities. While the Norwegian embassy was co-ordinating the work of many of the Western donors involved in energy projects, and had a 'good dialogue' with Tanzanian authorities on specific projects, they perceived the relations in terms of discussing energy policy as 'somewhat strained', noting that their influence had waned (interview with energy adviser, January 2017).

Meanwhile, there has been a return to large-scale planning and constructing of energy generation by national authorities, through the Power Sector Master Plans (PSMPs) which reflect the state's returned leadership and ambition [69]. Visions for Tanzania's energy future are articulated in the 'Big Results Now' policy (2012–2015), the Energy Roadmap (2014), and the 2016 update of the Power Sector Master Plan. The main objective set out in the Roadmap is to increase power generation capacity from about 1 583 MW to 10 000 MW by 2025 [70], even though actual demand would likely be just a fraction of that [69]. While natural gas and coal make up the major part of the envisioned increase, the vision involves a tripling of hydropower capacity, with renewables, such as solar and wind, making up a mere 5%. This has resulted in the resurrection of a number of formerly stalled dam projects, most prominent amongst these being the Stiegler's Gorge [69], despite the misgivings expressed by former Minister of Energy and Minerals, Sospeter Muhongo,¹⁰ towards hydropower due to problems of unreliability (interview with energy adviser, January 2017).

It is thus possible to contend that there has been a revival of the energy imaginary of large-scale 'hydropowered industrialisation, taking a cue from Ethiopia (arguably the leading dam-building country on the continent). Magufuli has been eager to wean the country off Western donors and consultants, and the project was finally awarded to a couple of Egyptian companies [71]. Thus, while Norwegian actors were heavily involved in the initial conceptions and planning shaping the 'hydropowered industrialisation' imaginary, the assemblage of actors has changed.

The return of faith in large-scale energy projects and the revival of the imaginary of 'hydropowered industrialisation' reflects a broader trend of State developmentalism, often linked to the energy sector, unfolding in many African countries [72]. Magufuli is an ardent advocate of state-led industrial development, and the resuscitation of the Stiegler's Gorge project brings out how dams are "imbued with developmental potential, but their spectacle is seized upon as demonstrative of progress, flagships for the government's ambition" [69, p. 7]. In many ways, Magufuli has yet to break with the modernising tradition of the past, and his political platform, *kufufua viwanda* (to revive the factories), has become a "rallying cry for Tanzanians hoping to reap the benefits of an industrial future" [55, p. 18]. Intriguingly, the Stiegler's Gorge project is still based on the 1973 feasibility study done by Norconsult, highlighting how current energy imaginaries are shaped by past practices.

7. A tale of two trajectories

As a backdrop, it is possible to discern three broad historical trends in energy aid discourses. First, there was a phase during the early decades of post-colonialism in the 1950s, 60s and 70s, when donors were keen to support state-led efforts at building large-scale dams. The enthusiasm for such hydraulic missions [73], which came to co-exist with strategies favouring multiple forms of community-led energy projects, and initiatives focusing on poverty alleviation and the bolstering of rural livelihoods through more bottom-up approaches [74, 75]. The 1980s and 1990s saw an increasing drive towards governance forms emphasising privatisation and financialisation of energy projects,

as well as aid conditionality, which coincided with rising concerns about the environmental impacts of dams [76].

The third transition, from the 2000s onwards, marks a questioning of the need for, and existence of old forms of transnational energy aid assemblages themselves. New financiers, such as China, India, and Brazil, entered the global energy scene, shifting the playing field from the conventional north-south divide to a more multipolar terrain. Rather than donors and recipients, 'partnerships' has emerged as the new consensus term, suggesting a horizontal and complex set of relations [77]. Aid has morphed from being patronising charity to being seen as foreign public investment, with the emergence of partnerships and a concomitant de-politicisation of development [78]. In the context of these broad shifts, how have transnational assemblages of energy aid shaped the emergence of particular energy imaginaries in Nepal and Tanzania?

