

MYANMAR'S ENVIRONMENT AND CLIMATE CHANGE CHALLENGES

International IDEA Policy Paper No. 27, November 2022



MYANMAR'S ENVIRONMENT AND CLIMATE CHANGE CHALLENGES

International IDEA Policy Paper No. 27, November 2022

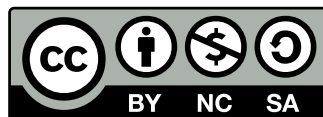
Sharon P. Hickey and Elodie Maria-Sube



International IDEA
Strömsborg
SE-103 34 Stockholm
SWEDEN
+46 8 698 37 00
info@idea.int
www.idea.int

© 2022 International Institute for Democracy and Electoral Assistance

International IDEA publications are independent of specific national or political interests. Views expressed in this publication do not necessarily represent the views of International IDEA, its Board or its Council members.



With the exception of any third-party images and photos, the electronic version of this publication is available under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 (CC BY-NC-SA 3.0) licence. You are free to copy, distribute and transmit the publication as well as to remix and adapt it, provided it is only for non-commercial purposes, that you appropriately attribute the publication, and that you distribute it under an identical licence. For more information visit the Creative Commons website: <http://creativecommons.org/licenses/by-nc-sa/3.0/>.

International IDEA
Strömsborg
SE-103 34 Stockholm
SWEDEN
Tel: +46 8 698 37 00
Email: info@idea.int
Website: <https://www.idea.int>

Cover photo: Sand miners on the banks for the Chindwin river, Myanmar.
Design and layout: International IDEA
Copyeditor: Andrew Mash

DOI: <https://doi.org/10.31752/idea.2022.59>

ISBN: 978-91-7671-579-6 (PDF)

Acknowledgement

We thank various experts for their peer review of the policy paper, including Matthew Baird, Associate Professor Jonathan Liljebad, ANU College of Law and the staff of the National Unity Government (NUG) Ministry for Natural Resources and Environmental Conservation and the Ministry for Electricity and Energy as well as David Rosen, Programme Officer at International IDEA. We thank Thet Linn Wai for her support in organizing meetings with the NUG Ministry for Natural Resources and Environmental Conservation and the Ministry for Electricity and Energy, and providing substantive input to the report. We also thank Nathalie Ebead, International IDEA's MyConstitution Programme Manager for her support in the substantive drafting and review process as well as Marcus Brand, Head of Myanmar Programme at International IDEA for his substantive input.

Contents

Acknowledgement	iv
Abbreviations and acronyms	3
Executive summary	4
Key recommendations	6
Introduction and purpose	8
Chapter 1	
The links between climate change and democracy	11
Chapter 2	
International commitments and pre-coup legal framework	14
Chapter 3	
Environmental, climate change and natural resource management	17
3.1. Sustainable natural resource management	17
3.2. Sustainable development	29
Chapter 4	
Key considerations for interim governance structures and transitional constitutional process	36
4.1. The Federal Democracy Charter: Collective rights in the context of environmental/climate change	37
4.2. Considerations for the inclusion of environmental rights and natural resource management in the future constitution	38
4.3. Considerations for strengthening state capacity and governance structures to address climate change	48
4.4. Considerations for inclusive representation in future governance structures	50
4.5. Considerations to ensure a just climate transition and act on climate injustice.....	57
Chapter 5	
Conclusion and recommendations	60
Recommendations.....	63
References	67
About the authors	76
About International IDEA	77

Abbreviations and acronyms

CPA	Community Protected Areas
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
ERO	Ethnic Resistance Organizations
FDC	Federal Democracy Charter
GDP	Gross domestic product
IEE	Initial Environmental Examination
IGI	Interim Governance Institutions
KNU	Karen National Union
MOALI	Ministry of Agriculture, Livestock and Irrigation
MOEE	Ministry of Electricity and Energy
MONREC	Ministry of Natural Resources and Environmental Conservation
MOPFI	Ministry of Planning, Finance and Industry
MTE	Myanmar Timber Enterprise
NAB-NR	National Administration Body–Natural Resources
NCRMC	National Coastal Resources Management Committee
NDC	Nationally Determined Contributions
NUCC	National Unity Consultative Council
NUG	National Unity Government
SAC	State Administration Council
SEE	State-owned Economic Enterprise
WWF	World Wildlife Fund

EXECUTIVE SUMMARY

Myanmar is one of the countries worst affected by climate change and one of the least equipped to improve its resilience without external support.

Myanmar is rich in natural resources and a global biodiversity hotspot. Its vast natural wealth has been pivotal to growing the economy and providing livelihoods and ecosystem services, especially for people living in rural areas. Myanmar is also one of the countries worst affected by climate change and one of the least equipped to improve its resilience without external support.

In February 2021, Myanmar's military leadership staged a coup that ended Myanmar's decade of limited transition from dictatorship to democracy, from war to peace and from a closed to an open economy. During that transition decade, Myanmar made efforts to strike the right balance between economic and social development, and environmental protection and sustainability.

How to manage natural resources has always been at the heart of Myanmar's history and learning how to manage economic development sustainably became a central question of Myanmar's democratic transition. As pressures on the country's natural resources increase and the impacts of climate change become more intense, particularly on the local communities that depend on these resources for their lives and livelihoods, it will become even more important to find consensus on these questions.

Since the February coup, the people of Myanmar have been mobilizing in a 'Spring Revolution' against the military through protest and an armed resistance led by People's Defence Forces and ethnic resistance organizations (EROs). The groups of actors opposed to the junta and their associated federal-level interim governance institutions (IGIs), are developing a political framework to negotiate both an interim constitution and a permanent constitution for the future Federal Democratic Union of Myanmar. At the local level, a range of actors with varying types and degrees of affiliation with the democratically legitimate IGIs or the junta are contesting or providing governance.

This Policy Paper provides an overview of Myanmar's environment, and climate-related governance challenges. It also identifies key considerations on how a future constitutional framework could guarantee environmental protection, protect biodiversity, promote access to justice and address climate change, informed by international good practices and comparative case studies. Finally, it outlines policy options and makes recommendations.

KEY RECOMMENDATIONS

Key recommendations for the interim governance institutions:

- Myanmar should abide by its existing international commitments, including those made in the Paris Agreement and the Convention on Biological Diversity, and analyse the trade-offs that these commitments entail. A spatial analysis should be made to understand what policy choices mean to the lives of diverse people and in terms of sustainability.
- These analyses should be undertaken in an open and transparent manner to inform and enable policymaking and process support. Access to information, including open access to spatial data, is a first important step. Beyond that, it will be important to create pathways for people of all genders and socio-economic groups to be informed and consulted, and to participate in decision making. The three pillars of the Aarhus Convention should be included in Myanmar's commitments: access to environmental information, public participation in environmental decision making and access to justice.¹
- The question of resource-sharing, which is intrinsically linked to peace in Myanmar, should be part of a wider consultation among IGIs and Myanmar's population. Once peace is secured, there may be further discussions at the local level with the private sector and affected communities.
- In order to operationalize environmental management, it will be important for IGIs and local governance actors to ensure monitoring, evaluation and law enforcement. Such operationalization can only take place once an environmental conservation fund or budget has been established.
- Justice for those who have lost their land should be considered during the transitional constitutional process, keeping in mind that reparations may be competing with environmental protection and economic development.
- Future urban development will require participatory bottom-up approaches coupled with city-wide planning for improved urban resilience. Bottom-up

¹ The Aarhus Convention is considered as one of the leading international agreements on environmental democracy. It protects every person's right to live in a healthy environment.

approaches could be piloted in liberated areas to manage housing and waste.

- Inclusive decision making and governance processes will need to address the historical patterns of exclusion of ethnic minorities, youth and women in natural resource governance and/or previous peace processes.

Key recommendations for the emerging constitutional framework:

- Myanmar's constitution-building stakeholders could consider constitutional provisions that will protect substantive and procedural environmental and human rights, prioritize the protection of ecosystems, mandate clean and safe water, protect land and soil from contamination, provide clear goals for reducing air pollution, regulate natural resources in a transparent and accountable manner, and promote sustainable development. Myanmar must work to include constitutional provisions to combat climate change and reflect the growing international consensus on the necessity of substantive and procedural environmental rights.
- Myanmar's constitution builders must decide which institutions will be mandated to address environmental concerns, and design their legal and political mandates, interactions with other institutions, staffing and funding levels, and mechanisms to ensure their inclusivity, independence and accountability.
- The framers of Myanmar's new constitution must consider the division of powers between the state and substate units in relation to natural resource governance (ownership and management), the allocation of resource rents and fees, and environmental protection.

Key recommendations for the interim governance institutions on legislation and policymaking:

- Integrate and mainstream climate change into the legislative and policy framework.
- Integrate gender and inclusion considerations into the legislative and policy framework.
- Consider a new legal framework for land management, as a sound basis for spatial planning and disaster risk reduction.
- Provide legal standing for Key Biodiversity Areas.
- Create an interim institutional body responsible for agricultural policy.
- Re-evaluate the legal environment for state-owned economic enterprises (SEEs) in natural resources.
- Use the environmental impact assessment (EIA) process, including Strategic Environmental Assessment and other tools, to implement natural resource federalism.
- Formalize small-scale mining and small-scale crude oil extraction and local traditional refining in liberated areas to improve environmental management and possibly increase revenue generation.

INTRODUCTION AND PURPOSE

Reaching a consensus on how to achieve equitable and sustainable access to and benefit from natural resources in Myanmar will be key to a successful political transformation and a long-lasting peace.

The mismanagement of natural resources has been a long-standing issue in Myanmar. The country suffers from the direct and indirect impacts of a deterioration in natural resources, as well as the effects of climate change, such as drought, floods, changed river flows and vanishing biodiversity. Reaching a consensus on how to achieve equitable and sustainable access to and benefit from natural resources in Myanmar will be key to a successful political transformation and a long-lasting peace. Beyond the central question of equity and social justice, human pressures on the environment are likely to keep increasing in Myanmar, while climate change is projected to disproportionately affect the country. The sustainable management of resources and climate adaptation will be essential to safeguarding an equitable standard of living for future generations.

Since February 2021, the people of Myanmar have been mobilizing in a 'Spring Revolution' against the military through protests and an armed resistance led by People's Defense Forces and ethnic resistance organizations (EROs). At the national level, a number of Interim Governance Institutions (IGIs) have been created since the military coup: (a) the Committee Representing the Pyidaungsu Hluttaw, which represents the legitimate members of the Union Parliament; (b) the National Unity Government (NUG); and (c) the National Unity Consultative Council (NUCC), which brings together a large coalition of stakeholders striving for an end to military domination and the creation of a new constitutional framework as laid out in a Federal Democracy Charter (FDC). At the local level, authority is contested, but the military is estimated to have full control over just 17 per cent of the territory (Jones 2022), while the NUG and associated EROs are in control of about half the total area.

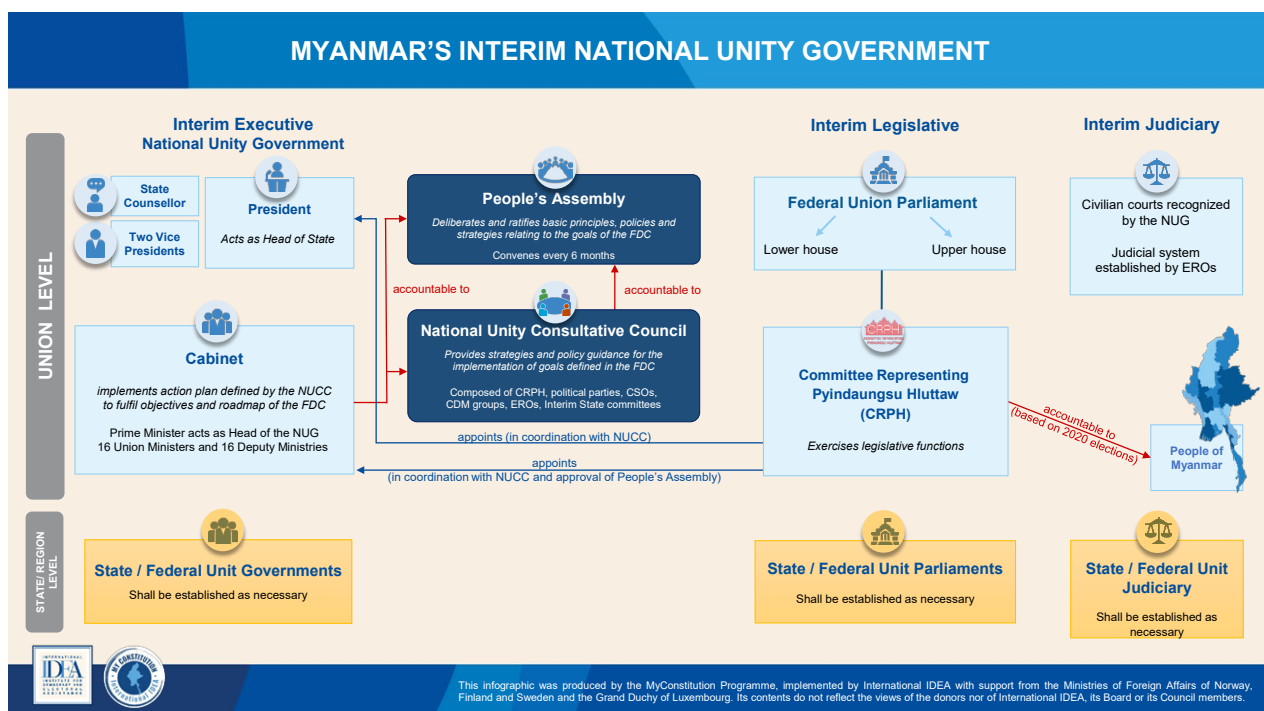
To tackle Myanmar's climate and environmental challenges, Myanmar's legitimate democratic institutions and constitution makers will need to address and adequately reflect environmental rights, ethnic and Indigenous people's rights, gender equality and the rights of current and future generations when

considering the future constitutional framework, drafting legislation and developing policies on environment protection and climate change.

This Policy Paper provides an overview of the state of the environment in Myanmar and related governance and policy challenges. It is intended to inform Myanmar's interim democratic institutions and policymakers of the current challenges facing Myanmar on the environment, natural resource management and climate change. It also presents tools, comparative examples, and good practices for tackling environmental challenges that can be adapted to the Myanmar context. It outlines key considerations on how a future constitutional framework could guarantee environmental protection and climate justice, and address climate change through international good practices, comparative case studies, policy options and recommendations.

In terms of sequencing, it is important that the complex issues related to the environment, climate change and natural resource management, as well as the deeply intertwined issues of social equity and gender equality are thoroughly considered in the interim period, and not set aside until the final stages of the constitution-making process that will result in a democratic federal constitution. It is likely that choices on constitutional design made for the transitional constitution will inform (and perhaps constrain) options for the federal democratic constitution.

Figure 1. Myanmar's interim National Unity Government



Source: International IDEA, MyConstitution programme.

This paper outlines the current context of Myanmar and the importance of democracy in tackling climate change and lists some of the international commitments made by Myanmar before the coup and the key legislation and policies that had been prepared to ensure Myanmar's environmentally sustainable development. It then focuses on the environmental status of and trends in Myanmar, including natural resources management and sustainable development, and explains the key considerations for Myanmar's interim constitutional process and governance structures in terms of environment and climate change. The report concludes with recommendations for the IGIs to consider during the transitional constitutional process and in their policymaking.

Fundamental reforms of environmental governance will be necessary to address injustices in human–nature connections.

This Policy Paper does not seek to provide a definitive plan or framework for managing environmental challenges in Myanmar. Most of the data at hand has not been adjusted to the post-coup crisis and does not capture all the changes that have occurred since early 2021. In addition, fundamental reforms of environmental governance will be necessary to address cases of injustice in human–nature connections, while the international, national and regional contexts are evolving and are likely to influence decision making.

Chapter 1

THE LINKS BETWEEN CLIMATE CHANGE AND DEMOCRACY

Climate change and environmental protection are difficult issues for democracies to tackle. They are at the ‘interface between natural and human systems, and therefore affect all spheres of life but in unpredictable ways’ (Lindvall 2021: 9). The challenges of climate change and environmental degradation require long-term and transboundary solutions, which democracies struggle to find as political decision makers operate with short-term mandates. Climate consequences also tend to disproportionately affect socio-economically weak groups which are often deprived of political influence. Similarly, they disproportionately burden women, who have less decision-making power in Myanmar at all scales and are constrained in adaptive capacities due to pre-existing, deeply entrenched—yet often unacknowledged—gender inequalities. Clear constitutional and legal frameworks with clear channels of accountability, equitable policies, strong democratic institutions and open civil society networks are essential if climate and environmental challenges are to be tackled effectively.

Myanmar is one of the countries worst affected by climate change and one of the least able to improve its resilience without external support. It is the country that suffered most from extreme weather events in the period 2000–2019, mainly due to the infamous mishandling of the Nargis cyclone by the military government in 2008 (Eckstein, Künzel and Schäfer 2021). In 2021, when Myanmar was receiving increased support from the world to adapt to climate change (Atteridge et al. 2019), it was ranked 162nd of 182 countries in terms of vulnerability to climate change and readiness to adapt (University of Notre Dame 2021). Adaptation to climate change is likely to become more difficult as time passes. The protection of some natural resources, such as forest and mangroves, increases the resilience of local communities, but these resources are increasingly threatened by the changing climate.

Progress towards gender equality has been limited in Myanmar. Although gaining ground in the pre-pandemic and pre-coup decade, in 2019 the country was still only placed 118th of 162 countries in the United Nations Development

Climate change and environmental protection are at the ‘interface between natural and human systems, and therefore affect all spheres of life in unpredictable ways’.

Programme (UNDP) Gender Inequality Index. It is ranked the second least gender equitable country in the East Asia and the Pacific region (UNDP 2020) and the least equitable in the Lower Mekong region. Gender inequality prevents women's effective access to information, such as agricultural and fisheries extension services, to water and other services essential to agricultural productivity, and to successful innovation and leadership of small and medium-sized enterprises, as well as other climate adaptation and risk mitigation/development processes in Myanmar.

Myanmar is rich in natural resources and is a global biodiversity hotspot, and the country's resources and ecosystems are closely intertwined with local communities' lives and livelihoods.

Myanmar is rich in natural resources and is a global biodiversity hotspot. Its natural resources—whether timber, oil and gas, jade, potential hydropower or fisheries—have played a major economic role in Myanmar. Its extractive sector accounted for 4.8 per cent of gross domestic product (GDP), 5.2 per cent of state revenues and 35 per cent of total exports in 2017–2018. Myanmar, or more precisely Kachin state, is the source of around 90 per cent of the world's rubies and most of the world's jade (EITI n.d.). Apart from providing economic benefits, the country's resources and ecosystems are closely intertwined with local communities' lives and livelihoods. Its rivers are used for transport, trade and fisheries, while the natural biodiversity (especially non-timber forest products) provides food, fuel, shelter, medicine and a source of cultural and spiritual identity.

Natural resources are predominantly located in the ethnic minority states of Myanmar. Ethnic conflicts have long been closely intertwined with the exploitation of natural resources, both driving and financing war in some areas. The current crisis fuelled by the military is expected to exacerbate this trend, as reports of increased mining, illegal logging and unplanned developments multiply (Frontier Magazine 2022).

The Federal Democracy Charter contains provisions related to the environment and confers powers on the constituent states to 'manage natural resources within the state'.

The Federal Democracy Charter (FDC) promulgated by Myanmar's IGIs in January 2022 (People's Assembly 2022) is a political framework for negotiating an interim constitution and permanent constitution for a future Federal Democratic Union of Myanmar. It contains key principles related to the future federal composition of Myanmar, and the protection of fundamental rights and collective rights for ethnic minorities and women. It also contains provisions related to the environment and confers powers on the constituent states to 'manage natural resources within the state' (article 20). The task of Myanmar's IGIs will be to operationalize these principles in a future constitutional framework, future legislation and government policies.

A National Administration Body-Natural Resources (NAB-NR) has been established, led by the NUG prime minister. It provides strategic guidance on implementation of the FDC principles. The NUG has established two ministries with mandates focused on the environment and climate change: the NUG Ministry for Electricity and Energy and the NUG Ministry for Natural Resources and Environmental Conservation.

An interim resources management framework (IRMF) is currently being drafted by an independent committee of experts, parliamentarians, community leaders

and civil society organizations. It will provide principles for the forestry and biodiversity as well as the mining sectors, invite authorities in liberated areas to halt commercial exploitation of timber and protect forests, and lay the foundations for people-centred resource management (NUG MONREC 2022).

Chapter 2

INTERNATIONAL COMMITMENTS AND PRE-COUP LEGAL FRAMEWORK

Before the military coup, Myanmar saw positive trends towards achieving its SDG targets but still faced considerable challenges.

In the Myanmar sustainable development plan (MSDP), Myanmar committed to achieving the UN Sustainable Development Goals (SDGs). Sustainability was treated as cross-cutting throughout the plan, 'to be mainstreamed into all aspects of its implementation' (Republic of the Union of Myanmar 2018). Before the military coup, Myanmar saw positive trends towards achieving its SDG targets but still faced considerable challenges, as illustrated in the SDG Dashboard in Figure 2.

Figure 2. Myanmar SDG trends



Source: Sachs, J. D., Kroll, C., Lafortune, G. and Woelm, F., *Sustainable Development Report 2022: From Crisis to Sustainable Development: the SDGs as Roadmap to 2030 and Beyond* (Cambridge University Press, Cambridge, 2022), <<https://doi.org/10.1017/9781009210058>>.

Note: This publication is from 2022 but the data is from the period prior to the military coup. These trends only reflect pre-coup efforts, they do not yet capture any consequences of the coup.

Myanmar has made international commitments under the Paris Agreement to tackle climate change through its nationally determined contributions (NDCs), which were developed before the military coup but published in July 2021, and on biodiversity under the Convention on Biological Diversity through its Aichi Biodiversity targets. These commitments are particularly important for understanding the ambitions but also the competing needs for resources in the country. The pre-coup government of Myanmar was working to put policies and tools in place for deciding how resources should be protected, as the country planned infrastructure development linked to economic growth. The key nationally determined contributions and Aichi targets for 2030 are summarized in Table 2.1.²

Table 2.1. Nationally determined contributions and Aichi targets

Sector	Key initiatives
Energy	Reduce reliance on coal from 33 per cent under a business-as-usual scenario. Target for new renewable energy of 11 per cent (2000MW) by 2030.
Agriculture	Reduction in greenhouse gas emissions from agriculture, forestry and other land-uses sector (AFOLU) by increasing the percentage of tree cover in agricultural landscapes.
Forestry and land use	Increase the area of land under Reserved Forest and Protected Public Forest jurisdiction, which are forests used for wood production managed by the Government, to 30 per cent of the total national land area by 2030 (25.61 per cent as of June 2021); and increase the Protected Areas Systems to cover 10 per cent of the total national land area by 2030 (6.08 per cent as of June 2021). The latter is also a biodiversity target under the Aichi framework.
Fuel efficient stoves	Replace traditional fuel wood cooking by liquefied petroleum gaz-based cooking technologies across 1 million households.
Mini-grids	15 per cent of the total rural off-grid rural population (0.9 million people) will gain access to renewable energy sources through off-grid rural electrification by 2030.

Source: Government of Myanmar, Nationally Determined Contributions, July 2021.

Note: The source document was prepared for two years under the pre-coup government. It took many months to be officially published and was finally released after the military coup. Sector specialists consider that it reflects the positions of the pre-coup government.

During its decade of democratic transition, the pre-coup government in Myanmar strove to improve environmental management by strengthening the legal framework in the context of a centralization of natural resources management in the now defunct 2008 Constitution (International IDEA 2022). Although contested and debated, the questions of environmental protection and climate change were a key part of the legitimate government's policy. Throughout this period, laws and plans were developed with much more openness and transparency than in the past in the fields of biodiversity,

² Not all of these commitments are necessarily entirely sound from a scientific point of view. For example, other less CO₂ intensive and polluting technologies can replace LPG for cooking. International commitments adopted by the previous government could be further improved.

forestry, agriculture and environmental management. In 2019, the legitimate government launched a National Environment Policy and the Myanmar Climate Change Strategy and Action Plan, 2018–2030. These policies were a result of active consultations with civil society, which contributed greatly to their acceptability.

During the transition period, Myanmar's legitimate government institutions need to consider how to ensure that Myanmar can meet or even improve its international commitments, including by building on parts of the pre-coup legal framework.

During the transition period, Myanmar's legitimate government institutions need to consider how to ensure that Myanmar can meet or even improve its international commitments, including by building on parts of the pre-coup legal framework as outlined and described below.

Chapter 3

ENVIRONMENTAL, CLIMATE CHANGE AND NATURAL RESOURCE MANAGEMENT

3.1. SUSTAINABLE NATURAL RESOURCE MANAGEMENT

3.1.1. Land and agriculture

3.1.1.1. Key challenges and trends

Land is a central topic for Myanmar's people and its natural environment. Spatial planning and how choices are made on land use are key to natural resources management. The land issue in Myanmar is particularly complex. According to the 2014 Census, 70 per cent of Myanmar's population of 51.5 million people live in rural areas. The vast majority of Myanmar people therefore depend on land for their livelihoods. At the same time, land use choices have a considerable impact on natural resources and the benefits people may get from them.

The absence of a clear and harmonized legal framework affects the environment, particularly forests. Land-use conversion from forests to agriculture has been the major driver of deforestation (Woods 2015). Land in Myanmar is governed by a patchwork of 50 different laws promulgated in the colonial period, the socialist era and under successive military governments, as well as during the decade of gradual democratization since 2011. These laws are not harmonized and often contradictory. The deed registration system established by the British has not been maintained or systematically updated since the 1960s. In many areas, there are no land administration systems in place for the recognition, protection and registration of land tenure rights (Oberndorf 2016). People are highly vulnerable to loss of land tenure rights and land grabbing has occurred in all regions for many decades (Land in Our Hands Network 2015). As the country opened up to foreign investment, larger swaths of land were allocated to agricultural concessions. Land allocated to large-scale agricultural concessions increased by 170 per cent in the period 2010–2013, but only one-fifth of that land had been planted (Woods 2015).

The absence of a clear and harmonized legal framework affects the environment, particularly forests. Land-use conversion from forests to agriculture has been the major driver of deforestation.

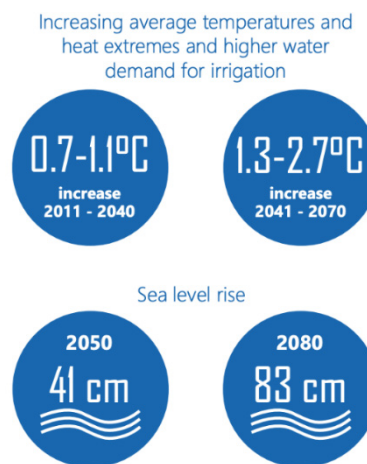
Myanmar land laws and informal custom and practice often reinforce gender inequalities in land ownership and control, which undermines food and nutrition security, livelihoods and adaptive capacities. Weak access to, control over and ownership of land are 'major constraints for female farmers' (ADB et al. 2016: 48) and 'women's right to access and owning land tends to be highly insecure' (ADB et al. 2016: 49). This is obvious in the pre-coup legal framework, such as a 2013 law that requires that 'land be registered in the name of the head of household rather than explicitly recognizing equal rights of women to inherit land or be granted use rights...'. Moreover, customary laws 'often do not afford women equal access to, or control over, land. Many... provide men with greater economic and decision-making power in domestic affairs, thereby allowing husbands or sons to inherit property' (ADB et al. 2016: 49).

Myanmar will have to meet growing demand for nutritious food while securing export revenues from the agriculture sector.

Myanmar's agriculture, fisheries and livestock sectors are important to national economic growth, poverty reduction and food security. Agriculture constitutes about 28 per cent of the country's GDP, 61 per cent of total employment and 16 per cent of total export earnings (MoALI 2015; MoNREC 2017). Although Myanmar is a net food exporter, the rural poor face high levels of food and nutrition insecurity (MoALI 2015). Myanmar will have to meet growing demand for nutritious food while securing export revenues from the agriculture sector. This will place growing pressure on natural resources.

Increasing temperatures and erratic rainfall, combined with the frequent occurrence of droughts and floods, are likely to result in a reduction in agricultural production involving short-term crop failures and livestock losses and long-term productivity declines. In future, parts of inhabited and productive coastal areas could become permanently inundated, while others could be affected by intrusion of saltwater into groundwater systems, soil salinization

Figure 3. Future climate in Myanmar: recent projections



Source: Summarized from: Horton et al. (2017); MONREC (2017).

and coastal erosion processes. Climate change and male migration are already forcing women to take central roles in agriculture and household food security. In future, rural women will continue to play a critical role in building resilience to climate change in the agriculture sector (Horton et al. 2017).

3.1.1.2. *Pre-coup institutional arrangements*

Before the military coup, changes in land policy and governance over the previous decade had not necessarily led to a clearer and more people-centred legislative and policy framework. The Vacant, Fallow and Virgin Land Law, the Foreign Investment Law and the Farmland Law, all passed in 2012, were designed to increase investment and encourage large-scale land use. These laws were criticized for putting investors' interests before securing land holdings for smallholder farmers. The definitions of 'vacant' or 'fallow' jeopardized the land tenure claims of the most vulnerable (Obendorf 2012). Updates of these laws in 2018 reinforced the discrimination against customary land tenure.

In January 2016, parliament passed a new national land use policy (NLUP) following an extensive public consultation process. The National League for Democracy-led government established a National Land Use Committee in 2018 to implement the NLUP. The new policy sought to harmonize existing laws and guide development of a new land law. It did not however resolve the question of customary land tenure.

Under the pre-coup legal framework, management responsibilities were divided between at least 20 government agencies in a complex variety of structures at the federal level and the state/regional levels (Nixon 2018):

- The Ministry of Agriculture, Livestock and Irrigation (MOALI), through its Department of Agricultural Land Management and Statistics (DOALMS), was responsible for maintaining the land registry and cadastral maps through its branches at the township level.
- The Ministry of Natural Resources, Environment and Conservation (MONREC) was responsible for environmental protection, natural resources and forests.
- The Directorate of Investment and Company Administration in the Ministry of Finance, Planning and Investment supported the work of the Myanmar Investment Commission (MIC) and provided permits for foreign companies to lease land.
- The General Administration Department, which was part of the Ministry of Home Affairs, one of the three ministries constitutionally controlled by the military until it passed to civilian control in 2019, in effect exerted significant control over land issues through its offices at the village tract level.

The quasi-federal set-up of the 2008 Constitution also led to a diversity of arrangements as legislative power in some environment-related policy areas was constitutionally assigned to the states and regions or shared between the federal union and the subnational level.

Before the military coup, changes in land policy and governance over the previous decade had not necessarily led to a clearer and more people-centred legislative and policy framework.

The Myanmar Climate Change Strategy and Action Plan, 2016–2030 remains the prime instrument for the implementation of the 2019 Climate Change Policy.

Land dispute resolution mechanisms were unclear and unreliable, and non-existent before 2012. Two different bodies emerged from the enactment of the Vacant, Fallow and Virgin Land Law, and the Farmland Law in 2012. The Karen National Union (KNU), which administered certain areas outside the scope of the 2008 Constitution and its institutions, created its own body for the areas it controlled in the same period. In practice, however, the lack of standards and guidelines resulted in people resolving their disputes informally (Moore 2019).

The Myanmar Climate Change Strategy and Action Plan, 2016–2030 (MONREC 2017) remains the prime instrument for the implementation of the 2019 Climate Change Policy. It has defined sectoral objectives and responses. The Climate Change Action Plan for the Agriculture, Fisheries and Livestock sector aims to promote climate-resilient productivity and climate-smart responses to support food security and livelihood strategies while also introducing resource-efficient and low-carbon practices.

3.1.1.3. Post-coup policies and institutional arrangements

Since the military coup, the complexity of land management means that it has not yet been clearly defined in the future constitutional, legal and policy framework. Nonetheless, principles and short-term measures are emerging. The FDC states that: 'The original owner of all of land and natural resources within a State is the people who live in the State' (FDC, Part 1, paragraph 19).

For the purposes of the Interim Resources Management Framework (IRMF) for Forestry and Biodiversity (NUG MONREC 2022), land has been the subject of consultations within the NUG MONREC in informal bi-weekly meetings and is also mentioned indirectly with reference to forests. The principles defined thus far by the MONREC are that:

- Land governance should be decentralized to the federal units and democratic.
- Future land systems should be community centred.
- Customary land tenure must be recognized and land-use planning should involve a bottom-up process.

Most stakeholders want to see a complete transformation of the Myanmar land governance system.

- Even in a decentralized system, laws will be required at the federal level, such as on the rights of minorities within states and resource sharing across states.
- The IRMF itself highlights as basic principles human rights standards, gender norms and the rights of minorities, including Indigenous people (NUG MONREC 2022, chapter 2(b)).

In the short term, the IRMF for Forestry and Biodiversity and recent informal consultations with NUG MONREC³ indicate that short-term steps are required to document customary land rights and counter possible threats of land-grabbing for large-scale forest, mining and plantation concessions (NUG

³ The Future of Land Governance in Myanmar webinar, September 2022, MONREC.

MONREC 2022, chapter 5); and to provide guidance to liberated areas on bottom-up approaches to land-use planning (NUG MONREC 2022, chapter 7).

3.1.2. Forests and biodiversity

3.1.2.1. Key challenges and pre-coup status

Between 2000 and 2015, Myanmar experienced the third greatest loss of forest cover in the world, involving deforestation at a rate of 546,000 hectares per year, behind only Indonesia and Brazil and equivalent to 1.8 per cent of its forested area (Krakstad et al. 2015). The main causes of deforestation are: a lack of spatial planning and alignment of policies on the environment and conservation with those on agriculture, mining and infrastructure, as described above, weak law enforcement and corruption (Rao et al. 2013; Forest Trends 2022). Historically, rent-seeking in the forestry sector was linked to illicit activities begun during previous military regimes. Analyses by Forest Trends show the losses due to such rent-seeking probably exceeded USD 3.5 billion in 2014–2017 (Forest Trends 2022).

Myanmar's forests are central to its international environmental commitments. As outlined in Table 3.1, Myanmar has committed in its NDCs to increase its forested area, which is a source of timber for the state and local people, to 30 per cent of the total national land area by 2030 (25.61 per cent as of June 2021). Myanmar forests are a significant carbon sink and their depletion leads to vast greenhouse gas emissions. On biodiversity, Myanmar has committed to increase its Protected Area network to cover 10 per cent of its total land area by 2030 (6.08 per cent as of June 2021).

Almost all of Myanmar lies within the Indo-Burma Biodiversity Hotspot, one of 35 global hotspots that support high levels of biodiversity and endemism (Mittermeier 2004). The Indo-Burma hotspot ranks in the top 10 hotspots globally for irreplaceability and in the top five for threats. Myanmar supports an extraordinary array of ecosystems, from mountains with permanent snow and glaciers to extensive forests, major rivers, a large river delta, a dry plateau, a long coastline with offshore islands, and valuable coastal and marine habitats. A 2013 estimate identified 233 globally threatened species, 65 of which are classified as endangered—37 critically so (Rao et al. 2013).

In addition to deforestation and the linked habitat loss, Myanmar's endangered species are victims of the illegal wildlife trade. WWF identified 173 protected wild species offered for sale on Facebook in Myanmar in 2021, 54 of which are on the International Union for Conservation of Nature red list of threatened species (WWF 2021). The current Protected Area network in Myanmar covers considerably less land than the global average of 14.8 per cent. In addition, without increased funding and human resources, protected areas in Myanmar may be no more than 'paper parks'.

The social implications of protected area expansion should not be underestimated. Although the global and local benefits of biodiversity and ecosystem services are well recognized, many of the costs of protected areas,

Between 2000 and 2015, Myanmar experienced the third greatest loss of forest cover in the world.

such loss of land rights, are borne by local people. The social implications of any new protected area should be thoroughly assessed, and they should be designed to ensure respect for and full participation in customary rights. Post-coup, the promulgation of new and illegal protected areas under the State Administration Council (SAC) is likely to take place without any consultation with local communities.

Gender inequalities also shape risks from the forestry sector. The timber industry is dominated by men who also hunt. 'Women are involved in this sector as collectors, producers, and users of non-timber forest products, such as bamboo and rattan, mushrooms, nuts, and medicinal plants, which Myanmar has in abundance' (ADB et al. 2016: 54). While all genders are affected by forest degradation, investments in the timber industry are more likely to benefit men, while potentially undermining women's non-timber forest product-based livelihoods and women's ability to contribute to household food security, which are especially important during crises and shocks.

3.1.2.2. Pre-coup institutional arrangements

Before the coup, Myanmar's forests were managed by MONREC, which was responsible for sustainable forest management, biodiversity conservation, restoring degraded forests, watershed protection, community forests and mangrove conservation. The 1995 National Forest Policy describes different categories of forest: Permanent Forest Estate, which can be used for timber production; Protected Public Forest, with low priority timber which can be harvested by Myanmar people for personal use under certain conditions; and Protected Areas, which should be kept intact because of their biodiversity value.

The pre-coup Government of Myanmar was actively trying to modernize the forestry sector because it has significant economic value, which in the past had been diverted from the national budget; wood is the main energy source for 60–80 per cent of the rural population and has invaluable intrinsic value for local communities; and it aimed to protect its worldwide renowned natural biodiversity and abide by international standards. The legal landscape of forestry was rapidly changing in the years immediately before the coup, following adoption of the New Forest Law in 2018 and the rules associated with it in 2019.

The Myanmar Timber Enterprise (MTE) is a state-owned economic enterprise (SEE) with strong control over the trade in timber. As an entity of MONREC, the MTE exercises authority over the entire timber sector. It is the only source of timber in the legal supply chain. The MTE had a record of regularly misappropriating funds, selling timber below market value and laundering illegal timber. By 2021, the pre-coup government had addressed some of the underlying factors behind this corruption, helping to bring much-needed revenue into the general treasury (Blundell 2022). Post-coup, however, illicit activities are likely to resurface. The MTE had 30,000 staff on its payroll before the coup. Because of the complexity of the sector, it was not a high-profile SEE that the MOPFI planned to reform. However, MONREC received expert advice

before the coup on steps to ensure modernization of the MTE.⁴ To restrict the junta's access to foreign exchange, the European Union and the United States added the MTE to their lists of sanctioned entities following the military coup.

The legal framework in place for Community Forestry makes it possible for communities to manage and share the resources in a section of forest but is imperfect in practice. Based on the 2019 Forest rules and the 2019 Community Forestry Instructions, the legal framework overlaps with the Vacant Fallow and Virgin law, and communities need significant technical, governance and financial resources to be able to put in place community forestry that will yield revenue and increase resilience (International Finance Corporation 2018).