A striking feature that emerges from this complex transnational trilateral case study is the sharply contrasting trajectories that unfolded over time. In Nepal, early endeavours by the Norwegians to help establish a bottom-up-driven indigent energy sector gave way, rather abruptly, to an emphasis on facilitating private sector involvement, reflecting the Norwegian shift towards framing energy largely as an abstract commodity. The hydropower as 'white gold' imaginary, with its potential state-unifying force, was thus emasculated, as the 'triggering moment' of opening up for privatisation caused hydropower to become primarily a vehicle for private investment-induced, export-oriented revenue earnings, whilst largely stripping it of any association with state unification and developmentalism. The energy landscape subsequently evolved into a state characterised by chaotic plurality, with everyone scrambling to position themselves to get a share of the 'white gold'.

Tanzania offers a radically different story. There, the early Norwegian attempts as a donor were to embark on developing the grandiose Stiegler's Gorge project, fuelling an energy imaginary of hydropowered industrialisation that meshed well with their domestic experience. This contrasted sharply with the small-scale, capacity-oriented approach initially taken in Nepal. The energy imaginary of hydropowered industrialisation aligned with the visions of Tanzania's political leadership in the early years of independence, supported through the *modus operandi* of nurturing close relations between the consultancy sector and aid agencies. While the size of the projects was later scaled down, the state-centric focus remained strong, and was reinforced through the coming to power of the autocratic-minded John Magufuli, who went on to revive the megaproject Stiegler's Gorge.

Tracing such changing assemblages over time draws attention to the complex web of actors and discourses at work in the countries under study, and helps to deepen our understanding of the factors and forces that shaped the unfolding processes. Norway's forays into Nepal in the early years of aid-giving were characterised by the vision and missionary zeal of Hoftun, drawing on the assemblages of Norwegian educational institutions specialising in hydropower engineering and the discourse of incrementalist bottom-up development that drove Hoftun's work. Those efforts helped create an alternative vision for Nepal's future than the dominant 'white gold' narrative existing at the time. The turning point came when Statkraft was brought in to help with the Khimti project. By that time, in the early 1990s, the Norwegian domestic economy was struggling, not least the energy sector.

This reality was reflected in the shifting discourse on development that increasingly integrated the interests of security, foreign policy, and development co-operation and the interests of business, reframing hydropower as an abstract commodity. While all three countries were in the grip of the 'global form' of neoliberalism [11] in the early 1990s, this unfolded in distinctly different ways, partly due to the contingent nature of the assemblages present in each context. Nepal went from being a benefactor of Norwegian grants and goodwill to becoming a showcase and stepping-stone for its corporate actor to enter the Asian markets and strengthening Norway's self-image as a world player in the

¹⁰ He served as Minister of Energy and Minerals from 2012 to 2015.

hydropower sector.

While Statkraft's lawyers were busy moulding Nepal's legal framework, the pressure to privatise was much more muted in Tanzania. There, it was the World Bank that pressed for privatisation, and though supported by Norway through multilateral grants, the attitude was a very different one. Again, through the contingencies of history, assemblages were dominated by an aid agency-consultancy complex embedded in the energy imaginary of hydropowered industrialisation to construct a strong, modern state. This was to be brought about through the support of Scandinavian, including Norwegian, engineering consultants cushioned by low-risk aid funding. The different natures of the assemblages in these countries arguably exerted a degree of influence on the perceptions about what sources of energy and forms of energy governance would foster development [1].

The socio-political contexts – the institutions, logics, values and visions – within which these transnational aid assemblages operated, were quite disparate, and to varying degrees these meshed with, responded, and resisted the presence of such assemblages. Nepal in the early 1990s was a fledgling and fragile democracy, with a weak bureaucracy and an administration that was easily pushed around by experienced corporate lawyers. A fragmented political landscape characterised by continuous infighting and instability meant that there were ample 'soft spaces' for serving the interests of private investors. Whereas most efforts had hitherto been state-led, now the door was prised open to let private actors in, resulting in a burgeoning plethora of new stakeholders in the energy sector. Thus, the 'soft spaces' that abound in the context of Nepal's weak bureaucracy and traditions of strong local collective action meant that there was space for more diversity and alternative energy pathways. The country became a laboratory for opening up for private investment to facilitate the pursuit of the 'white gold'.