The 2018 Biodiversity and Conservation of Protected Areas Law stipulates a greater role for local communities. The law recognizes Community Protected Areas (CPAs) as a category of protected area and requires the Forest Department to provide 'technical coordination and support' for their management. The law also permits MONREC to allow co-management in collaboration with local communities and defines buffer zones for the socio-economic development of local communities. While the CPA principle could be better implemented, to give more agency to local communities, it is a good start.

The Salween Peace Park is an existing example of a CPA. The declaration of a peace park in the Salween River basin reflects the core aspirations of the Karen people for peace and self-determination, environmental integrity and cultural survival. Recognizing and strengthening the capacities of other communities to manage their resources has tremendous potential for ushering in community-led conservation because local communities have coexisted with the forest and wildlife resources in most of the remaining tracts of rich biodiversity.

3.1.2.3. Post-coup policies and institutional arrangements

Post-coup, existing pre-coup laws and policies are being applied by the NUG MONREC while new policy is being drafted and future legislation formulated. The FDC, Part 1, paragraph 20, states that: 'The State shall have the right to independently manage the exploration, extraction, selling, trading, preservation, and protection etc. of the natural resources within the State'.

The NUG MONREC's structure is similar to the pre-coup structure, replicating the same departments and state enterprises, although with a smaller number of bodies covering mining. A Resource Federalism Task Force was created to act as an independent group of advisers to NUG MONREC. It includes independent experts and civil society and is not under the leadership of the ministry. MONREC encourages active discussions on resource federalism to increase awareness of the concept and understanding of its different dimensions.

The legal framework in place for Community Forestry makes it possible for communities to manage and share the resources in a section of forest but is imperfect in practice.

⁴ Blessing, D., 'Options to Restructure and Reform Myanmar Timber Enterprise', Unpublished, 2019, available on request.

The NUG MONREC principle of 'people centred' natural resource management is being applied, meaning that at the state/region/township level, the ministry allows each entity to manage natural resources according to its interests, while it only provides technical advice.

The NUG MONREC (2022) has taken stock of the depletion of forest resources and the land conflicts through its *Status of Natural Resources Depletion During the Military Regimes in Myanmar*, published in July 2021. NUG MONREC has also developed an Interim Resources Management Framework for Forestry and Biodiversity. The principle of 'people centred' natural resource management is being applied, meaning that at the state/region/township level, the ministry allows each entity to manage natural resources according to its interests, while it only provides technical advice. In the liberated areas in central parts of Myanmar, NUG MONREC implements policies directly through Township Administration Bodies-Natural Resources which comprise people from local communities, parliamentarians and experts. In some ethnic minority areas, the policies and rules of EROs are being applied and NUG MONREC coordinates with them.

As part of the framework, commercial logging, and wildlife trade, including illegal fishing using electric shock devices, are forbidden, as well as the declaration of new protected areas without the consent of local communities. Trading in and transformation of timber logged before the coup for local or public uses is permitted. In other words, the framework halts all commercial forest-related activity. It also recognizes legislation previously developed by some EROs, among which the Forest Law developed by the KNU is of particular interest.

3.1.3. Mining and extractive industries

3.1.3.1. Key challenges and pre-coup status

The desire of ethnic minority groups for more control over and to benefit more from natural resources in their areas has been one of the key drivers of conflict and demands for constitutional change. Before the coup, the extractive sector was pulled into the complex dynamics around three ongoing processes: proposed constitutional reform, peace negotiations between the Union Government and non-state armed groups, and the push for transparency around and more localized distribution of revenue flows. Extractive industries are problematic in Myanmar because people living near extraction facilities are rarely if ever consulted, informed or compensated for any personal or environmental harm, and because local people reap hardly any benefits from the extraction.

Extractive industries play a central role in Myanmar's economy. The upstream oil and gas sector is a major sector for attracting foreign direct investment—over USD 22.8 billion since Myanmar's political and economic transition in 1989. Gas export earnings, for example, were USD 3.5 billion in the fiscal year 2019/2020, a significant source of foreign exchange. Aggregate export revenues of oil and gas accounted for more than 30 per cent of the fiscal revenue in the same year (World Bank 2022). Mining generates significantly less revenue because it is done by small and medium-sized companies that generate less value than the oil and gas sector's large-scale production. Widespread tax evasion and smuggling further erode government revenues from the mining industry (Shortell 2019).

Artisanal and small-scale extractive activity was a major source of pre-coup economic activity in Myanmar. MONREC estimates that more than 400,000 people work as 'hand-pickers' in northern Myanmar's gemstones tracts alone. The effective management of artisanal and small-scale operations poses challenges. The sector has major cumulative social and environmental impacts. Union legislation allows for subsistence and small-scale mining and artisanal oil production, but the barriers to entry are high and few operations are ever formalized, not least due to the lack of formal licensing (and a lack of specific guidelines) and the dangerous working conditions, poor environmental standards, poor environmental compliance, such as discharging waste without treatment, use of harmful chemicals, and illegal logging and hunting, as well as harmful social impacts that include child labour and drug abuse, which remain widespread. The sector was one of the areas in which subnational control was increasing fastest, however, particularly in relation to licensing and revenue collection (Nixon 2018).

3.1.3.2. Pre-coup institutional arrangements

Pre-coup Myanmar's extractive sector was mainly governed by the 1994 Myanmar Mines Law, the 2019 Gemstone Law and the 2017 Petroleum and Petroleum Product Laws, but contracts would typically govern individual extractive projects. A number of other laws and regulations also governed aspects of the sector, on income tax, auditing, environmental management and beneficial ownership disclosure. The mining sector and the gemstones subsector were mainly regulated by MONREC, through the Myanmar Gems and Pearls Enterprise. The petroleum and energy sector was regulated by the Ministry of Electricity and Energy (MOEE), which also oversaw the Myanmar Oil and Gas Enterprise (MOGE), the Myanmar Petrochemical Enterprise (MPE), the Oil and Gas Planning Department and the Petroleum Product Regulatory Department (PPRD). Tax revenues were collected by the MOPFI (EITI n.d.). The Myanmar Gems and Pearls Enterprise was sanctioned by the USA and the EU following the coup in 2021. MOGE was added to the list of sanctioned entities in 2022.

Under a 2015 amendment to the now defunct 2008 Constitution, sub-national governments were supposed to start issuing licences to, collecting licence fees from and monitoring the environmental compliance of artisanal mining. In practice, sub-national governments did not have the competence or means to undertake this work effectively (Bauer et al. 2018).

3.1.3.3. Post-coup policies and existing institutional arrangements

Post-coup, although MOEE has not extracted onshore or offshore oil and gas, onshore petroleum production has declined because many government servants in the energy sector are participating in the Civil Disobedience Movement. The interim Energy Supervision Committee organized by CDM staff from MOGE, MPE and MPPE is attempting to cut-off income to SAC, raise oil and gas revenue through tax collection and manage small-scale oil production in the liberated area. Moreover, the interim Electricity Supervision Committee organized by CDM staff in the government electricity sector is preparing an electrification master plan that includes solar and wind power, gas and coal,

to be in line with the NDC. MONREC also has an active branch of the Myanmar Gems and Pearls Enterprise, although its administration related to mining is much reduced compared to pre-coup times.

The FDC, Part I, Chapter 4, section II, articles 20 to 23 states that:

In the Federal Union, the State shall have the full rights to the revenue stream coming from natural resources that are produced in large quantities. In extraction and production of natural resources, the consent of local communities shall be obtained, and it shall have direct benefits to the development of that area. Separate taxes shall be collected, and a funds programme shall be developed and enacted to remedy the negative impacts affecting the communities and the natural environment and the damage to the ecosystem due to the extraction of natural resources.

As noted above, the NUG MONREC actively engages with Myanmar's people to encourage them to learn about Natural Resources Federalism.

The IRMF mentions in Chapter 4 that 'the MONREC NUG will collaborate with the relevant EROs to remediate, manage and mitigate the damage or impacts caused by resource extraction activities.' The IRMF refers here to a widely used tool for balancing infrastructure development and biodiversity protection known as 'mitigation hierarchy' (Smithsonian's National Zoo & Conservation Biology Institute 2022). This can be applied to the mining sector and beyond, and complements the principles of the IRMF, such as:

- *Avoid*: The IRMF urges avoiding timber extraction and new timber operations; the same could be extended to mining by avoiding the setting up of new large-scale mines.
- *Minimize*: a step on the 'mitigation hierarchy' that invites developers to reduce the duration or intensity of impacts that cannot be avoided. Existing extraction activities in liberated areas should aim to follow best practices in terms health and safety, noise, dust and on-site environmental impact.
- *Rehabilitate/restore*: The aim of this step is to improve degraded or depleted ecosystems following exposure to impacts that cannot be avoided or minimized
- *Offset*: Offsetting aims to compensate for any residual adverse impacts after full implementation of the previous three steps in the mitigation hierarchy. It should be a last resort measure.

The two last steps above are dependent on funds. Myanmar has experience of setting up funds at the local level for use of mining resources for the benefit of the environment and local people. In Shan State, the pre-coup state government established a 'Fund for Poverty Reduction and Environmental Conservation' in a decree from the chief minister. Under its provisions, mines paid a flat fee based on their size and type. A similar fund was set up in Kachin that helped to build a road to a mine in Hpakant (Bauer et al 2018). Such funds would be set up in liberated areas in a transparent manner, allowing people to understand and participate in the decision making on the possible uses of funds.

The NUG MOPFI promulgated a Union Taxation Law 2021. Chapter VIII foresees a 5 per cent tax on gemstones. Chapter IX considers that ‘the Ministries concerned shall administer the tax rates, exemption and relief of any of the tax rates in accordance with the existing law’ and lists ‘forest materials’, ‘production of minerals’, ‘fisheries’ and ‘Oil and Gas’. It was already possible to allocate part of the revenues from these taxes to funds for the benefit of people and nature.

3.1.4. Water and fisheries

3.1.4.1. Key challenges and pre-coup status

Population growth and socio-economic development are the main driving forces behind increased water use as well as urbanization, industrialization, irrigation and hydropower, among other things. Access to safe drinking water among the population increased from 43.7 per cent to 58.83 per cent in the period 2010–2020 (World Bank n.d.). Myanmar has a policy on increasing its agricultural area and the intensity of cultivation to two or even three crops per year (IFC 2018). Agricultural land area in Myanmar increased from 107,670 sq. km in 1969 to 128,890 sq. km in 2018, at an average annual rate of 0.37 per cent (World Data Atlas 2022). This has increased pressure for water abstraction from river and groundwater sources and caused increased run-off of agricultural chemicals.

Hydropower dams will add to these changes in environmental flow and river morphology, trapping sediment and nutrients. They will also hugely disrupt migratory fish populations and subsequently affect local fishing livelihoods (fish is a key source of protein, see below). The choices made on the generation of power will have cumulative impacts on people and nature. Common practice on compensation for dam developments lack substantive integration of gender considerations and thus trigger inequitable processes that lead to unintentionally poor and unequal outcomes.

Both urban and industrial development will increasingly draw on available water resources, both groundwater and surface water. This is likely to negatively affect water quality (Royal Haskoning DHV 2014). The Central Dry Zone region, which straddles large parts of the Mandalay, Magway and lower Sagaing regions, along with Rakhine State and Shan State are the most food insecure, water stressed, climate sensitive and natural resource poor regions in Myanmar. The dry zone has also seen intense urbanization around Mandalay.

In general, Myanmar’s rivers have good water quality for freshwater ecosystems, but many rivers are being put under increasing pressure from human activities and development, and there is a generally considered view that their condition and state of health is declining. A general lack of reliable published information, consistent analyses of water quality or surveys of river conditions make trends in the state of health of rivers in Myanmar difficult to describe in quantitative terms, apart from a concern, expressed by both local villagers and government officials, that the state of health of the rivers is deteriorating (IFC 2018). The main sources of water pollution are sewage, solid

Common practice on compensation for dam developments lack substantive integration of gender considerations and thus trigger inequitable processes that lead to unintentionally poor and unequal outcomes.

waste and industrial mining and agrochemical waste. Hiroshi Sakai (2013) found that 95 per cent of tap water delivered to homes in Yangon city was contaminated with *Escherichia coli* or coliform bacteria.

For the people of Myanmar, the fisheries sector provides employment, secure livelihoods and nutrition. Myanmar's fisheries sector is officially reported to provide employment to 3.2 million people (800,000 full time and 2.4 million part time), or 6 per cent of Myanmar's population (Tezzo et al. 2018). Marine fisheries are of special livelihood importance given that nearly half the population lives in coastal states and regions. Fish also account for about 50 per cent of the quantity of animal source food (meat, eggs, dairy and fish combined) consumed in Myanmar, making it the single most important animal protein (Belton et al. 2015).

The overexploitation of fish stocks has contributed to a severe decline in Myanmar's marine fish resources, reportedly by as much as 90 per cent.

The overexploitation of fish stocks has contributed to a severe decline in Myanmar's marine fish resources, reportedly by as much as 90 per cent since 1980 (Krakstadt et al. 2015). Open access and the 'race to fish' have been the primary drivers of depletion and overfishing. Open access has also played a significant role in the decline of freshwater fisheries. Tender systems exist in many freshwater areas, but tender rights are allocated on an annual basis, creating incentives that favour maximizing extraction over management. Poor enforcement of laws and regulations has also compounded the problem.

With climate change, cyclones and tropical storms along the country's coastline, and floods along major river basins are likely to damage infrastructure. Major disasters can lead affected fishermen to lose their main source of income. Ocean warming and human activities have already affected fisheries worldwide, including in Myanmar. In future, the country's coastal ecosystems such as mangroves, coral reefs and sea-grass beds could be lost, leading to a sharp decline in fish stocks and increased poverty in coastal communities (MCCA/UN-Habitat 2017).

3.1.4.2. Pre-coup and post-coup institutional arrangements

Before the coup, MONREC, MOALI and the Ministry of Transport and Communications (MOTC) were all jointly responsible for water management, and a great number of departments and agencies worked on water and water-related issues. The broad picture of water management saw MONREC as responsible for overall environmental matters and therefore also for water ecosystems, MOALI responsible for irrigation, water quality in dams and reservoirs, and fisheries management for both fresh and coastal environments, and MOTC responsible for water quality on large rivers. However, the picture was fragmented and there was a lack of transparency and coordination regarding responsibilities and decision making. Like the management of other natural resources, institutional arrangements were highly centralized and overlooked traditional claims regarding water sources by ethnic groups. The 2008 Constitution devolved certain functions and powers to the states and regions.

The National Water Resources Committee (NWRC) was set up by the Presidential Office in 2013 to maximize the benefits of water resources according to principles of equality, integrity, sustainability and inclusiveness. The NWRC was made responsible for drawing up and implementing an integrated water management system, and developing a national integrated water management strategy, a national water resources policy, a water framework directive and a water law. A National Water Policy for Myanmar was approved by the NWRC in 2014. It proposed a framework for the creation of a system of laws and institutions and a plan of action with a unified national perspective, included in the Myanmar National Water Framework Directive (NWRC 2015).

A National Coastal and Marine Resources Management Committee was created, chaired by the vice president, with coastal chief ministers, MONREC, MOALI and the navy represented, but it is now defunct. The MoALI Department of Fisheries was the main manager and repository of information for fisheries management, although some issues overlapped with MONREC or the navy.

The fisheries sectors were regulated by the Myanmar Marine Fisheries Law (1990), the Freshwater Fisheries Law (1991) and the Aquaculture Law (1989). The states and regions did not have any constitutional rights to manage Myanmar's offshore marine fisheries. Inshore marine fisheries and inland fisheries were both regulated by the Freshwater Fisheries Law (1991). The defunct 2008 Constitution allowed each state and regional government to draft its own freshwater fisheries legislation. The Ayeyarwady Region Freshwater Fisheries Law (2018) recognizes the rights of communities to form community fisheries associations and the Rakhine State Freshwater Fisheries Law (2014) provides a legal basis for community fisheries co-management.

Post-coup, the impact of the FDC on governance arrangements is yet to be determined. Water and fisheries have not yet been included in the NUG framework. In the absence of a Ministry of Agriculture, Livestock and Irrigation, there is currently an institutional gap for fisheries management, as it used to be managed.

Water and fisheries have not yet been included in the NUG framework. In the absence of a Ministry of Agriculture, Livestock and Irrigation, there is currently an institutional gap for fisheries management.

3.2. SUSTAINABLE DEVELOPMENT

3.2.1. Infrastructure development

3.2.1.1. Key challenges and pre-coup status

Myanmar's GDP grew at a rate of over 7 per cent in the period 2013–2019 but new investment posed environmental challenges. Foreign direct investment (FDI) played a major role through investments in the energy, agriculture, industrial and mining sectors. If not managed properly, however, these large-scale investment projects can also carry the significant risk of adverse environmental and social impacts.

Projects lined to China's Belt and Road Initiative (BRI) attracted particular attention because of their scale and potential impact. There are two major BRI-related projects in Myanmar: (a) an East–West corridor connecting China through Mandalay and central Myanmar with India and Bangladesh; and (b) a North–South corridor connecting the East–West corridor with the Indian Ocean via Yangon. A USD 7.3 billion deep water port in Kyaukpyu township, Rakhine State, is also planned, and was confirmed when the SAC invited tenders in 2021. WWF noted in 2018 that approximately 24 million people live in these areas and could be impacted by increased sedimentation due to upstream infrastructure development, deforestation and other land use change (Helsingen 2017). If forests in these areas are lost, either to road construction or land use change, flood risks to both people and infrastructure investments could significantly increase.

3.2.1.2. Pre-coup and post-coup institutional arrangements

The Myanmar Sustainable Development Plan launched in 2018 aimed to lift people out of poverty and to offer sustainable livelihoods, nutrition security, access to electricity and connectivity, education and health services that meet all needs. Goal 3 on private sector growth identifies the need to build infrastructure to provide services and facilitate economic growth, but also to establish effective social and environmental safeguards against the negative impacts of infrastructure development.

Environmental impact assessment is an environmental decision support tool to determine the potential environmental, social and health effects of a proposed development.

Environmental impact assessment (EIA) is an environmental decision support tool that provides information on the likely impacts of development projects for those taking decisions on whether a project should be authorized. The purpose of an EIA is to determine the potential environmental, social and health effects of a proposed development, so that decision makers are informed of the likely consequences of their decisions and also more accountable. It is intended to facilitate informed and transparent decision making while seeking to avoid, reduce or mitigate potential adverse impacts through the consideration of alternative options, sites or processes.

Pre-coup, the Government of Myanmar published an EIA procedure in 2015. It requires that project proponents undertake public consultation at the scoping stage and, depending on the size of the project, also during the EIA report preparation. The procedure is in line with environmental legislation in the region and generally meets international good practice standards (Schulte and Baird 2018). Full public disclosure requirements throughout the EIA process are described in draft Guidelines on Public Participation in Myanmar's EIA Processes, which were drafted in 2017 but never fully approved. Sectoral guidelines on oil and gas, hydropower EIA and mining EIA/IEE/EMP guidelines, were prepared with the support of international organizations. The Environmental Conservation Department was established as the environmental protection and regulatory branch of MONREC in 2012. According to the NUG MONREC organigram, the Environmental Conservation Department is a large department with responsibilities in every state and region, possibly with the aim of collecting detailed information on ongoing environmental damage.