The dynamics towards private sector participation and neoliberalism are structurally dependent not only on donors' conditions and visions, but also on the spaces and dynamics of state-society relations amongst which these assemblages are constituted. This was clearly evident in Tanzania, where the visions of socialist former president Julius Nyerere resonated with donor actors long after his departure, and the ideas of state-led development in the energy landscape remained the *leitmotif* of Norwegian involvement. But while Magufuli sought to wean the country off donors, his decision to revive the Stiegler's Gorge project (based on the 1973 feasibility study conducted by the Norwegian consultants) clearly highlights the inherent path dependencies, bringing "to light a particular local history of contact with politico-economic interventionism, which structures current behaviour patterns, at least in part" [79, p. 139]. It also underscores the material and spatial dimensions of energy resources and infrastructure, and how energy infrastructures are tightly coupled with national imagination, given the way they "compose and materialise the territory of the state" [1, p. 4].

These trajectories also point to the partially conflicting images of the Norwegian energy and aid assemblages. The contrast between the eagerness to use the soft spaces of the weak Nepali bureaucracy to experiment with investment-led initiatives and the more stoical emphasis on supporting state institutions and images of state-led energy development in Tanzania is remarkable. Whereas Tanzania was dominated by the large-scale export of people and 'knowhow' and modernist visions of nation-building through high-risk megaprojects, these ran counter to the efforts in Nepal that were initially inspired by more incrementalist development ideas, eventually subsumed by explicit commercial interests, and there was apparently little conscious attempt to make these assemblages cohere [26].

These particular transnational assemblages of Norwegian actors and ideas co-existed and jostled for space with a host of other constellations of actors and influences, and it is impossible to tease out direct causal links between the presence of certain actors, given the multiple co-existences and distributed nature of power [80]. However, it does invite

reflection on the possibilities of alternative pathways - what if there had been more emphasis on decentralised approaches in Tanzania, and a more active fostering of energy democracy [see e.g. 81]? What if regional development initiatives had focused on multipurpose dam projects more sensitive to local needs of irrigation and flood control [46]? Had efforts in the past been geared towards more decentralised, and incrementalist ideals, it might be that the country's energy sector would have been in a very different place.

For Nepal, it invites imagining how things might have turned out if Hoftun's early efforts to create an indigent energy sector had been consolidated instead of being eclipsed. Nepal has a strong history and tradition of collective action, and it could have proved a fertile ground for more bottom-up approaches, rather than the export-led vision that has maintained a firm grip on the popular imagination. While engaging in such counterfactual thought experiments is a fraught exercise, it helps us to underscore the value of historical and comparative approaches in highlighting dynamics that are often obscured, and to opening up space to reflect on possibilities that tend to be overlooked by taken-for-granted, present-day ideas about spatial relations and realities.

8. Conclusion

In untangling the complex histories of energy development through this long-term, comparative perspective of energy imaginaries and transnational assemblages in Norway, Nepal, and Tanzania, we have drawn attention to how assemblages of particular actors and discourses shaped energy imaginaries in diverse ways. Such efforts to tease out the webs of influence and shifting topographies of power asymmetries over time are helpful in questioning realities that are often seen as fixed, and reflecting on notions of space and national identities [1].