Insufficient human resources in the EIA department and delays in responses from projects meant that the EIA review and approval process took much longer than set out in the EIA procedure (2015). As of February 2019, 2,947 reports had been submitted. Nearly all reports had been replied to (89 per cent) but only a few were approved (7.6 per cent). The mining sector accounted for 72.2 per cent of the reports submitted (World Bank 2019a). Few EIAs were published. The absence of an online database to enable stakeholders to see which investments are undertaking EIAs, and to track progress and access reports reduced the integrity of the process (Myanmar Centre for Responsible Business, 2020). The EIA procedure was new and expertise in environmental and social assessments was lacking.

Gender aspects of infrastructure development were not monitored and women's inclusion was not mainstreamed in the EIA procedure. Gender-blind data collection and lack of data on gender-related dimensions of development, including on gender-based violence, restrict evidence-based policymaking and recognition of inequalities (Alliance for Gender Inclusion in the Peace Process n.d.; Minoletti 2017). Overall, since 2011, policymaking and budgeting have taken some 'tentative steps ... for example the increased allocations to health and education, and the drafting of a Prevention of Violence Against Women Law. Nevertheless, policymaking and budgeting remains largely gender-blind and tend to continue to privilege male needs and preferences' (Minoletti 2017:1).

In parallel with the Myanmar Sustainable Development Plan (MSDP), in 2019, pre-coup, the Government of Myanmar set up a Project Bank. The Project Bank was a publicly accessible database on projects of a value over USD 1 million that government agencies planned to implement to achieve the MSDP goals and strategic action plans. Projects included in the Project Bank were subject to a special screening and prioritization process by a joint committee of key ministers and officials from the National Economic Coordination Committee, the Planning Department, the Project Appraisal and Progress Reporting Department and the Myanmar Development Institute (World Bank 2022). The aim of the Project Bank was to increase transparency in and planning of major infrastructure projects. The Planning Department received support in 2020 from several development partners to start screening projects against environmental and social criteria and to mainstreaming the environment into infrastructure planning. The MSDP, the EIA procedure and the Project Bank were promising but also highly contested, as it was unclear where the balance between economic development and environmental and social impacts would be struck.

As mentioned above, post-coup the IRMF proposes concrete steps on environmental monitoring that are an effective bottom-up approach to environmental impact data gathering and possible remediation: 'In accordance with international standards, NUG MONREC shall collaborate with the local communities and relevant stakeholders on the interim people-centred resource management measures to assess, monitor and remediate the environmental and social impacts, and other forest land conflicts that were caused or are

Gender-blind data collection and lack of data on gender-related dimensions of development restrict evidence-based policymaking and recognition of inequalities

likely to be occasioned by the unregulated production of natural resources, expansion of commercial and industrial plantations, agricultural land expansion, and large-scale infrastructure development and extraction projects (Chapter 5)'.

3.2.2. Urban development and air pollution

3.2.2.1. Key challenges and pre-coup status

Myanmar is typically perceived as one of the least urbanized countries in Asia, with only 30 per cent of its population living in urban areas (Republic of the Union of Myanmar 2015). The population of Yangon is estimated at 5.2 million (Republic of the Union of Myanmar 2015), accounting for 35 per cent of the country's urban population. However, the Japan International Cooperation Agency (JICA and YCDC 2014) estimates that a further 6.48 million people live in the unofficial Yangon Metropolitan Area, bringing the proportion of the country's total population living in the Yangon area to 48 per cent. The unofficially defined 'Greater Yangon' comprises the city and six peripheral townships: Hlegu, Thanlyin, Kyauktan, Twantay, Htantabin and Mawbin (JICA and YCDC 2014, quoted in Sabrié 2019). Greater Yangon's population growth rate was 2.6 per cent in 2018, which would mean a further 5.2 million inhabitants by 2040 (Sabrié 2019), from both migration and urban births. It is also estimated that a further 7.1 million citizens currently living in rural areas will move to urban areas by 2050 (World Bank 2019b).

In a warmer climate, the risk of slow- and rapid-onset disasters such as droughts, coastal inundation, floods and tropical storms will increase, which could impede Myanmar's urban development. Urban centres located in coastal areas and the Delta Zone are already experiencing cyclones, flooding, sea level rise and water shortages. Low-lying coastal towns such as Bogalay may have to redesign their infrastructure entirely or even partly relocate because of sea level rise (MONREC 2017). Inland towns and cities are exposed to deadly hazards such as river and flash foods, droughts and heatwaves (MCCA/UN-Habitat 2017).

Myanmar is likely to see significant population movements from low-lying coastal areas to large cities linked to sea level rise.

Myanmar is also likely to see significant population movements from low-lying coastal areas to large cities linked to sea level rise. Large-scale disasters such as Cyclone Nargis in 2008, which affected 2.4 million people, had enormous, long-lasting socio-economic consequences, including loss of livelihood and income opportunities. High migration flows often lead to the establishment of informal settlements located in the most at-risk zones of towns and cities, which increases the number of people exposed to climate-related hazards such as floods.

The vulnerability of urban areas in Myanmar is rooted in inadequate urban planning, poor construction techniques and low-quality infrastructure, such as lack of drainage, water and sanitation systems, an underdeveloped basic services sector and limited local capacity country-wide. Without adaptation, natural hazards triggered by climate change will have a devastating effect on urban infrastructure and services. As the population grows, securing water and

electricity in conditions of increasing demand will present major challenges to towns and cities in the future, while water will be less available due to climate change. At the same time, rapid-onset disasters will affect infrastructure and services.

Air pollution monitoring is limited in Myanmar; for example, the Air Visual real time monitoring app only has one air pollution sensor in Yangon, while smaller HAZE scanners measure air pollution in the rest of the country. An assessment in seven Yangon townships by Yi et al. (2018) found that fine particles (particulate matter, PM_{2.5}) readings were typically highest in the morning and evening. In Hlaingtharyar Township, an industrial area, concentrations of PM_{2.5} were high (164 ± 52 micrograms per cubic meter of air ($\mu\text{g}/\text{m}^3$)) in the morning and ($100 \pm 35 \mu\text{g}/\text{m}^3$) evening, while in Tamwe, a residential area, they ranged from $130 \pm 102 \mu\text{g}/\text{m}^3$ in the morning to $69 \pm 27 \mu\text{g}/\text{m}^3$ in the evening (Yi et al. 2018). The current WHO 24-hour mean standard for PM_{2.5} is $15 \mu\text{g}/\text{m}^3$, making the readings in the Yangon townships far in excess of the 'safe' standard.

Informal and fragile housing will be particularly at risk from climate shocks. There is currently limited information available on the settlements in liberated areas but, in the long term, new and informal housing will probably emerge, and more demands will be made on the limited resources in towns that are hosting internally displaced persons. People may not have the financial means to access safe housing.

3.2.2.2. Pre-coup and post-coup institutional arrangements

Pre-coup, Myanmar was in the early stages of urbanization and was aiming to integrate climate change into new policy and legislative frameworks. The first efforts in this direction were made with the revision of the National Building Code, which was updated in 2016. The Code provides guidelines that regulate building and construction activities across the country, including safety measure and standards, rules on use of disaster-resilient materials, building design and construction techniques. Importantly, the updated code has specific provisions on energy efficiency and water use, and on green buildings. Enforcement of the code could help the country to achieve its greenhouse gas emissions reduction targets. In addition, the Ministry of Construction was drafting a National Urban Policy, which would have addressed climate change in urban areas.

National Environmental Quality (Emissions) Guidelines came into effect in December 2015. The guidelines set out performance levels and measure for the regulation of effluent and emission controls in various environmental areas, such as air emissions, noise pollution, dust and water, as well as wastewater effluent and discharge from development projects. The guidelines are based on the International Finance Corporation's Environmental Health and Safety Guidelines (Schulte and Baird 2018). Other important pieces of legislation include the City Development Law for Yangon City of 2018, and the Myanmar National Waste Management Strategy and Master Plan, 2018–2030. However, these regulations are not fully supported by solid law enforcement and combine low levels of compliance with insufficient infrastructure.

As the population grows, securing water and electricity in conditions of increasing demand will present major challenges to towns and cities.

Myanmar is one of the few countries in Southeast Asia that is yet to establish national air quality standards.

Myanmar is one of the few countries in Southeast Asia that is yet to establish national air quality standards. A survey of air quality policies by the UN Environment Programme in 2015 found that while there is no national air quality policy, the Myanmar Agenda 21 includes strengthening air quality management as one of its four programme areas. In Yangon, businesses must propose a pollution control plan before establishment, but this does not apply beyond the city. There are no limits on vehicle emissions and low octane fuels are common, which increases emissions. Importing cars produced before 2000 has been banned.

Post-coup urban issues have not been reflected in the current responsibilities of the Ministry structures of the NUG or in the FDC.

3.2.3. Circular economy and waste

3.2.3.1. Key challenges and pre-coup status

Ineffective waste management could lead to an increased risk of ecosystem pressure, health problems, water and air pollution, and other threats to achieving the UN Sustainable Development Goals. Rapid urbanization in Myanmar has resulted in issues linked to informal settlements, transport, and pollution, and all of these are exacerbated by poor regulation of resource consumption and waste management. It is estimated that Yangon produces over 4,000 tonnes of municipal waste daily, 13 per cent of which is categorized as plastic waste (Switch Asia 2020).

Furthermore, Myanmar's industrial sector was on the rise before the military coup, and the highest contributor to GDP. However, most of these industries are still operating the concept 'take-make-waste', and there is inadequate infrastructure for waste management. Garments, consumer goods, iron works and food are the four most significant waste generating sectors, approximately 8,000 tonnes per month, where around 3,000 tonnes is recycled and 5,000 ends up in the landfill (Prevent Plastics 2021). The burning of waste materials is still common with and there is little segregation of waste. Dependence on informal waste workers to segregate waste also leads to health risks for the workforce, inefficiency, and unsustainable segregation practices.

In the expectation that Myanmar's economy will again grow rapidly once democracy and peace have been restored, it is important that the country adopt circular practices. Although there is no single definition of a circular economy, the approach can be defined as an economic concept that aims to keep resources in systems of loops. Research suggests that implementing circular economy approaches bring more benefits to companies in the long run. These benefits can result from more efficient energy consumption, new potential markets and reduced inputs of virgin materials, and they all directly impact achieving the SDGs.

The current situation in liberated areas is that an influx of internally displaced people could lead to host towns being overwhelmed with waste in the short to medium term.

3.2.3.2. *Pre-coup and post-coup institutional arrangements*

Pre-coup, there were already several laws and policies in place to regulate waste management in Myanmar (AIT RRC:AP n.d.), notably:

- The City Development Law (Yangon City 2013, 2018; Mandalay City 2016), which aims to develop systemic waste disposal and collection to support community-based 3R (reduce, reuse, recycle) practices.
- The Environmental Conservation Law (Pyidaungsu Hluttaw Law No. 9/2012), which outlines the roles and responsibilities of MONREC on solid waste management.
- The Myanmar National Waste Management Strategy Master Plan (2018–2030).
- At the municipal level, standard practices on block collection, communal depot collection, house-to-house collection, street sweeping and limiting collections.

However, solid law enforcement was absent and there were low levels of compliance. Myanmar has no environmental quality standards on waste management, which makes enforcement of these laws in industries more challenging.

Post-coup, waste management and the question of the circular economy are not a priority in the current transition period, but they can be part of the transition response and should be part of future legislation.

Chapter 4

KEY CONSIDERATIONS FOR INTERIM GOVERNANCE STRUCTURES AND TRANSITIONAL CONSTITUTIONAL PROCESS

Constitutions can play a vital role in bridging the protection of the environment and the rights of future generations through innovations in constitutional design.

Constitutions can provide a stable framework for addressing climate change and offer multiple advantages. They can guarantee substantive and procedural environmental rights, shape political behaviour, protect the intrinsic value of a sustainable environment and provide opportunities to take part in socio-political dialogues. Constitutions can also play a vital role in bridging the protection of the environment and the rights of future generations through innovations in constitutional design. Crucially, enshrining constitutional protections bypasses short-term political considerations tied to election cycles in favour of longer-term protection of the environment.

Robust and innovative institutions play a key role in this regard in promoting, protecting, monitoring and vindicating environmental rights. Constitutionalized institutions—such as courts, legislatures, ombudspersons and other government entities—allow interventions at different points of the legislative and policymaking process on environmental issues.

While constitutions provide a fundamental framework for the protection of the environment, they must be complemented by legislation and government policy as well as training, expertise and access to scientific knowledge to tackle the challenge of environmental degradation and the adverse effects of climate change. As outlined in Chapter 3, Myanmar is one of the countries worst affected by climate change and its natural environment is at risk. The post-coup constitutional process as outlined in the FDC provides a unique opportunity for Myanmar's interim government institutions—the National Unity Government, the Committee Representing the Pyidaungsu Hluttaw and the National Unity Consultative Council—to ensure that environmental rights and natural resource management are effectively included in future constitutions (at both the union and the state level) and operationalized in legislation and policies. It also provides the opportunity to set up effective state bodies for environmental regulation, oversight and enforcement.

Nonetheless, discussions on the environment and natural resources cannot be divorced from conversations about the economic model of the country and the long-term management of depletable resources. Natural resource federalism must be informed by principles, laws and regulations that establish minimum standards of environmental protection and coordinated efforts to combat climate change and prevent environmental degradation.

4.1. THE FEDERAL DEMOCRACY CHARTER: COLLECTIVE RIGHTS IN THE CONTEXT OF ENVIRONMENTAL/CLIMATE CHANGE

The FDC, which has been endorsed by Myanmar's interim government institutions, is the post-coup political framework that provides a roadmap to a transitional and permanent constitution guided by basic principles (Part I) and an outline of interim government arrangements (Part II).

The FDC contains a comprehensive catalogue of human rights, including collective and individual rights that are due to all people, and rights of citizens. Article 54 of the FDC (Part I) highlights environmental rights and in particular the right of all citizens to a healthy environment. It specifically highlights the rights of Indigenous people, stating that: 'The Federal Union and respective State Governments shall recognize the rights of Indigenous people to protect and preserve the natural environment and their rights to control and limit the excessive extractions of natural resources that will damage the natural environment'. There is no detail, however, about the scope of the rights belonging to these distinct rights holders, and the general language on human rights in the Charter remains open to restrictive interpretation without further detail on independent protection mechanisms (the possibility of direct appeal to a supreme judicial body such as a supreme court or constitutional court).

The FDC also contains principles on federalism and decentralization that will need to be considered, negotiated and further operationalized by Myanmar's legitimate democratic actors when defining the future system of power sharing or competencies between the Union and states/regions in relation to the protection of the environment and sharing of natural resources. The FDC defines the nature of constituent power in a future federal Myanmar by highlighting that 'sovereign power originally belongs to the constituent units ('member states') and the people in these states'. However, the Charter does not specify the number of sub-national units the criteria by which they might be defined or whether new units will be permitted or called for. This amounts to a coming-together or (con-)federation of sovereign constituent units, with a central state that only carries out the functions explicitly given to it by the states. Importantly, however, exactly who these peoples and states are, is left open, as an issue that is likely to require negotiation in the future.

Significantly, according to the Charter, all powers will be divided between the central (federal) government and constituent unit governments (legislative,

judiciary and executive). The allocation of responsibilities between central and constituent unit institutions will be based largely on the principle of subsidiarity, whereby power is allocated to the lowest level of government that is best able to address a policy issue (FDC, Part I, Chapter 4, section III, article 6). The FDC also emphasizes that the states and regions have the power to draft their own constitutions (FDC, Part 1, Chapter 4, section III, article 12).

In relation to future institutions, the FDC outlines several independent commissions that may be relevant to securing and protecting environmental rights, but where mandates and relationships must be further defined. These include a Commission on Protecting and Preserving Minority Rights and a Human Rights and Anti-Discrimination Commission, a Farmer and Land Rights Commission. These commissions could be constituted at the Union and/or state and region level.

On land and natural resources, the FDC highlights that the ownership of land and natural resources lies with the people of a state.

On land and natural resources, the FDC highlights that the ownership of land and natural resources lies with the people of a state. Specifically, each 'shall have the right to independently manage the exploration, extraction, trading, preservation, and protection of the natural resources within the state', as well as the right to manage and benefit from revenues earned from natural resources, and the 'extraction and production of natural resources shall require obtaining the consent of the people of the respective local communities' (FDC, Part 1, Chapter 4, section III, articles 21, 22, 23). The FDC also states that taxes and funding programmes should be established and used to counter the negative impacts of environmental damage resulting from natural resource extraction on communities and the environment. These provisions have policy implications for the interim government institutions, particularly the NUG and the future state/regional governments, which have yet to constitute themselves.

4.2. CONSIDERATIONS FOR THE INCLUSION OF ENVIRONMENTAL RIGHTS AND NATURAL RESOURCE MANAGEMENT IN THE FUTURE CONSTITUTION

There is a growing movement that favours incorporating protections for the environment in constitutions. Environmental provisions currently in constitutions span rights and duties, provisions related to natural resource management and provisions related to institutions or bodies for environmental regulation, oversight and enforcement. Newer constitutions tend to include more robust provisions, while a handful (approximately 11 worldwide) explicitly mention a state duty to combat climate change.

This section surveys the types of environmental and natural resource management provisions currently contained in constitutions⁵ that may provide

⁵ The following section utilizes forthcoming research by Sharon Pia Hickey. All the constitutions, articles and sections referred to in this section can be found in searchable texts on the Constitute website, <<https://www.constituteproject.org>>.

useful context for Myanmar's transitional and permanent constitution-making processes, and analyses constitutional design and process considerations linked to these provisions.

4.2.1. Overview of constitutional environmental provisions

4.2.1.1. Substantive environmental rights

As of November 2022, more than 100 of the world's constitutions contain explicit provisions on the right to a healthy environment. This is also reflected in the FDC, which states that 'Every citizen of the Federal Union shall be free from sufferings resulting from environmental damages and is entitled to a natural and healthy environment'. The right to a healthy environment is generally interpreted as the right to clean air, clean water, healthy food, robust ecosystems and non-toxic conditions in which to work and live. It can be expressed as an individual or collective right. For example, article 33 of Bolivia's Constitution states that 'Everyone has the right to a healthy, protected, and balanced environment. The exercise of this right must be granted to individuals and collectives of present and future generations, as well as to other living things, so they may develop in a normal and permanent way'.

In states without a constitutional right to a healthy environment, other substantive provisions, such as the right to life, health or dignity, have been judicially interpreted as overlapping with or encompassing the right to live in a healthy, clean, safe and ecologically balanced environment. The wide constitutionalization of this right has been bolstered by the international community's acknowledgement of a human right to a clean, healthy and sustainable environment, first recognized by the UN Human Rights Council in 2021 in Resolution 48/13, and then by the UN General Assembly in 2022 in Resolution A/76/L.75. It is also contained in article 28 of the Association of Southeast Asian Nations Human Rights Declaration.

Some states, especially in Latin America, constitutionally or legislatively recognize the inherent rights of nature. This innovation regards nature as a legal being with inherent rights to be respected and protected, and to regenerate, rather than as a collection of resources to be consumed and exhausted by human activities. These eco-centric provisions can also entail a right of action in court by concerned individuals, groups, non-governmental organizations or ombudspople to protect the rights of nature.

Land rights are a key issue for Indigenous and local communities, which may depend on the land for their livelihoods. Some constitutions, especially in Latin America, protect territorial districts and collective land ownership for Indigenous peoples, and provide for attendant rights to use and develop these lands. This conception is related to the right to culture and access to natural resources.