Our discussion of these divergences demonstrates how the shifts of power "that are neither centred nor radically dispersed in pattern, come into play with different outcomes in different times and places" [82, p. 154]. The comparison of how these transnational energy aid assemblages unfolded in two contrasting settings brings out a complex story of overlaps and contradictions, and of energy imaginaries that took radically different forms. While one clearly discerns the gradual fading of Northern donor dependency by the construction of alternative networks and policies, and the rise of other emerging economies that provide alternative partnering opportunities, the ways in which these interventions have left indelible marks is brought to light. Conceiving of donor-recipient relations as transnational assemblages situated within national socio-political contexts and larger global discursive trends allows for a better understanding of how particular constellations of actors and discourses were at work in shaping energy imaginaries and trajectories of development.

Declaration of Competing Interest

We, the authors, declare that there are no conflicts of interest.

Acknowledgements

This research was made possible through funding from the Norwegian Research Council (grant no. 237706). We would like to thank our informants in Nepal, Tanzania, and Norway for their time and patience, as well as our project partners. Particular thanks are due to Catherine Wilson Itani, who served as an excellent research assistant throughout the project. We would also like to thank colleagues at the Norwegian Water Research Institute (NIVA), the Norwegian University of Life Sciences (NMBU) and the Institute of Development Studies (IDS) for suggestions and inputs on earlier drafts of this manuscript, as well as constructive comments from three anonymous reviewers.