4.2.1.2. Procedural environmental rights

At least 36 states have constitutionalized procedural rights for environmental issues. These include the rights to information, participation, consultation and

Table 4.1. Examples of procedural environmental rights in constitutions

Right to information	Constitution of Zambia 1991 article 255(m)	The management and development of Zambia's environment and natural resources shall be governed by the following principles: ... access to environmental information to enable people to preserve, protect and conserve the environment.
Right to participation	Constitution of Ethiopia 1994 article 92(3)	People have the right to full consultation and to the expression of views in the planning and implementation of environmental policies and projects that affect them directly.
Right to be consulted	Constitution of Bolivia 2009 article 30(II)(15)	Nations and rural native Indigenous people have the right 'To be consulted by appropriate procedures ... each time legislative or administrative measures may be foreseen to affect them. ... the right to prior obligatory consultation by the State with respect to exploitation of non-renewable natural resources in [their] territory ... shall be respected and guaranteed, in good faith and upon agreement'.
Right to access justice	Constitution of Kenya 2010 article 70(1)	If a person alleges that a right to a clean and healthy environment ... has been, is being or is likely to be, denied, violated, infringed or threatened, the person may apply to a court for redress in addition to any other legal remedies that are available in respect to the same matter.
Right to just administrative action	Constitution of South Africa 1996, section 33	Everyone has the right to administrative action that is lawful, reasonable and procedurally fair National legislation must be enacted to give effect to these rights, and must provide for the review of administrative action by a court or, where appropriate, an independent and impartial tribunal.

Source: Constitute, The worlds constitutions to read, search and compare, <<https://www.constituteproject.org/?lang=en>>, accessed 22 November 2022.

Note: All cited constitutional provisions can be found in the searchable texts of the respective constitutions on the Constitute website.

access to justice in matters relating to the environment, which are reflected in the Aarhus Convention.

These rights compel government transparency and allow citizens to play a meaningful role in decision making on environmental plans, policies, laws and projects, and can further empower citizens to play an active role in oversight and enforcement. A supplementary right to just administrative action offers an additional layer of oversight and an avenue for citizens to challenge state decisions regarding the environment on the grounds that they are unlawful or procedurally unfair (alleging, for example, that an environmental impact assessment was insufficient).

The FDC appears to envisage strong procedural environmental rights by guaranteeing that 'The extraction and production of natural resources shall require obtaining the consent of the people of the respective local

communities' The need to obtain consent rather than conduct consultations implies a binding decision for affected communities on whether to extract and process natural resources located on the territories they inhabit. The state would need to ensure a process of gaining consent that inclusively engages affected stakeholders (including women and youth) in a robust and transparent decision-making process.

The FDC further obliges the Union and state governments to 'recognize the rights of Indigenous people to protect and preserve the natural environment and their rights to control and limit the excessive extractions of natural resources that will damage the natural environment'. This is a strong statement of Indigenous rights, albeit with a definitional issue of what would be considered 'excessive' extraction. Interpreting and implementing this robust recognition of Indigenous land rights, including the right to control and limit excessive extraction of natural resources, would require further elaboration to determine scope and interpretation, as well as management of potential disputes.

4.2.1.3. State environmental duties

Constitutional provisions outlining state environmental duties can include, for example, controlling pollution, prohibiting the importation of toxic waste, safeguarding biodiversity, creating or maintaining natural reserves and parks, promoting environmental quality in rural areas and ensuring that tax policy makes development compatible with protection of the environment.

Myanmar people are acutely aware of the impact of climate change and particularly concerned about flooding (Seah et al. 2021). In addition, 70 per cent or more of people living in rural Myanmar are highly forest dependent, with higher levels among the poor. Rural communities depend on forests for wood fuel, bamboo and rattan, fodder and forage for livestock, wild fruits and meat, and medicine (Open Development Myanmar 2020). Supporting climate adaptation and protecting forests are two immediate imperatives for Myanmar people. It will be important to guarantee environmental protection once the country's economy is attracting more investment again.

A growing number of constitutions reference climate change in relation to state environmental duties. Ecuador's Constitution is the most concrete in its formulation: 'The State shall adopt adequate and cross-cutting measures for the mitigation of climate change, by limiting greenhouse gas emissions, deforestation, and air pollution; it shall take measures for the conservation of the forests and vegetation; and it shall protect the population at risk' (article 414).

Some constitutions oblige the state to develop sources of renewable energy, or to ensure an affordable and reliable supply of energy. For example, Nepal's Constitution outlines that, 'The State shall pursue a policy of developing and producing renewable energy, ensuring cheap, easily available and dependable supply of energy, and making an appropriate use of it to meet the basic needs of the citizens' (article 51(g)(3)).

Many constitutions specify the ownership of natural resources, state rights to exploit, grant concessions or restrict use, and state responsibilities to manage, conserve and rehabilitate.

Environmental provisions can be further illuminated and bolstered by principles of environmental law. For example, Chile's proposed 2022 constitution (later rejected) stated that 'The principles for the protection of nature and the environment are at least those of progressivity, precaution, prevention, environmental justice, intergenerational solidarity, responsibility and fair climate action' (article 128).

4.2.1.4. Natural resource management provisions

Many constitutions address natural resources, from water to land, fauna, minerals and mining, soil/subsoil, air and energy. These generally entail provisions that specify the ownership of natural resources, state rights to exploit, grant concessions or restrict use, and state responsibilities to manage, conserve and rehabilitate. Constitutions can also set out who has the right to receive revenues from the use of natural resources.

Several constitutions contain fixed commitments related to the environment that give a precise quantum. For example, the Constitution of Bhutan obliges the state to 'ensure that, in order to conserve the country's natural resources and to prevent degradation of the ecosystem, a minimum of 60 per cent of Bhutan's total land shall be maintained under forest cover for all time' (article 5(3)). A fixed constitutional commitment delineates the magnitude of activity permitted or required of government or other actors and aims to limit interpretation disputes (Levy 2022). Since Myanmar had 26 per cent of its land covered by forest as of June 2021 and, according to its NDCs, aims to have 30 per cent of the total national land area forested by 2030 it could consider a constitutional provision of this type.

Ownership is a key consideration in natural resource management and becomes more complicated in decentralized and federal systems. Existing constitutional provisions generally vest ownership in one of three entities: symbolically in 'the people', in the central government or in subnational governments. For the first category, many constitutions also specify that land and natural resources are held in public trust for the citizens by the state. For example, Uganda's Constitution states that: 'The State shall protect important natural resources, including land, water, wetlands, minerals, oil, fauna and flora on behalf of the people of Uganda' (article XIII). South Sudan's Constitution states that: 'Ownership of petroleum and gas shall be vested in the people of South Sudan and shall be developed and managed by the National Government on behalf of and for the benefit of the people' (article 173(1)).

Some states, such as Brazil, vest ownership of natural resources in the central government (article 20). Less commonly, constitutions give complete ownership and management of some natural resources to subnational units (for example, Canada, article 109). In the case of Canada, however, the central parliament is still empowered to pass laws in relation to the management of the resources, and the law of the central state prevails over conflicting provincial law (article 92(a)(3)). The FDC specifies that the 'original owner of all ... land and natural resources within each state is the people of that state. The state shall have the right to independently manage the exploration, extraction,

trading, preservation, and protection of the natural resources within the state'. Considerations for natural resource management and revenue sharing between the federal Union and constituting states are discussed further below.

The extraction and use of natural resources inevitably causes damage to the environment. In Myanmar, uncontrolled mining for jade (Tin Htet Paing 2020) and now rare earth minerals (Global Witness 2022) has led to deforestation, water pollution and devastating landslides, particularly in Kachin State. Myanmar's largest copper mine in Letpadaung, which is a legal operation, has been heavily criticized for its lack of environmental monitoring and its weak dialogue with local communities (Yi et al. 2022). The FDC currently envisages that specific taxes and a fund will be used to remedy the negative impacts on communities and the natural environment, and the damage done to ecosystems by the extraction of natural resources. The detailed provisions could be informed by the practices of other constitutions of states with large extractive industries. Several constitutions expressly entrench the 'polluter pays' principle, meaning that liability for environmental harm lies with those exploiting the resources and producing pollution. This principle also extends to managing the costs of pollution and compensating the victims of pollution. For example, Vietnam's Constitution states that 'Organizations and individuals who cause environmental pollution, debilitate natural resources and weaken biodiversity shall be strictly dealt with and must be responsible for remedy and compensation for damage' (article 63(3)). Nepal's Constitution states that 'The victim of environmental pollution and degradation shall have the right to be compensated by the polluter as provided for by law' (article 30(2)).

Finally, constitutions can mainstream a requirement for sustainable development throughout the constituent units of the state. For example, the Belgian Constitution states that: 'In the exercise of their respective competences, the Federal State, the Communities and the Regions pursue the objectives of sustainable development in its social, economic and environmental aspects, taking into account the solidarity between the generations' (article 7bis).

4.2.2. Overview of constitutionalized institutions and bodies related to environmental regulation, oversight, and enforcement

Constitutions can establish and regulate institutions and bodies to implement, enforce and or/monitor environmental laws, policies, rights and duties.

4.2.2.1. Environmental courts and tribunals

Constitutionalized environmental courts and tribunals exist in various forms around the world. There are approximately 1,500 such courts and tribunals. Few are constitutionalized, although some states, such as Bolivia and Kenya, have elevated these bodies to a constitutional level. Specialized courts can generally respond more quickly to environmental concerns but relevant environmental laws and/or constitutional provisions must exist for them to be successful. If granted a comprehensive mandate, environmental courts and

Constitutions can establish and regulate institutions and bodies to implement, enforce and or/monitor environmental laws, policies, rights and duties.

tribunals can play a crucial role in addressing environmental harms, vindicating rights and increasing access to justice.⁶

4.2.2.2. Specialized environmental prosecutors

In addition to courts and tribunals, some states have specialized environmental prosecutors at the national and sometimes substate level. These prosecutors may be housed in the office of the public prosecutor or constituted as a separate environmental crimes unit. Specialized environmental prosecutors are generally mandated to prosecute violations of environmental law by public and private sector entities, often related to water or air pollution, hazardous waste, dangerous substances, environmental incidents or protected lands. Prosecutors may also have a role in investigating crimes, conducting plea negotiations, and participating in alternative dispute resolution.

Brazil's wide-ranging environmental laws are enforced by the Ministério Público (Public Prosecutor's office), empowered by the 1988 Constitution to monitor and address violations of constitutional rights, which include the right to an ecologically balanced environment. The Constitution mandates the public prosecutor to, among other things, 'institute civil investigation and public civil suit to protect public and social property, the environment and other diffuse and collective interests' and to 'defend judicially the rights of Indigenous populations' (article 129(III), (V)). The Ministério Público (Public Prosecutor's office) enjoys constitutionally protected functional independence (article 127) and has been highly active in environmental cases in Brazil.

4.2.2.3. Independent regulatory and oversight bodies

There are many types of independent regulatory and oversight bodies that may be established by statute or in a constitution. As these bodies are generally established to resolve a particular problem or meet a specific need, constitution makers must assess which problems are likely to arise. Commissions may be established to support the economic aspects of land and natural resource management. The establishment of a Farmer and Land Rights Commission is envisaged in the FDC.

Land commissions can help manage land sustainably and to stymie the corruption that can occur in the sale and leasing of public land (Bulmer 2019). Sri Lanka's Constitution establishes a national land commission with representatives from all provincial councils (Appendix II(3)(3.1)). A technical secretariat provides multidisciplinary expertise and will 'evaluate the physical as well as the socio-economic factors that are relevant to natural resources

⁶ One study has identified 12 characteristics of the most successful environmental courts and tribunals. The 12 identified characteristics are: (1) Status and authority (inferior or superior status is not so important, but successful courts enjoy a more comprehensive jurisdiction with recognition that they are the appropriate venue for resolving environmental disputes); (2) Independent from government and impartial; (3) Comprehensive and centralized jurisdiction; (4) Knowledgeable and competent judges/members; (5) Grants civil and administrative remedies, with alternative dispute resolution available; (6) Provides access to scientific and technical expertise (many successful ECTs appoint internal technical experts and adopt procedures to reduce partisan testimony from external experts); (7) Facilitates access to justice (both by its substantive decisions and in its practice and procedures); (8) Achieves just, quick and cheap resolution of disputes; (9) Responsive to environmental problems; (10) Develops environmental jurisprudence (including cross-jurisdiction fertilization of environmental law); (11) Has clear underlying ethos and mission; (12) Flexible and innovative (Preston 2014).

management' (Appendix II(3)(3.2)). Kenya's Constitution, under article 67(2), outlines a broad mandate for a national land commission:

- to manage public land on behalf of the national and county governments;
- to recommend a national land policy to the national government;
- to advise the national government on a comprehensive programme for the registration of title in land throughout Kenya;
- to conduct research related to land and the use of natural resources, and make recommendations to appropriate authorities;
- to initiate investigations, on its own initiative or on a complaint, into present or historical land injustices, and recommend appropriate redress;
- to encourage the application of traditional dispute resolution mechanisms in land conflicts;
- to assess tax on land and premiums on immovable property in any area designated by law; and
- to monitor and have oversight responsibilities over land use planning throughout the country.

Commissions can also help to protect, manage or regulate natural resources. For example, South Sudan's Constitution establishes a National Petroleum and Gas Commission that reports to the executive and legislature. Its membership includes relevant ministries and institutions, and representatives of oil producing states appointed by the President (article 174). South Sudan also has an independent Fiscal and Financial Allocation and Monitoring Commission 'to ensure transparency and fairness in regard to the allocation of funds collected at the level of the National Government to the states and local governments' (Art 181(1)).

National human rights institutions (NHRIs) can play a crucial role in promoting and protecting human rights, including constitutionalized environmental rights. The structure and mandates of NHRIs vary widely across the world, but under the Paris Principles have the responsibility to pursue human rights promotion and human rights protection. The FDC foresees the establishment of an independent Human Rights and Anti-Discrimination Commission (Part I, section III).

Some NHRIs have developed innovative policies on monitoring and evaluating government environmental protection efforts to bridge the gap between stakeholders in extractive industries and protect human rights. For example, Argentina's NHRI has developed a monitoring and evaluation programme to identify gaps and challenges in the State's implementation of the Sustainable Development Goals, with the input of civil society. In another programme, it advises stakeholders in the mining sector on upholding the UN Guiding Principles on Business and Human Rights to protect against human rights abuses by the private sector (GANHRI n.d.).

Some constitutions establish the office of a general human rights ombudsman, which can be responsible for issues related to the environment. There are also states that constitutionalize environmental ombudsmen, 'defenders of nature' or ombudsmen for future generations, which can play a key role in monitoring

executive decision making related to the environment and in vindicating individual or community rights to a healthy environment. For example, Austria has environmental ombudsmen in its nine federal states who are authorized to bring complaints against the district administration authorities.

To ensure an inclusive constitution, constitution makers must ensure that women and marginalized groups are well represented at the constitution-making table.

4.2.3. Key considerations

This section outlines key considerations for constitution makers when designing environmental protection provisions. To ensure an inclusive constitution, constitution makers must ensure that women and marginalized groups are well represented at the constitution-making table and are empowered to contribute beyond areas that have traditionally been reserved for them. It is also important to consider and weigh the potential advantages and disadvantages of enshrining rights in constitutions or establishing institutions via constitutions rather than through legislation. There are symbolic and practical reasons to constitutionalize environmental provisions that ensure rights and establish institutions to protect the environment.

As mentioned above, a core benefit of constitutionalization is that it can embed long-term environmental planning and commitments as part of the country's vision, inoculating policies against shorter term political considerations. Constitutionalizing institutions ideally strengthens their authority, independence and longevity, but there are also risks. While a constitutional basis might strengthen the status of such bodies, legislated institutions may have more flexibility to evolve. Furthermore, without adequate resources and political will, constitutionalized institutions can remain non-operational and environmental provisions unimplemented.

4.2.3.1. Constitutional design of environmental rights provisions

When formulating rights provisions, constitution makers must uphold values and consider who will be the bearers and beneficiaries of the rights, whether the rights are formulated as individual and/or collective rights, whether the rights will be judicially enforceable and, if so, just against the state or also between private parties. In relation to access to justice, constitution makers may decide to establish broad standing rules for environmental matters (including allowing public interest litigation) and measures to limit legal costs for litigants. They may also consider which types of legal remedies and compensation might be appropriate for violations of constitutional environmental rights, taking into account international guidance such as that of the UN Special Rapporteurs on Human Rights and the Environment, Human Rights and Climate Change and the Rights of Indigenous Peoples.

For example, Kenya's 2010 Constitution allows broad standing for human rights litigants when a right has been denied, violated or is threatened (article 22(1)), and expressly articulates standing for enforcement of environmental rights (article 70 (1)). Litigants can be an individual acting in their own interest, a person acting on behalf of another, a person representing the interests of a group or class of persons, or an association acting on behalf of its members (article 22(2)). The Constitution lowers the procedural bar for court proceedings, allowing commencement even on the basis of

‘informal documentation’ and stipulating that ‘the court, while observing the rules of natural justice, shall not be unreasonably restricted by procedural technicalities’ (article 22(3)). The Constitution empowers the courts to issue orders to prevent or stop harmful acts to the environment, to compel public officials to act and to grant compensation (article 70(2)).

4.2.3.2. Constitutional design of institutional provisions

When designing regulation, oversight and enforcement institutions, constitution makers must consider issues related to the composition, mandate and powers of the institution, the appointment of persons to the institution (including ensuring appropriate qualifications, and a transparent and inclusive selection/appointment process), terms of service and tenure, adequate staffing, access to the expertise needed to sufficiently discharge its duties and accountability. Constitution makers must also determine the extent to which the powers of the institution will be articulated in the constitutional text or in legislation and ensure that safeguards are in place to ensure the functional independence of these bodies and institutions. In federal systems, constitution makers must also decide whether some institutions will exist only at the national level or also at the subnational level.

4.2.3.3. Formulation and specificity of resource management provisions

Federal constitutions generally include more information on the ownership, management and revenue generated from natural resources than the constitutions of unitary states. While the FDC grants ownership of natural resources within each state to the people of the state, and independent management rights to the substate units, it will be essential for the above issues to be closely considered in any constitution-making process to ensure that the central government has the resources to carry out its functions, and given the interest of central governments in upholding international environmental agreements, ensuring fiscal stability, supporting economic union and promoting territorial equality. Central governments must also consider how to preserve natural resources, manage the depletion of such resources and provide mechanisms for the resolution of horizontal natural resource ownership or management disputes. Furthermore, natural resources can be a trigger for conflict, especially where they are concentrated in certain regions or overlap with ethnic groups.

It is necessary to complement ownership provisions with legislative or constitutional provisions that identify which bodies have the authority to manage the resources and receive revenues. In constitutions, management authority is generally assigned in one of four ways: (a) solely to the central government; (b) solely to the subnational governments; (c) jointly to central and subnational governments; or (d) divided between the central and subnational governments. The FDC appears to grant management solely to subnational governments, but it will be necessary to anticipate overlap and management disputes. Central government involvement in the management of natural resources has certain advantages. First, a coherent national policy can avoid differing or competing long-term plans for the use of natural resources and can avoid a ‘race to the bottom’ where substate units lower their labour

or environmental standards to gain a competitive advantage for securing contracts. Second, the central state may have the expertise and technical capacity to manage and coordinate large-scale projects and to negotiate complex contracts. Where central governments have management rights, a constitution can create a duty of consultation with sub-national governments (e.g., Constitution of Nicaragua, article 181) and local communities, guaranteeing some form of coordination and participation.

The division of revenues gained from natural resources must be specified to mitigate tensions and potential conflict. The formula for division is dependent on context—and some constitutions address different aspects such as collection, allocation and oversight in their texts. The constitutionalization of revenue-division formulas can provide clarity but can also be problematic if new resources are found or the number of sub-state units changes.

Given the volatility of some types of natural resource revenues, some constitutions address the need for stabilization and savings funds. For example, the Constitution of South Sudan establishes an Oil Revenue Stabilization account for central government net oil revenues as well as a Future Generation Fund from its share of net oil revenue (article 178). Constitutions can establish oversight bodies (e.g., commissions), procedures (e.g., external auditing) and rules (e.g., public disclosure of certain documents) to promote transparency and to minimize the likelihood of disputes (Choudhry and Stacey 2015).

4.3. CONSIDERATIONS FOR STRENGTHENING STATE CAPACITY AND GOVERNANCE STRUCTURES TO ADDRESS CLIMATE CHANGE

Tackling climate change and ensuring environmental protection will require a flexible, holistic and coordinated approach to state governance structures and cooperation with and outreach to external actors, such as business, civil society, think tanks and the public. A minimum level of 'climate-specific' capacity will be needed to implement climate-related and environmental policies, including institutional arrangements to develop a climate strategy and define priorities, leadership within institutions, sufficient human and financial resources, and access to scientific knowledge and expertise, among other things.

Ideally, the interim government institutions of Myanmar will define the commitments, action and priorities they find acceptable for tackling climate change and protecting the environment within the framework of the interim constitutional process, and then establish clear mandates and conduct capacity assessments of existing institutions, such as the NUG Ministry for Electricity and Energy, the NUG Ministry of Planning, Finance and Investment and the NUG Ministry for Natural Resource and Environmental Conservation—and of future institutions to be established. A step-by-step approach should be

taken that combines mitigation measures with capacity building initiatives and considers existing capacities and selects future actions that are consistent with the capacity level that can reasonably be reached within a given time frame and in the current post-coup context.

To strengthen institutional capacity, there must be a focus on the individual, organizational and broader institutional context. At the individual level, this means investing in qualified personnel, obtaining financial resources, and ensuring effective management. At the organizational level, this means defining clear mandates and strategic priorities and devoting sufficient human and financial resources. At the institutional level, state institutions and agencies need to coordinate horizontally and vertically, cooperate at the Union, state/region, and local levels, and reach out to civil society, the private sector and the public.

Within Myanmar's current interim government institutions, the Union level National Administration Body-Natural Resources (NAB-NR) led by the NUG Prime Minister has been established to provide strategic guidance on the implementation of FDC principles. The NUG Ministry for Environment and Energy and the NUG Ministry for Natural Resource Management have established technical task forces that coordinate with each other and currently focus on raising public awareness, conducting education on environmental protection and climate change, and building staff capacity. They are also drafting a future natural resource management policy under the leadership of an independent Committee on Resource Federalism comprised of experts, civil society, and private sector consultants.

On the future of institutions, the interim government must consider that the far-reaching consequences of climate change need creative, flexible, and holistic strategies. For example, in addition to its usual role as civil and criminal prosecutor, the Ministério Público (Public Prosecutor's office) in Brazil has a range of extra-judicial powers that allow it to negotiate agreements with polluters to prevent or reduce harm to the environment, allowing the efficient enforcement of rights and the resolution of conflict without overburdening the legal system. The office can hold public hearings with experts and representatives of state institutions and civil society organizations, thereby increasing popular participation, inclusivity, and legitimacy. The Hungarian Ombudsman for Future Generations, through the Commissioner for Fundamental Rights, can approach the Constitutional Court to seek annulment of legislation that might endanger future generations, which recently resulted in the invalidation of key aspects of Hungary's forest management legislation (Hickey 2022).

4.4. CONSIDERATIONS FOR INCLUSIVE REPRESENTATION IN FUTURE GOVERNANCE STRUCTURES

Inclusive governance structures are recognized as a fundamental component of sustainable development. Under SDG 16 on peace, justice and strong institutions, target 16.7.1 measures responsive, inclusive, participatory, and representative decision making in national and local institutions (UN n.d.a). It therefore measures the proportions of positions in the legislature, public service and judiciary held by women and ethnic minorities compared to the demographic make-up of the state.

In addition to advancing the sustainable development agenda, the systematic inclusion of diverse voices in future governance structures is a core value of the FDC: 'that parliamentarian representatives, political parties, the CDM, strike committees, civil society organizations, including women's and youth organizations, and EAOs [ethnic armed organizations] collaborate and participate to collectively implement the vision of the charter' (Ebead and Hirakawa 2022: 3).

It is important that Myanmar increases the representation of ethnic minorities/Indigenous peoples, youth and women in climate negotiating bodies to ensure their leadership and priorities are reflected in pledges, policies and agreements.

This section considers how, by integrating mechanisms to ensure inclusive governance into the transitional constitution and permanent constitution, the future Federal Democratic Union of Myanmar can reduce the likelihood of conflict related to natural resources and increase innovation to combat climate change. It is also important that Myanmar increases the representation of ethnic minorities/Indigenous peoples, youth and women in national and international climate negotiating bodies to ensure their leadership and priorities are reflected in pledges, policies and agreements (Chiu 2021; UN Women 2022). This is key as women are disproportionately vulnerable to and impacted by climate change in the short term, and young people are similarly vulnerable in the long term (United Nations Office of the Secretary-General's Envoy on Youth n.d.).

4.4.1. Mechanisms to increase inclusive representation

Most if not all states will need to implement affirmative policies, programmes and legal mechanisms to achieve SDG target 16.7.1 as part of their efforts to end poverty, fight inequalities and structural disempowerment, and tackle climate change. The FDC contains strong principles on equality and inclusion and specifies affirmative action policies across all sectors. In particular, the FDC foresees affirmative action to ensure political participation by women, ethnic minorities and minorities within minorities in states (Bisarya 2020). The FDC also promises affirmative action for other groups, such as those with 'low capacities' and those 'marginalized due to customary practices'.

4.4.1.1. Legislative quotas

Quotas are an effective mechanism for ensuring higher representation of marginalized and other groups. These can take many forms and constitutional designers should consider which types of quota are most likely to have the intended impacts, as well as incentives, sanctions and enforcement mechanisms to ensure compliance. Constitutional designers also need

to ensure that the quota system selected is complementary to the state's electoral system or consider reforms to the electoral system if the current design disadvantages minority and marginalized groups (Ebead and Hirakawa 2022: 10–11).

Quotas can apply to public bodies and/or legislatures through use of nomination/appointment quotas or reserved seats. Voluntary political party quotas for women and youth are another way to widen political representation in political life. Quotas are increasingly being entrenched in constitutions and/or electoral law rather than left to the discretion of political parties.

Women

As women make up 52 per cent of Myanmar's population, their meaningful participation in state institutions has been described as 'not only a demographic necessity but a democratic imperative' (Van Mil 2022: 1). Like many states, women's representation in Myanmar's parliament has slowly increased from about 6 per cent in the early 2010s to around 16 per cent in the 2020 elections (Von Kameke 2022). While this constitutes a degree of progress, it is far from reflecting the demography of Myanmar. Legal mechanisms and policies to rectify the historical exclusion of marginalized groups from governance and public life are not considered discrimination, and the FDC states maintains that future affirmative action policies will not be restrained by the principle of equality between citizens. The importance of quotas to women's representation is clear. Table 4.2 shows how democratic states with large proportions of women parliamentarians use some form of quota.

Other innovative practices could guarantee, as in the case of the Ugandan Constitution, one woman representative in each district or multi-member parliamentary constituency (article 78 (1)(b)). The FDC guarantees that 'a quota system of at least 30 per cent of women in different levels of decision-making mechanisms shall be practiced' in future democratic institutions. This target is theorized to constitute a 'critical mass' of women to enable women to influence governance. However, the design of any quota is a key factor in determining effectiveness in terms of women's formal and substantive equality (UN Economic and Social Council 2021). Furthermore, even a well-designed quota with clear consequences for non-compliance cannot guarantee success in the absence of political will or a critical mass of women with the capacity or opportunity to serve in future institutions.

Kenya's 2010 Constitution enshrines several gender-inclusive, progressive provisions. Article 27(8) requires that 'not more than two-thirds of the members of elective or appointive bodies shall be of the same gender', meaning men or women should make up at least one-third and no more than two-thirds of state bodies, county assemblies and executive committees. The Constitution further directs the state to take legislative and other action, including affirmative action programmes and policies, to implement this requirement. As of 2017, women constituted 21 per cent of Kenya's National Assembly and 31 per cent of its Senate. The Constitution contains clear

Table 4.2. Democratic states with large proportion of women in parliament and quotas

Country	Electoral system	Quota type	Lower or single chamber			Upper chamber		
			Seats	# W	% W	Seats	# W	% W
Rwanda	List PR	Reserved seats (30%)	80	49	61.3	26	9	34.6
Mexico	MMPR	Legislated candidate quota (50%)	500	250	50.0	128	63	49.2
New Zealand	MMPR	Voluntary party quotas	120	59	49.2	-	-	-
Iceland	List PR	Voluntary party quotas	63	30	47.6	-	-	-
Costa Rica	List PR	Legislated candidate quota (50%)	57	27	47.4	-	-	-
South Africa	List PR	Voluntary party quotas	400	186	46.5	54	20	37.0
Bolivia	MMPR	Legislated candidate quota (50%)	130	60	46.2	36	20	55.6
Sweden	List PR	Voluntary party quotas	349	161	46.1	-	-	-
Norway	List PR	Voluntary party quotas	169	76	45.0	-	-	-
Argentina	List PR	Legislated candidate quota (50%)	257	115	44.8	72	31	43.1

Source: Inter-Parliamentary Union, 'Monthly ranking of women in national parliaments: Ranking as of 1 July 2022', <<https://data.ipu.org/women-ranking?month=7&year=2022>>, accessed 22 November 2022; International IDEA, Inter-Parliamentary Union and Stockholm University, Gender Quota Database, <<https://www.idea.int/data-tools/data/gender-quotas>>, accessed 8 August 2022

sanctions under Article 267(7) for non-compliance up to the dissolution of parliament, and successive court rulings have ordered parliament to comply on threat of implementation of this constitutionally elaborated sanction. Thus, despite robust provisions, 'in practice women remain at the periphery of Kenyan politics because of non-implementation of constitutional guarantees, cultural norms that impede women's access to political office, and intimidation and fear of electoral violence' (Hickey 2021).

Youth

Young people are underrepresented in governance systems worldwide. As of 2016, less than 2 per cent of parliamentarians globally were under 30 (Inter-Parliamentary Union 2016: 9, Table 3) and even fewer were members of cabinets. In Myanmar, 33 per cent of the population is aged between 15 and 35 but youth candidates won just 8 per cent of seats in the 2020 general elections (Ebead and Hirakawa 2022).

To ensure that young people's concerns and priorities are reflected in the planning and decisions that affect their future, meaningful youth participation in governance and policymaking is key. This is particularly important in the face of climate change. When surveyed, young people consistently rank climate change and the destruction of nature as a major and often the most pressing global issue (EcoWatch 2017). This is not surprising, given that the effects of climate change will be felt most severely by this generation and those that follow. Despite this, policies and laws addressing environmental degradation and natural resource management have generally not treated young people as stakeholders.

To ensure meaningful youth participation in governance, some states have enacted candidate quotas or reserved seats in parliament for youth (Hickey 2022). In Uganda, for example, the electoral law reserves five seats for individuals under the age of 30, one of which must be held by a woman. Thus, fulfils article 78(1)(c) of the Constitution, which stipulates that parliament shall include youth representatives. Some constitutional provisions compel politicians to advocate for youth issues in parliament even though the legislators might not be in the youth bracket themselves. For instance, the Kenyan Constitution specifies that political parties, in proportion to their representation in the National Assembly, can designate 12 members to represent 'special interests' such as youth and persons with disabilities (article 97(1)(c)). In Rwanda, the National Youth Council elects two members of parliament (International IDEA n.d.).

Ethnic minorities

Ethnic identity, which is tied to citizenship, is a politically sensitive issue in Myanmar (Ebead and Hirakawa 2022). A key consideration relevant to the design and implementation of institutional arrangements for ethnic minority affirmative action, therefore, is how ethnic identity would be ascertained for the purposes of the quotas. Identification guidelines are sometimes set out in the constitution, more often in legislation.⁷ The question of how the Rohingya people 'should be included in political life remains one of the most sensitive issues for Myanmar' (Ebead and Hirakawa 2022: 4).

Ethnic minorities make up 30–40 per cent of the population in Myanmar but have long-standing 'grievances about political rights, including the right to self-governance; limited resource sharing; discrimination; and suppression

⁷ For examples of legislative and constitutional provisions on Indigenous and ethnic minorities, see Morros (2021).

of religion, language and culture' (Ebead and Hiraakawa 2022: 4). This has resulted in calls for self-determination and autonomy by certain ethnic armed organizations (EAOs), and many decades of conflict with the military. Nonetheless, the coup forged new alliances between ethnic communities and EAOs, and the shared objective of creating a 'a federal democracy ha[s] shifted the paradigm of Myanmar's political landscape, with the inclusion and equality of these diverse groups at the centre of democratic reform and state building' (Ebead and Hiraakawa 2022: 4). Table 4.3 outlines examples of various types of quota for ethnic minorities (and others) in national legislatures.

Table 4.3. National legislative ethnicity quotas in Asia

Country	Electoral system	Quota type	Groups protected	Quota/seats	% Quota/reserved
India	FPTP	Reserved seats (special districts)	Scheduled Castes and Tribes	131 of 545	24
Pakistan	FPTP + List PR	Reserved seats (party list)	Non-Muslim (religious minorities)	10 of 342	2.9
Singapore	FPTP + PBV	Legislated candidate quota	Malay, Indians, or other minorities	17 of 93	18.3
Taiwan	FPTP + SNTV	Reserved seats (nationwide districts)	Indigenous groups	6 of 113	5.3
Vietnam	FPTP (Two round)	Legislated candidate quota	Ethnic minorities	90 of 500	13–18
Philippines	FPTP + Party List	Reserved seats (party list)	Labour, peasant, urban poor, Indigenous peoples and women (and other interested parties)	59 of 297	20
Nepal	FPTP + List PR	Legislated candidate quota	Dalit, Adivasi, Janajati, Khas Arya, Madhesi, Tharu and Muslim (50% women and disabled)	275 of 275	* Note: All of Nepal's 275 seats are distributed based on ethnicity

Source: Tan, N. and Preece, C., 'Ethnic Quotas, Political Representation and Equity in Asia Pacific', *Representation*, 58/3 (2022), pp. 347–71, <<https://doi.org/10.1080/00344893.2021.1989712>>.

Some states also introduce quotas for ethnic minorities in the executive branch. For example, Singapore's Constitution allows for a 'reserved election' for the executive to ensure rotation of ethnic communities in this role (article 19B). The three constitutionally defined communities are 'Chinese, Malay and Indian or other minority communities'. The role of president is reserved for one of these three communities if they have not held the office for five or more consecutive terms.

4.4.1.2. Civil service, judiciary and fourth branch institution quotas

Some constitutions indicate that the civil service should reflect patterns of regional, national and gender diversity. When the civil service is representative of the demographic make-up of a country, research shows that this increases perceptions of the legitimacy of the public service and increases trust in public institutions (Neves 2020). Several states, such as India and Nepal, mandate quotas for ethnic minorities in the civil service and the military. Other states do not mandate quotas, but instead require 'consideration' of diversity, including ethnic diversity, in appointments to the judiciary (e.g., Constitution of South Africa, article 171(2)). It is important to note that while the criteria for selection for civil service and independent bodies might seem gender-neutral, pre-existing discrimination and inequalities in society disadvantage women and marginalized groups.

The example of Nepal raises considerations for the design and implementation of civil service quotas. Nepal's 2007 Interim Constitution enshrined reservations for economically and socially disadvantaged peoples in state policy (article 35(10)). The Civil Service Act, as amended in 2007, introduced quotas to reflect the country's demographic composition, including for women and ethnic groups. Originally, the 45 per cent of reserved civil service seats were apportioned: women (33 per cent), Indigenous groups (27 per cent), Madhesis (22 per cent), Dalits (9 per cent), people with disabilities (5 per cent) and those from 'backward areas' (4 per cent). This was then updated to include Muslims. Analysis shows that while the quotas increased the proportion of minorities in the civil service, they did not address other forms of structural discrimination. Furthermore, 'elites' from these marginalized groups mostly benefited from the quotas, reducing the diversity of views and life experiences represented in the civil service. The quotas did not account for intersectional identities, as candidates were barred from competing under more than one category at a time (Jamil and Baniamin 2020). There is ongoing political debate about amending the quota system. Some suggest that the quota should be a 'one-off', while others promote a change in the criteria to ensure access by candidates who are socio-economically disadvantaged, including from higher status castes in the social hierarchy.

4.4.1.3. Representative and consultative bodies

In addition to parliamentary representation, some states utilize representative, advisory and consultative bodies to facilitate indirect input from women, youth, and ethnic minorities. This is a potentially different or complementary form of representation, and some iterations of these bodies (in particular consultative bodies) are usually more insulated from party politics. Including these bodies

in a constitution might safeguard the status of the body and its endurance but legislated bodies have more flexibility to evolve.

Women's consultative councils are constitutionalized in the Republic of Congo and Zimbabwe. These bodies are generally tasked with advising the government on issues that affect women, including sustainable development. The Chadian Constitution (articles 164–65) establishes a consultative assembly, the High Council of Autonomous Collectivities and of Traditional Leadership. The body 'gives its substantiated opinion on the policy of decentralization, on territorial planning, and on questions related to traditional Leadership. It also participates in the non-jurisdictional settlement of disputes' (Chadian Constitution article 165). National youth councils are established by several constitutions to serve as representative and advisory bodies for youth to the government and/or private sector (see Constitution of Algeria, article 224; and Constitution of Morocco, article 170).

Commissions tend to have more robust mandates, which might include policymaking, and legislative assessment and oversight roles. Their appointment is also generally more political. In Nepal, the National Women's Commission is constitutionally empowered to establish offices in various provinces (article 245). Its role includes, among other things, formulating policies and programmes on women's welfare for government implementation, conducting research on gender equality and making recommendations to related authorities, monitoring government submissions to international treaty bodies, and endorsing court petitions related to the deprivation of women's rights. Guyana's Constitution provides a robust mandate for its Ethnic Relations Commission, which works on human rights promotion, the provision of education and training programmes, monitoring legislation, and reporting on consultations (article 212D (a)-(x)). Membership of the Commission is by nomination by entities representing women, youth, the labour movement, religious organizations and the private sector, and approval by a two-thirds vote of the National Assembly. Four non-voting members are chosen, one each by the Indigenous Peoples' Commission, the Women and Gender Equality Commission, the Commission for the Rights of the Child and the Human Rights Commission, which were also established by the Constitution. Guyana's Constitution specifies a broad mandate for the Rights of the Child Commission, which includes monitoring, evaluating and making recommendations on 'policies, procedures and practices of organisations, [public and private] bodies and institutions in order to promote the rights of the child' (article 212V(f)). The Commission can also investigate and resolve complaints relating to children's rights. Other constitutions, such as Poland's, establish an office of a children's/youth ombudsman or commissioner (article 212V(b)). The effectiveness of all these bodies is affected by their functional independence, funding, staffing and, of course, the political receptivity to their objectives and recommendations.