References

- [1] G. Bridge, B. Özkaynak, E. Turhan, Energy infrastructure and the fate of the nation: introduction to special issue, *Energy Res. Soc. Sci.* 41 (2018) 1–11.
- [2] S. Paladino, J. Simonelli, Hazards so grave: anthropology and energy, culture, agriculture, *Food Environ.* 35 (1) (2013) 1–3.
- [3] B.K. Sovacool, What are we doing here? Analyzing fifteen years of energy scholarship and proposing a social science research agenda, *Energy Res. Soc. Sci.* 1 (2014) 1–16.
- [4] J. Marquardt, The politics of energy and development: aid diversification in the Philippines, *Energy Res. Soc. Sci.* 10 (2015) 259–272.
- [5] B.K. Sovacool, The political economy of energy poverty: a review of key challenges, *Energy Res. Soc. Sci.* 16 (3) (2012) 272–282.
- [6] G. Siciliano, F. Urban, M. Tan-Mullins, G. Mohan, Large dams, energy justice and the divergence between international, national and local developmental needs and priorities in the global South, *Energy Res. Soc. Sci.* 42 (2018) 199–209.
- [7] M. Bazilian, S. Nakhooa, T. Van de Graaf, Energy governance and poverty, *Energy Res. Soc. Sci.* 1 (2014) 217–225.
- [8] M. Kuchler, G. Bridge, Down the black hole: sustaining national socio-technical imaginaries of coal in Poland, *Energy Res. Soc. Sci.* 41 (2018) 136–147.
- [9] I.F. Ballo, Imagining energy futures: sociotechnical imaginaries of the future smart grid in Norway, *Energy Res. Soc. Sci.* 9 (2015) 9–20.
- [10] G. Trencher, J. van der Heijden, Contradictory but also complementary: national and local imaginaries in Japan and Fukushima around transitions to hydrogen and renewables, *Energy Res. Soc. Sci.* 49 (2019) 209–218.
- [11] S. Sassen, Neither global nor national: novel assemblages of territory, authority and rights, *Ethics Global Politics* 1 (1–2) (2008) 61–79.
- [12] S. Razavi, World development report 2012: gender equality and development—a commentary, *Dev. Change* 43 (1) (2012) 423–437.
- [13] N. Gilman, Article review in special forum: modernization as a global project, *Dipl. History* 22 (3) (2009) 1–8.
- [14] M. Nusser, Large Dams in Asia: Contested Environments Between Technological Hydroscaapes and Social Resistance (Advances in Asian Human-Environmental Research, Springer, 2013).
- [15] J. Mahoney, *Sociology of Development* 1(1) (2015) 77–90.
- [16] R.F. Hirsh, C.F. Jones, History's contributions to energy research and policy, *Energy Res. Soc. Sci.* 1 (2014) 106–111.
- [17] S. Jasanoff, S.-H. Kim, Sociotechnical imaginaries and national energy policies, *Sci. Cult.* 22 (2) (2013) 189–196.
- [18] J. Cloke, A. Mohr, E. Brown, Imagining renewable energy: towards a social energy systems approach to community renewable energy projects in the global South, *Energy Res. Soc. Sci.* 31 (2017) 263–272.
- [19] L.J. Delina, Whose and what futures? Navigating the contested coproduction of Thailand's energy sociotechnical imaginaries, *Energy Res. Soc. Sci.* 35 (2018) 48–56.
- [20] D. Lewis, D. Mosse, Development Brokers and translators: The ethnography of Aid and Agencies, Kumarian Press, 2006.
- [21] C. Walsh, Eugenic acculturation: manuel gamio, migration studies, and the anthropology of development in Mexico, 1910–1940, *Lat. Am. Perspect.* 31 (5) (2004) 118–145.
- [22] J. Fisher, D. Beswick, The African State and Special Procedures: Agency, Leverage and Legitimacy, The University of Birmingham Press, Birmingham, 2016.
- [23] L. Whitfield, The Politics of aid: African strategies For Dealing with Donors, Oxford University Press, Oxford, 2009.
- [24] B. Anderson, C. McFarlane, Assemblage and geography, *Area* 43 (2) (2011) 124–127.
- [25] A. Ong, S.J. Collier, Global Assemblages: Technology, Politics and Ethics as Anthropological Problems, Blackwell, 2005.
- [26] T.M. Li, Practices of assemblage and community forest management, *Econ. Soc.* 36 (2) (2007) 263–293.
- [27] C. McFarlane, Translocal assemblages: space, power and social movements, *Geoforum* 40 (4) (2009) 561–567.
- [28] G. Deleuze, F. Guattari, A Thousand Plateaus: Capitalism and Schizophrenia N, University of Minnesota Press, MN, Minneapolis, 1987.