4.4.2. Key considerations

This section outlines key considerations for constitution makers when designing mechanisms to increase inclusivity and representation in future governance structures. This is important in the context of environmental protection as women and marginalized groups are disproportionately affected by climate change and the adverse effects of ineffective natural resource management.

If designing quotas, constitution makers need to decide which roles, bodies, institutions, and levels of government should be affected by the quota and which type(s) of quota will apply. As mentioned above, the electoral system must be examined to ensure that the quota selected is complementary to the objectives of electing more women and marginalized groups. Other key decisions are whether such quotas will be a temporary special measure or permanent, whether sanctions for non-compliance will apply, and whether this decision lends itself to enshrining quotas on a statutory or constitutional basis.

Constitution makers must also consider the impacts of paired or tandem quotas, such as gender and ethnic quotas and/or gender and youth quotas, on symbolic and substantive representation. Research has shown that tandem ethnic and gender quotas for a small share of legislative seats—specifically reserved seats for women and ethnic minorities—can lead to an overrepresentation of minority ethnic women because their intersectional identity makes them a desirable fit for the law’s requirements. With paired gender and youth quotas for reserved seats, young women tend to be disadvantaged. Nonetheless, so-called nested or subgroup quotas can ensure a balance between different groups (Hughes 2018). Questions of preliminary identification must be resolved in the design of any quotas or representative bodies related to ethnicity.

Special mechanisms alone are not enough to ensure substantive participation by marginalized groups. In Myanmar, gender inequality is driven by a combination of informal and formal underlying structures that operate at all scales, including gender norms and hierarchies, policies and rules, and institutional systems. Myanmar must therefore tackle discrimination in society writ large to ensure that, for example, women’s caregiving responsibilities or lack of access to funding to run for office, do not prevent their political participation. In terms of other state institutions, states must also proactively address barriers to advancement. In France, for example, women make up 60 per cent of the civil service but only hold 24 per cent of its senior management positions. A legislated gender quota requires 40 per cent of appointed senior civil servants to be women by 2018. (The percentage has gradually increased from 20 per cent since 2013.) If the political participation of women, youth and ethnic minorities can be increased and made more effective, this will also enable constitution makers and legislators to effectively address environmental protection and the problems of climate change.

4.5. CONSIDERATIONS TO ENSURE A JUST CLIMATE TRANSITION AND ACT ON CLIMATE INJUSTICE

A just transition framework entails 'greening the economy in a way that is as fair and inclusive as possible to everyone concerned, creating decent work opportunities, and leaving no one behind' (ILO 2015; ILO n.d.). It means anticipating the opportunities and challenges facing people or citizens as states make the necessary transformation to a low-carbon and eventually climate neutral economy and society. This section outlines considerations on how to ensure a just climate transition and act on climate injustice in Myanmar's essential transition to a low-carbon economy.

4.5.1. Opportunities and challenges ahead

The concept of a just transition originated in the 1970s at the nexus of labour movements and environmental organizations. Since then, core milestones have included the ILO's 1999 Decent Work Framework, the 2015 Paris Climate Agreement, and the ILO's 2015 Guidelines for a Just Transition. The Just Transition agenda gained more prominence at COP 26 in 2021, where it was included in several agreements and initiatives related to energy and finance. The first-ever country deal on Just Transition was announced at COP 26 (Sego 2022). Climate justice adds a further layer to the concept of a just transition, in a reminder that climate change responses have the potential to further marginalize those most likely to suffer the worst consequences of climate change.

While transition is inevitable in the face of climate change, a just transition is not. Failure to adequately plan for the socio-economic consequences of likely job loss and social instability could lead to major economic and political challenges. If well managed, however, 'transitions to environmentally and socially sustainable economies can become a strong driver of job creation, job upgrading, social justice and poverty eradication' (Atteridge and Strambo 2020: 6). Furthermore, 'greening' jobs, including 'by introducing more energy and resource efficient practices, avoiding pollution and managing natural resources sustainably' will lead to increased innovation and resilience that will have the knock-on effect of creating new employment and investment opportunities (ILO 2015).

A just transition means that a state must grapple with balancing competing interests and issues of interpretation on climate justice.

4.5.2. Key considerations

In operationalizing these broad principles on a just transition, Myanmar will encounter various challenges. A just transition is likely to entail structural change to both national and regional economies. It necessarily implies a transition risk related to natural resource extraction and revenue, and potential tensions between territorial equity and long-term development in the essential transition away from exhaustible natural resources. At its core, a just transition means that a state must grapple with balancing competing interests and issues of interpretation on climate justice. The state will therefore need strong, inclusive policies and institutional arrangements in order to adjudicate competing claims related to sustainable development and economic growth, the rights of current and future generations, human rights

and economic development, and traditional land uses that potentially clash with environmental policy.

Courts are already grappling with these issues. In Colombia, jurisprudence has challenged Colombia's development model, which is based on extracting natural resources. Since 2015, the Constitutional Court has ruled that the principle of *in dubio pro natura* must be consistently applied (Maya-Aguirre 2018). In South Africa, the Constitutional Court has ruled that environmental protection and socio-economic development are interdependent, and the government must refrain from pursuing one to the detriment of the other. The Court further explained that the Constitution foresees that environmental issues will be balanced by socio-economic considerations through the principle of sustainable development (Fuel Retailers Association of Southern Africa v. Director-General: Environmental Management, Department of Agriculture, Conservation and Environment, Mpumalanga Provinces 2007). In Ecuador, Constitutional Court rulings have set a strict framework of requirements for the development of extractive projects, which require prior and free consultation with the public and Indigenous communities to demonstrate that the activities will do no environmental harm to the areas in which they expect to operate (Herbert, Smith, Freehills 2022). As noted above, state institutions and mechanisms must also be sensitive to the disparate impact of climate change on women and other marginalized groups.

Chapter 5

CONCLUSION AND RECOMMENDATIONS

Myanmar has made ambitious international commitments to protect the environment and tackle climate change, in line with the desire of its people to live in a harmonious, fair and sustainable society. Making effective policy often means balancing sets of connected but highly diverse targets. Striking the right balance can unlock synergies that bring multiple targets closer.

Achieving the SDG targets in Myanmar will require dealing with trade-offs. A 30 per cent target for forest in Myanmar and having 10 per cent of its land effectively 'protected' will result in trade-offs in terms of economic development, agricultural production, infrastructure and financial resources. Increasing access to energy in Myanmar will mean choices in terms of energy supply and water management, and the resulting infrastructure will affect local people and the environment.

The SDG Synergies (n.d.) is a practical, free online tool for understanding how groups of policy areas and targets interact. Originally designed by researchers at the Stockholm Environment Institute to support governments with implementing the Sustainable Development Goals, the SDG Synergies is invaluable within and beyond the field of sustainability. Country level water and energy analyses can also contribute to improved long-term policy choices. The Water Evaluation and Planning and Low Emissions Analysis Platform models have been introduced to Myanmar by independent experts and analysis has already been undertaken for Myanmar.

This policy planning analysis should be complemented by a spatial planning analysis. The Secretariat of the UN Convention on Biological Diversity has released the first draft of a new global biodiversity framework to guide actions worldwide to 2030 on preserving and protecting nature and its essential services for people. Its first target is to: 'Ensure that all land and sea areas globally are under integrated biodiversity-inclusive spatial planning addressing land- and sea-use change, retaining existing intact and wilderness areas'. IGIs should endorse the new Global Biodiversity Framework and embark

on a comprehensive spatial planning exercise. The Marxan tool (Nature Conservancy 2022), an open-source spatial planning platform designed to map and inform conservation decisions around the world, for example, could help this process while the Myanmar Information Management Unit (MIMU) portal I (n.d.) and the upcoming Myanmar Ziwa Zone, to be made accessible by the end of 2022, have considerable spatial datasets linked to the environment. The One Map Myanmar Initiative has not publicly released its data yet but is considering its options. This data combined with local observations could be instrumental in bringing transparency and empowering people.

These analyses should be undertaken in an open and transparent manner, empowering the people of Myanmar in the decision-making process. The challenge of this exercise lies in the technical aspects and striking the right balance but also, importantly, in finding the right mechanisms to ensure that Myanmar's people own the process. Open access to spatial data is a first important step. Beyond that, it is important to create pathways for people to be informed and consulted, and to participate in decision making. Environmental and public health data collected by local community environmental monitors over time could be critical tools in ensuring just representation of people's needs and demands. The principle of free prior and informed consent should be central to Myanmar's commitments in terms of natural resources management and when preparing principles for the future governance of Myanmar. The three pillars of the Aarhus Convention could be included in Myanmar's commitments: access to environmental information, public participation in environmental decision making and access to justice if the two first principles are not respected.

The question of resource-sharing should be part of a wide consultation among IGIs and Myanmar's population. The FDC is a movement towards greater decentralization. There is no one-size-fits-all solution to natural resources federalism. Each step—exploration, licence allocation, impact management, taxation, the role of SEEs and revenue distribution—can be managed in very different ways involving more or less decentralization. The Natural Resource Charter (Natural Resource Governance Institute 2018) provides a framework for exploring some of the challenges facing Myanmar. It offers advice on how to maximize industry's positive impacts and mitigate potential harm. This could help Myanmar's government, people and companies, as well as the international community to identify a path to better resource governance in the country. In addition, IGIs will need to consider the connection between environmental governance and ethnic claims to land and water, as well as ethnic forms of environmental governance and environmental rules.

Myanmar's IGIs could consider future commitments which ensure justice will be served to those who have lost their land. Principles for achieving justice can be outlined today to signal that the importance of this issue has been grasped. Reparations and justice will be competing with environmental protection. A transitional justice framework that attempts to address past human rights violations while taking account of the environmental requirements of the future Myanmar nation would be a good starting point. This would need government

The principle of free prior and informed consent should be central to Myanmar's commitments in terms of natural resources management.

and civil society actors to be fully invested in the process, including the setting up of truth and reconciliation commissions and development of appropriate reparations policy to address needs. In this context, the 2011 World Development Report, which focused on conflict security and development, could be a useful reference document. Perspectives and insights on transitional justice in countries such as Colombia and South Africa could also provide helpful guidance.

In order to operationalize environmental management, it will be important for IGIs to ensure monitoring, evaluation and law enforcement. Such operationalization can only take place once an environmental conservation fund or budget has been established. Future urban development should also be rooted in participatory bottom-up approaches. These approaches are key to preparing for and adapting to climate change. Cities currently located in liberated areas could actively employ such methods. Participatory, gender- and socially inclusive planning approaches are central to more liveable, inclusive and equitable urban development, in line with the objectives of SDG 11 on sustainable cities and communities. It will be important to discuss such platforms in connection with future changes expected linked to climate change.

Planning approaches should include gender-balanced and socially-inclusive participatory mapping (Livengood and Kunte 2012), participatory budgeting (Cabannes 2015) and focus group discussions and local committees that involve local residents as well as government officials (Sheikh and Rao 2007). Based on such approaches, local adaptation plans can be established for liberated areas to understand the changes needed to adapt to climate change. Bottom-up participatory vulnerability assessments have already been conducted in small cities of Myanmar such as Pakokku and Labutta and could be replicated elsewhere (UN-Habitat 2017).

As people resettle in liberated areas, new long-term housing is likely to be constructed. This housing should follow climate-resilient guidelines, such as those set out in the National Building Codes. Collective approaches have been applied to housing as a solution that can meet some demand, starting with the establishment of savings groups, as well as collective purchase or leasing of land in order to build affordable housing.

In order to address air pollution, with the necessary funding, air quality standards should be introduced, and air pollution monitoring stations established. Vehicle emission standards should also be applied (such as Euro 4 or above) while fuel sulphur content limits should be introduced that are in line with other South-East Asian countries. (These are currently at 2000 ppm, whereas most countries in South-East Asia limited to 10–50 ppm) (Slater et al. 2022). Myanmar could consider leapfrogging.

Building a democratic constitutional order is a long-term process and the constitution, as the foundational legal, social and political text, will play a central role. Myanmar's IGIs must carefully consider the design of

the constitution-making process, especially in terms of inclusion in its negotiation, drafting and implementation. Broadly based public consultation and consensus will bolster the legitimacy of the transitional and permanent constitution and increase the likelihood of a viable and stable outcome—especially if the constitution contains transformative provisions.

RECOMMENDATIONS

The constitutional framework

Consider constitutional provisions on substantive and procedural environmental human rights: Myanmar's IGIs must consider which constitutional provisions will protect both substantive and procedural environmental human rights, safeguard the environment, regulate natural resources and promote sustainable development. In terms of human rights, Myanmar's IGIs must consider which constitutionalized rights will fulfil the principles articulated in the FDC, in particular for women, Indigenous peoples, local communities and minorities within minorities. Constitutionalizing procedural environmental rights—the rights to information, participation (and consultation) and to access justice in matters relating to the environment—would constitutionalize the pillars of environmental democracy, promoting transparency and justice.

Constitutionalized institutions can play a key role in helping Myanmar to reach its national and international goals and commitments on environmental protection through their oversight, regulatory, enforcement and adjudication roles. Myanmar's IGIs must decide on which institutions will be established to address environmental management, their legal and political mandates, their interactions with other institutions, and staffing, funding and mechanisms to ensure their inclusiveness, independence and accountability. In designing institutions, Myanmar's IGIs should anticipate competing claims related to natural resources and ensure robust institutions and clear processes for adjudicating on and/or reconciling these claims.

Consider the interaction between the states (including sub-state constitutions) and the centre when addressing natural resource governance: Myanmar's IGIs must consider the interaction between substate units and the central state in relation to natural resource governance (ownership, management, allocation of revenue) and environmental protection. In addition, natural resource federalism must be informed by principles, laws and regulations that establish minimum standards of environmental protection and coordinated efforts to combat climate change and prevent environmental degradation. Split, shared and common responsibilities must be clearly defined.

Legislation and policymaking

Integrate and mainstream climate change into the legislative and policy framework: Climate change should be integrated and mainstreamed into all the policies of the future Myanmar. Before the coup, Myanmar's vision was to become a climate-resilient, low-carbon society that was sustainable, prosperous and inclusive, ensuring equitable access to and benefits from natural resources for the well-being of current and future generations. This vision should be enshrined in all future legislation in all sectors.

Integrate gender and inclusion considerations into the legislative and policy framework: Gender and social equity considerations will be key to ensuring a just transition and adaptation to climate change. To enable meaningful change, women should be viewed as decision makers and not only as beneficiaries of climate legislation. Sex-disaggregated data collection and analysis is lacking in all statistical areas, from agriculture to fisheries, forestry, mining and health, including air quality data. In future, national statistical systems should no longer be gender-blind but gender inclusive.

Consider a new legal framework on land management: Myanmar IGIs need to start thinking about a completely new framework for land management, which is central to natural resource management. One obvious and fundamental change in the land legal framework would be to move land registration from the household head to joint ownership, or to any individual regardless of gender. A key point of discussion will be the limits to national intervention for environmental protection with regard to community rights/customary land tenure and vice-versa. The experience of neighbouring countries will be instructive. These countries have moved from highly centralized forest management, which aimed to maximize timber production, to more bottom-up systems that aim to consider biodiversity protection. The experiences of Nepal, with its 1993 Forest Act, and India, with its 2006 Forest Rights Act, illustrate the complexity of these transitions. In Myanmar, Community Forests and Community Protected Areas were viewed as the best tools for community participation in forestry management and conservation. In practice, however they have not shown results and are cumbersome to implement. Myanmar IGIs might want to explore a real-world situation such as the Salween Peace Park and to use these as a basis for what will be possible in the Myanmar context.

Provide legal standing to Key Biodiversity Areas: In relation to the spatial planning efforts and environmental protection goals of Myanmar, IGIs should consider providing legal standing to Key Biodiversity Areas (KBAs). KBAs are sites of global significance for biodiversity identified using standardized criteria. They represent the most important sites for biodiversity conservation worldwide. Myanmar has 132 KBAs but they have no legal standing as an official form of land tenure except where they overlap with formally established Protected Areas. Of the 132 KBAs, 35 are existing Protected Areas and a further six have been proposed as Protected Areas but the majority have no legal status. Currently, KBAs cover 17 per cent of the country. Three-quarters of the KBAs are located in the north and in Tanintharyi Region that contains the

Myeik Archipelago. KBAs provide a sound scientific basis for the expansion of conservation.

Create an interim institutional body responsible for agricultural policy: The FDC states that a Farmer and Land Rights Commission will be established. A body responsible for agricultural policy is needed for the transition period to reflect farmers' voices and integrate food security and nutrition questions into ongoing debates about land. These debates should also include water and the current management of fisheries as fish represent a large part of people's protein intake.

In the past, interstate/regional, intra-state/regional and inter-sectoral disputes on sharing water and its resources strained relationships and hampered the optimal use of water. The NUG might want to offer early platforms for intra-sectoral discussions on water and fisheries. Good practice has been to set up of river basin management organizations, such as the Chindwin River Basin Organization (Chindwin RBO) which was set up in 2019–2020. The Chindwin RBO was the country's first RBO. It was established with funding from the Sagaing Regional Government as an example of a wide-ranging partnership that included both state and non-state actors and local communities. RBOs can cover topics concerning a specific river basin in a holistic way and provide the technical information necessary for informed and participatory debates on questions of access to water, food and energy.

Re-evaluate the legal environment for SEEs in natural resources: NUG MONREC might want to reflect with NUG MOPFI on the future of SEEs in natural resources and what the transitional legal environment should be for these bodies. The Myanmar Timber Enterprise may want to follow a focused privatization scenario, which would lead to the privatization of mills, factories and transportation divisions that need constant investment to keep them competitive. At the same time, the rest of the enterprise should be kept as a government entity due to its management of items that are inherently governmental, such as selling government property (logs), and its management of forest ecosystems.

The EIA process could be an opportunity to implement natural resource federalism in three ways:

- Formalizing the role of subnational institutions in EIA processes. The EIA Procedures already include provisions for subnational consultation, but roles and responsibilities are unclear. For example, state and regional government support could be a formal condition for approval of an extractive project. This could lead to gridlocks in decision-making processes, however, if not accompanied by clear rules.
- Current environmental monitoring can be strengthened by making environmental monitoring data public in a database of precise and well-defined information. This process would effectively strengthen monitoring capacity. NUG MONREC could take responsibility for developing the structure of such a database.

- In the long-term, environmental impact monitoring at the sub-national level might need to be coupled with enforcement powers. Although this will certainly strengthen the role of sub-national agencies, without oversight procedures it could lead to rent-seeking behaviours, so appropriate check and balances should be included.

Formalize small-scale mining, small scale crude oil extraction and local traditional refinery: This endeavour could increase not only social and environmental welfare, but also tax collection. The provincial Government of South Cotabato in the Philippines has had good experience of formalizing small-scale mining at the local level. By putting an identification system in place for small-scale miners, a training programme was rolled out. The identification system also improved tax collection through computerization of the permit system. It also helped to reduce the number of child labourers and improve environmental standards, through increased use of mercury-free methods and post-mining rehabilitation (Nixon 2018). With external support, Ethnic Resistance Organizations might be able to formalize small-scale mining in their areas.

Waste management rules in liberated areas should be clarified in legislation: This would include clarifying roles and responsibilities in current practices for house-to-house collection and street sweeping. An online course in Burmese on Rural Waste Management, which was developed post-coup, could be taught to as many groups as possible by NUG MONREC Environmental Conservation Department representatives.