- [29] M. DeLanda, A New Philosophy of Society: Assemblage Theory and Social Complexity, (2019).
- [30] P. Siakwah, Actors, networks, and globalised assemblages: rethinking oil, the environment and conflict in Ghana, *Energy Res. Soc. Sci.* 38 (2018) 68–76.
- [31] T.H. Løding, Arvesølvets verdi—den historiske transformasjonen av vannkraftforvaltningens legitimering, *Tidsskr Samfunnsforsk* 58 (04) (2017) 367–388.
- [32] S. Engh, The conscience of the world?: swedish and Norwegian provision of development aid, *Itinerario* 33 (2) (2009) 65–82.
- [33] J. Demmers, A.E. Fernández Jiliberto, B. Hogenboom, Good Governance in the Era of Global neoliberalism: Conflict and Depoliticization in Latin America, Eastern Europe, Asia and Africa, Routledge, 2004.
- [34] K. Roland, En Revolusjon i Tenkning Om Bistand? Bistandsaktuelt, Norad, 2016, <https://www.bistandsaktuelt.no/arkiv-kommentarer/2016/en-revolusjon-i-tenkning-om-bistand/>.
- [35] A. Dixit, Hydropower in Nepal: from a Subdued Mosaic to a Chaotic Plurality, Unpublished report, 2018.
- [36] P. Jha, Battles of the New Republic: A Contemporary History of Nepal, Oxford University Press, Oxford, 2014.
- [37] E.B. Mihaly, Foreign Aid and Politics in Nepal: A case Study, Oxford University Press, London, 1965.
- [38] D.R. Panday, The Legacy of Nepal's Failed Development, n: S. Einsiedel, D. Malone, S. Pradhan (Eds.), Nepal in Transition: From People's War to Fragile Peace, Cambridge University Press, Cambridge, 2012, p. 81.
- [39] M.J. Herington, Y. Malakar, Who is energy poor? Revisiting energy (in) security in the case of Nepal, *Energy Res. Soc. Sci.* 21 (2016) 49–53.
- [40] D. Adhikari, Hydropower development in Nepal, *Nepal Rasta Bank – Econ. Rev.* 18 (2016) 70–94.
- [41] A. Lord, Citizens of a hydropower nation: territory and agency at the frontiers of hydropower development in Nepal, *Econ. Anthropol.* 3 (1) (2016) 145–160.
- [42] P. Svalheim, Power For Nepal: Odd Hoftun and the History of Hydropower Development, Martin Chautari, 2015.
- [43] S. Jorde, L. MacGregor, A.K. Garberg, Ren utvikling eller ren business? Hvorfor er nepal så sinte på sn powers vannkraftanlegg i khimti?, Fremtiden i våre hender rapport 1-2015, Framtiden i våre hender (FIVH), Oslo, 2015.
- [44] R.P. Bhatt, Hydropower development in Nepal—climate change, impacts and implications. renewable hydropower technologies, *Renew. Hydropower Technol.* 75 (2017) 75–98.
- [45] J. Allouche, State building, nation making and post-colonial hydropolitics in India and Israel: visible and hidden forms of violence at multiple scales, *Political Geogr.* 75 (2019).
- [46] H.J. Hoag, Transplanting the TVA? International contributions to postwar river development in Tanzania, *Compar. Technol. Transf. Soc.* 43 (2006) 247–267.
- [47] L. Cliffe, J.S. Saul, Policies. Volume II of Socialism in Tanzania, Eastern Africa Publishing House, Nairobi, 1973.
- [48] G. Hydén, Beyond Ujamaa in Tanzania: Underdevelopment and an Uncaptured Peasantry, Univ of California Press, 1980.
- [49] M.-A. Fouéré, Julius Nyerere, Ujamaa, and political morality in contemporary Tanzania, *Afr. Stud. Rev.* 54 (1) (2014) 1–24.
- [50] L. Schneider, Freedom and unfreedom in rural development: julius nyerere, ujamaa vijijini, and villagization, *Can. J. Afr. Stud.* 38 (2) (2004) 344–392.
- [51] K. Bayliss, Tanzania: from nationalization to privatization—and back? Privatization and Alternative Public Sector Reform in Sub-Saharan Africa, Springer, 2008, pp. 151–180.
- [52] J. Simensen, The Norwegian-Tanzanian aid relationship – a historical perspective, Tanzania in Transition: From Mbeki to Mkapa, Mkuki Na Nyota Publishers, Dar es Salaam, 2010, pp. 57–70.
- [53] T. Kelsall, Going with the grain in African development? *Dev. Policy Rev.* 29 (2011) s223–s251.
- [54] The Economist, Democracy Under Assault: Tanzania's Rogue President, The Economist, 2018.
- [55] T. Adometto, Solar Possibilities: Electric Pastoralism and the Role of Experimentation in Encouraging Innovation from Tanzania, Unpublished Ph.D. Thesis Ohio State University, 2019.
- [56] J.C. Scott, Seeing Like A State: How Certain Schemes to Improve the Human Condition Have Failed, Yale University Press, New Haven and London, 1998.
- [57] J. Allouche, The birth and spread of iwrn – a case study of global policy diffusion and translation, *Water Altern.* 9 (3) (2016) 412–433.
- [58] L. Søyland, Planer og Prosjektering: En Analyse av Norsk-Tanzaniansk Samarbeid om Stiegler's Gorge Prosjektet, 1970-1981 (Plans and Projects: an Analysis of the Norwegian-Tanzanian Collaboration on the Stiegler's Gorge Project 1970-1981), 2011.
- [59] K. Havnevik, Tanzania: The limits of Development from Above, Mkuki na Nyota Publishers, Dar es Salaam, 1993.
- [60] I. Urldal, Det forgjettede land? En analyse av den Norske Tanzania-Debatten, med Hovedvekt på Perioden 1971 til 1985, 2009.
- [61] K. Huglen, NORADs Sendebud: En Analyse av NORADs Stedlige Representanter i Tanzania og Deres Arbeid Tilknnyttet Utviklingsprosjektet Sao Hill 1969-1990, 2013.
- [62] H.J. Hoag, M.-B. Öhman, Turning Water Into Power: Debates Over the Development of Tanzania's Rufiji River Basin, 1945–1985, *Technol. Cult.* 49 (3) (2008) 624–651.
- [63] A. Usher, Dams as development: a political economy of nordic development thinking, *Routledge Studies in Development and Society*, Routledge, 1997.
- [64] Ghanadan, Connected geographies and struggles over access: Electricity commercialisation in Tanzania, in: D. MacDonald (Ed.), Electric Capitalism. Recolonising Africa on the Power Grid, Earthscan/HSRC Press, Cape Town, 2009, pp. 400–436.
- [65] K.J. Havnevik, A.C. Isinika, Tanzania in Transition: From Nyerere to Mkapa, Mkuki Na Nyota Publishers, Dar es Salaam, 2010.
- [66] B. Cooksey, The power and the vainglory: anatomy of a malaysian ipp in Tanzania, Ugly Malaysians? South-South Investment Abused, Riksrevisjonen, 2002.
- [67] K.N. Gratwick, A. Eberhard, Demise of the standard model for power sector reform and the emergence of hybrid power markets, *Energy Policy* 36 (10) (2008) 3948–3960.
- [68] Riksrevisjonen, Riksrevisjonens undersøkelse av bistand til ren energi, Dokument 3:12 (2013–2014), Riksrevisjonen, Oslo, 2014.
- [69] B. Dye, Dam Building by the Illiberal Modernisers: Ideology and Changing Rationales in Rwanda and Tanzania, Future DAMS Working Paper 5, 2019.
- [70] Ministry of Minerals and Energy, Electricity Supply Industry Reform Strategy and Roadmap 2014–2025, Government of Tanzania Ministry of Minerals and Energy (Ed.) Ministry of Minerals and Energy, Dar es Salaam, 2014.
- [71] B. Dye, E. Simonov, Stiegler's Gorge Dam, Tanzania, Rivers Without Borders World Heritage Watch (Heritage Dammed: Water Infrastructure Impacts on World Heritage Sites And Free Flowing Rivers), 2019.
- [72] N. Andrews, C. Nwapi, Bringing the state back in again? the emerging developmental state in Africa's energy sector, *Energy Res. Soc. Sci.* 41 (2018) 48–58.
- [73] F. Molle, P.P. Mollinga, P. Wester, Hydraulic bureaucracies and the hydraulic mission: flows of water, flows of power, *Water Altern.* 2 (3) (2009) 328–349.
- [74] F. Ellis, S. Biggs, Evolving themes in rural development 1950s–2000s, *Dev. Policy*

- Rev. 19 (4) (2001) 437–448.
- [75] I. Scoones, Livelihoods perspectives and rural development, *J. Peasant Stud.* 36 (1) (2009) 171–196.
- [76] P. McCully, *Silenced Rivers: The Ecology and Politics of Large Dams*, Zed books, London, 2001.
- [77] E. Mawdsley, L. Savage, S.M. Kim, A ‘post-aid world?’ paradigm shift in foreign aid and development cooperation at the 2011 b usan high level forum, *Geogr. J.* 180 (1) (2014) 27–38.
- [78] B. Morvaridi, C. Hughes, South–south cooperation and neoliberal hegemony in a post-aid world, *Dev. Change* 49 (3) (2018) 867–892.
- [79] J.-P.O. De Sardan, *Anthropology and Development: Understanding Comtemporary Social Change*, Zed Books, 2005.
- [80] C. McFarlane, Assemblage and critical urbanism, *City* 15 (2) (2011) 204–224.
- [81] M.J. Burke, J.C. Stephens, Political power and renewable energy futures: a critical review, *Energy Res. Soc. Sci.* 35 (2018) 78–93.
- [82] J. Allen, Powerful assemblages? *Area* 43 (2) (2011) 154–157.