References

- AIT RRC.AP, 'Report on city assessment of municipal solid waste in Yangon City', CCAC-Municipal Solid Waste Initiative Project, <https://www.waste.ccacoalition.org/sites/default/files/files/yangon_city_final-report-on-swm_aug_14.pdf>, accessed 20 November 2022
- Asia Foundation, 'City Life Survey: Myanmar: 2017 Pilot Initiative', 2017, <<https://asiafoundation.org/publication/city-life-survey>>, accessed 20 November 2022
- Asian Development Bank (ADB), United Nations Development Programme (UNDP), United Nations Population Fund (UNPF) and UN Women, *Gender Equality and Women's Rights in Myanmar: A Situation Analysis* (Manila: Asian Development Bank, 2016), <<https://www.adb.org/documents/gender-equality-and-womens-rights-myanmar-situation-analysis>>, accessed 20 November 2022
- Atteridge, A., Savvidou, G., Sadowski, S., Gortana, F., Meintrup, L. and Dzebo, A., Aid Atlas, All donors to Myanmar for climate change (total) during 2002–2020, Stockholm Environment Institute, 2019, <https://aid-atlas.org/profile/all/myanmar/climate-change-total/2002-2020?usdType=usd_commitment>, accessed 20 November 2022
- Atteridge, A. and Strambo, C., *Seven Principles to Realize a Just Transition to a Low-carbon Economy* (Stockholm: Stockholm Environment Institute, 2020), <<https://www.sei.org/publications/seven-principles-to-realize-a-just-transition-to-a-low-carbon-economy>>, accessed 20 November 2022
- Bauer, A., Kirk, N. and Sahla, S. et al., 'Natural resource federalism: Considerations for Myanmar', January 2018, <<https://resourcegovernance.org/sites/default/files/documents/federalism-considerations-form-myanmar.pdf>>, accessed 20 November 2022
- Belton, B. et al., 'Aquaculture in transition: Value chain transformation, fish and food security in Myanmar', December 2015, <<https://doi.org/10.13140/RG.2.1.1715.0805>>
- Bisarya, S., 'Protecting ethnic minorities within minorities', Constitution Brief, International IDEA, March 2020, <<https://www.idea.int/publications/catalogue/protecting-ethnic-minorities-within-minorities>>, accessed 20 November 2022
- Bulmer, E., *Independent Regulatory and Oversight (Fourth-Branch) Institutions*, Constitution-Building Primer No. 19 (Stockholm: International IDEA, 2019), <<https://doi.org/10.31752/idea.2019.27>>
- Cabannes, Y., 'The impact of participatory budgeting on basic services: Municipal practices and evidence from the field', *Environment and Urbanization*, 27/1 (2015), pp. 257–84, <<https://doi.org/10.1177/0956247815572297>>
- Chiu, B., 'COP26: Why are women still missing at the top climate table', *Forbes*, 30 October 2021, <<https://www.forbes.com/sites/bonniechiu/2021/10/30/cop26-why-are-women-still-missing-at-the-top-climate-table>>, accessed 3 October 2022
- Choudhry, S. and Stacey, R., *Oil and Natural Gas: Constitutional Frameworks for the Middle East and North Africa* (Stockholm: International IDEA, 2015), <<https://www>

- [.idea.int/publications/catalogue/oil-and-natural-gas-constitutional-frameworks-middle-east-and-north-africa](https://www.idea.int/publications/catalogue/oil-and-natural-gas-constitutional-frameworks-middle-east-and-north-africa)], accessed 20 November 2022
- Constitute, The Worlds Constitutions to Read, Search and Compare, <<https://www.constituteproject.org>>, accessed 20 November 2022
- Ebead, N. and Hirakawa, A., *Inclusion and Gender Equality in Post-Coup Myanmar: Strategies for Constitutional and Democratic Reform*, Constitution Brief (Stockholm: International IDEA, 2022), <<https://doi.org/10.31752/idea.2022.35>>
- Eckstein, D., Künzel, V. and Schfer, L., *Global Climate Risk Index*. 2021, German Watch, 2021, <<https://www.germanwatch.org/en/19777>>, accessed 26 September 2022
- Ecowatch, Millennials: Climate Change is World's Biggest Problem. 7 September 2017, <<https://www.ecowatch.com/millennials-climate-change-2482557556.html>>, accessed 20 November 2022
- Extractive Industries Transparency Initiative (EITI), 'Myanmar', [n.d.], <<https://eiti.org/countries/myanmar>>, accessed 26 September 2022
- Federal Democratic Republic of Nepal, Civil Service Act 1993 (2049), Act No. 2 of 1993, 17 May 1993 <<https://lawcommission.gov.np/en/?cat=614>>, accessed 20 November 2022
- Food and Agriculture Organization of the United Nations (FAO), 'Country profile: Myanmar, Water resources', Rome, 2011, <<https://www.fao.org/aquastat/en/countries-and-basins/country-profiles/country/MMR>>, accessed 20 November 2022
- Forest Trends, 'Myanmar's timber trade one year since the coup: The impact of international sanctions', March 2022, <<https://www.forest-trends.org/publications/myanmars-timber-trade-one-year-since-the-coup>>, accessed 20 November 2022
- Frontier Magazine, "Quick profits": Activists fear for environment under military rule', 17 April 2022, <<https://www.frontiermyanmar.net/en/quick-profits-activists-fear-for-environment-under-military-rule>>, accessed 20 November 2022
- Fuel Retailers Association of Southern Africa v. Director-General: Environmental Management, Department of Agriculture, Conservation and Environment, Mpumalanga Provinces (CCT67/06), 13 ZACC-(2007), <<http://www.saflii.org/za/cases/ZACC/2007/13.html>>, accessed 20 November 2022
- Global Alliance of National Human Rights Institutions (GANHRI), 'Argentina: Using the SGDs to monitor human rights and climate change', [n.d.], <<https://ganhri.org/argentina-climate-change>>, accessed 3 October 2022
- Global Witness, 'Myanmar's poisoned mountains', 9 August 2022, <<https://www.globalwitness.org/en/campaigns/natural-resource-governance/myanmars-poisoned-mountains>>, accessed 10 June 2022
- Helsingen, H., Milligan, B., Dailey, M. and Bhagabati, N., 'Greening China's Belt & Road Initiative in Myanmar', WWF Myanmar, September 2017, <<https://www.wwf.org.mm/en/?318715/GreeningChinaBeltRoadInitiativeinMyanmar>>, accessed 20 November 2022
- Herbert Smith Freehills, 'Ecuador's Constitutional Court takes on extractive industries', 24 February 2022, <<https://hsfnotes.com/latamlaw/2022/02/24/ecuadors-constitutional-court-takes-on-extractive-industries>>, accessed 20 November 2022
- Hickey, S. P., 'Constitutionalizing institutions for a safer environment: Examples from Kenya, Brazil and Hungary', International IDEA, 29 September 2021, <<https://www>

- [.idea.int/news-media/news/constitutionalizing-institutions-safer-environment-examples-%C2%A0kenya-brazil-and](https://www.idea.int/news-media/news/constitutionalizing-institutions-safer-environment-examples-%C2%A0kenya-brazil-and)>, accessed 20 November 2022
- , ‘“Hope is not passive”: Constitutionalizing youth representation in governance and policymaking to combat climate change’, *The Comparative Jurist*, 3 June 2022, <<https://comparativejurist.org/2022/06/03/constitutionalizing-youth-representation-to-combat-climate-change>>, accessed 20 November 2022
- , *Constitutionalized Institutions for Protecting the Environment* (Stockholm: International IDEA, forthcoming)
- Horton, R., De Mel, M., Peters, D., Lesk, C., Bartlett, R., Helsingen, H., Bader, D., Capizzi, P., Martin, S. and Rosenzweig, C., *Assessing Climate Risk in Myanmar: Technical Report*, Center for Climate Systems Research at Columbia University, WWF US and WWF Myanmar, 2016, <https://unhabitat.org/sites/default/files/2019/10/assessing-climate-risk-in-myanmar_technical-report.pdf>, accessed 20 November 2022
- Hughes, M. M., ‘The combination of gender and ethnic quotas in electoral politics’, in R. Rubio-Marín and W. Kymlicka (eds), *Gender Parity and Multicultural Feminism: Towards a New Synthesis* (Oxford: Oxford University Press, 2018), <<https://doi.org/10.1093/oso/9780198829621.003.0004>>
- International Finance Corporation (IFC), *Strategic Environmental Assessment of the Myanmar Hydropower Sector* (Yangon: World Bank, 2018), <<https://openknowledge.worldbank.org/handle/10986/31256>>
- International IDEA, Gender Quotas Database: Rwanda, [n.d.], <<https://www.idea.int/data-tools/data/gender-quotas>>, accessed 3 October 2022
- , *Myanmar’s Federal Democracy Charter: Analysis and Prospects*, Constitution Brief Interregnum Series (Stockholm: International IDEA, 2022), <<https://doi.org/10.31752/idea.2022.27>>
- International Labour Organization (ILO), *Guidelines for a Just Transition Towards Environmentally Sustainable Economies and Societies for All* (ILO: Geneva, 2015), <https://www.ilo.org/wcmsp5/groups/public/--ed_emp/--emp_ent/documents/publication/wcms_432859.pdf>, accessed 20 November 2022
- , ‘Climate change and financing: A just transition’, [n.d.], <http://www.ilo.org/empent/areas/social-finance/WCMS_825124/lang-en/index.htm>, accessed 20 November 2022
- Inter-Parliamentary Union (IPU), ‘Youth participation in national parliaments’, 2016
- , ‘Monthly ranking of women in national parliaments’, Ranking as of 1 July 2019, IPU Parline, <<https://data.ipu.org/women-ranking?month=7&year=2022>>, accessed 20 November 2022
- Jamil, I. and Baniamin, H. M., ‘Representative and responsive bureaucracy in Nepal: A mismatch or a realistic assumption?’, *Public Administration and Policy* 23/2 (2020), pp. 141–56, <<https://doi.org/10.1108/PAP-03-2020-0016>>
- Japan International Cooperation Agency (JICA) and Yangon City Development Committee, (YCDC), ‘A Strategic Urban Development Plan of Greater Yangon’, January 2014, <<https://openjicareport.jica.go.jp/pdf/12145967.pdf>>, accessed 20 November 2022
- Jones, A., ‘SAC-M: Just 17PC of territory in Myanmar under stable junta control as conflict trajectory favours resistance’, Special Advisory Council Myanmar, 5 September 2022, <<https://specialadvisorycouncil.org/2022/09/territory-myanmar-stable-junta-control-resistance>>, accessed 20 November 2022

- Krakstad, J.-O., Krafft, B. and Alvheim, O., 'Myanmar Ecosystem Survey: 28 April–02 June 2015'. Cruise Report 'Dr Fridtjof Nansen', FAO-NORAD Project no. GCP/INT/003/NOR, Institute of Marine Research, 2015, <[http://www.dof-myanmar-fic.org/Multimedia/Project%20Documents/11.%20Fridtjof%20Nansen%20Report%20\(DOF-FAO,%202015\).pdf](http://www.dof-myanmar-fic.org/Multimedia/Project%20Documents/11.%20Fridtjof%20Nansen%20Report%20(DOF-FAO,%202015).pdf)>, accessed 20 November 2022
- Land in Our Hands Network, 'Destroying people's lives: The impact of land grabbing on communities in Myanmar', December 2015, <https://www.tni.org/files/article-downloads/lioh_research_report_eng_0.pdf>, accessed 20 November 2022
- Levy, R., 'Fixed constitutional commitments: Evaluating environmental constitutionalism's "new frontier"', *Melbourne University Law Review*, 46/1 (2022), pp. 82–122, <https://law.unimelb.edu.au/__data/assets/pdf_file/0010/4287736/03-Levy-82.pdf>, accessed 20 November 2022
- Lindvall, D., *Democracy and the Challenge of Climate Change*, International IDEA Discussion Paper 3/2021 (Stockholm: International IDEA, 2021), <<https://doi.org/10.31752/idea.2021.88>>
- Livengood, A. and Kunte, K. 'Enabling participatory planning with GIS: a case study of settlement mapping in Cuttack, India', *Environment and Urbanization*, 24/1, (2012), pp. 77–97, <<https://doi.org/10.1177/0956247811434360>>
- Maya-Aguirre, A. L., 'Implementing environmental constitutionalism in Colombia: Tensions between public policy and decisions of the Constitutional Court', in E. Daly and J. R. May (eds), *Implementing Environmental Constitutionalism* (Cambridge: Cambridge University Press, 2018), pp. 143–58, <<https://doi.org/10.1017/9781316691588.009>>
- Minoletti, P., 'Gender Inequalities in a Decentralized Myanmar', International Development Research Centre, May 2017, <<https://www.idrc.ca/sites/default/files/sp/Documents%20EN/background-paper-minoletti-june-2017.pdf>>, accessed 20 November 2022
- Mittermeier, R, Gil, P., Hoffmann, M., Pilgrim, J., Brooks, T., Mittermeier, C., Lamoreux, J: and Fonseca, G., *Hotspots Revisited: Earth's Biologically Richest and Most Endangered Terrestrial Ecoregions* (University of Chicago Press: Conservation International, 2004)
- Moore, C. W., A Feasibility Assessment on the Introduction of Alternative Dispute Resolution /Collaborative Dispute Resolution to Resolve Land Disputes in Myanmar (Oslo Norwegian Refugee Council, May 2019), <<https://www.nrc.no/globalassets/pdf/reports/myanmar/finding-a-middle-way-to-solve-myanmars-land-disputes/a-feasibility-assessment-on-the-introduction-of-alternative-dispute-resolution-collaborative-dispute-resolution-to-resolve-land-disputes-in-myanmar.pdf>>, accessed 20 November 2022
- Myanmar Centre for Responsible Business, *Pwint Thit Sa 2020: Transparency in Myanmar Enterprises*, 21 December 2020, <<https://www.myanmar-responsiblebusiness.org/pwint-thit-sa/2020.html>>, accessed 20 November 2022
- Myanmar Climate Change Alliance (MCCA)/UN-Habitat, 'Building resilient, inclusive, and sustainable cities and towns in Myanmar', Policy Guidance Brief 4, [n.d.], <https://www.burmalibrary.org/docs24/Brief-4_web.pdf>, accessed 20 November 2022
- , 'Climate-smart agriculture, fisheries and livestock for food security', Policy Guidance Brief 1, October 2017, <<https://unhabitat.org.mm/wp-content/uploads/2018/07/Policy-Brief-SAP-1.pdf>>, accessed 20 November 2022

- Myanmar Information Management Unit (MIMU) portal, [n.d.], <<https://themimu.info>>, accessed 20 November 2022
- Myanmar Ministry of Agriculture and Irrigation (MOALI), *Myanmar: Climate-Smart Agriculture Strategy* (Yangon: MOALI, 2015)
- Myanmar, Republic of the Union of, Myanmar Mines Law, State Law and Order Restoration Council Law No. 8/94, 6 September 1994, <<https://www.mining.gov.mm/wp-content/uploads/2021/07/မြန်မာ့သတုတုတွင်းဥပဒေ.pdf>>, accessed 20 November 2022
- , Myanmar Gemstone Law, State Law and Order Restoration Council Law No. 8/95, 29 September 1995, <https://myanmareiti.org/sites/myanmareiti.org/files/1995-09-29-myanmar_gemstone_law_eng.pdf>, accessed 20 November 2022
- , *2014 Myanmar Population and Housing Census* (volume 2) [The Union Report], 2015, <<https://reliefweb.int/report/myanmar/2014-myanmar-population-and-housing-census-union-report-census-report-volume-2-enmy>>, accessed 20 November 2022
- , Petroleum and Petroleum Product Law, Pyidaungsu Hluttaw Law No. 20, 2017, 1 August 2017, <<https://www.moe.gov.mm/en/ignite/page/99>>, accessed 20 November 2022
- , Myanmar Sustainable Development Plan, August 2018, <https://themimu.info/sites/themimu.info/files/documents/Core_Doc_Myanmar_Sustainable_Development_Plan_2018_-_2030_Aug2018.pdf>, accessed 20 November 2022
- , Forest Law, Pyidaungsu Hluttaw Law No. 29/2018, 19 September, 2018, <<https://www.burmalibrary.org/en/pyidaungsu-hluttaw-law-no-292018-the-forest-law-sctteaupde>>, accessed 20 November 2022
- , Myanmar Climate Change Strategy, 2018–2030, 2019, <https://myanmar.un.org/sites/default/files/2019-11/MyanmarClimateChangeStrategy_2019.pdf>, accessed 20 November 2022
- , Nationally Determined Contributions, July 2021, <<https://unfccc.int/sites/default/files/NDC/2022-06/Myanmar%20Updated%20%20NDC%20July%202021.pdf>>, accessed 20 November 2022
- Myanmar Ministry of Immigration and Population, *Population and Housing Census of Myanmar* (volume 2) [The Union Report], 2014, <<https://myanmar.unfpa.org/en/publications/union-report-volume-2-main-census-report>>, accessed 20 November 2022
- Natural Resource Governance Institute, *Natural Resource Charter*, March 2018, <https://resourcegovernance.org/sites/default/files/documents/natural-resource-charter-myanmar_0.pdf>, accessed 20 November 2022
- Nature Conservancy, 'World Biodiversity Day: Upgraded MARXAN Platform Changes the Nature of Conservation Planning, Collaboration provides open-source spatial planning platform designed to map and inform conservation decisions around the world', 19 May 2022, <<https://www.nature.org/en-us/what-we-do/our-insights/perspectives/marxan-microsoft-conservation-planning-platform>>, accessed 20 November 2022
- National Water Resources Committee, *Myanmar National Water Policy*, August 2015, <<http://extwprlegs1.fao.org/docs/pdf/mya201049.pdf>>, accessed 20 November 2022

- Neves, M., 'Measuring SDG 16.7.1b and c: Inclusive representation and decision-making', 17 December 2020, <https://www.unodc.org/documents/sdg_seminar/W5_4_Measuring_Inclusive_Representation_and_Decision-making.pdf>, accessed 20 November 2022
- Nepal, Federal Democratic Republic of, Civil Service Act 1993 (2049), Act No. 2 of 1993, 17 May 1993, <<https://lawcommission.gov.np/en/?cat=614>>, accessed 20 November 2022
- Nixon, H., Joelene, C., Kyi Pyar Chit Saw, Thet Aung Lynn and Arnold, M., 'State and Region Governments in Myanmar', Policy Dialogue Brief Series No. 1, Asia Foundation, 2018, <https://asiafoundation.org/wp-content/uploads/2016/09/State-Region-Government_Policy-Brief_ENG.pdf>, accessed 20 November 2022
- National Unity Government (NUG) MONREC, Myanmar Climate Change Strategy and Action Plan, 2016–2030, 19 January 2017, <<https://policy.asiapacificenergy.org/node/2934>>, accessed 20 November 2022
- , Community Forest Instructions, Notification No. 69/2019, 2019, <<https://data.opendevdevelopmentmekong.net/dataset/community-forestry-instructions-2019>>, accessed 20 November 2022
- , Interim Resources Management Framework (Forestry and Biodiversity Sector), July 2022, <<https://monrec.nugmyanmar.org/interim-resources-management-framework-forestry-and-biodiversity-sector>>, accessed 22 November 2022
- , Status of Natural Resources Depletion During the Military Regimes in Myanmar, July 2021, <https://assets-monrec.nugmyanmar.org/images/2021/08/Status_of_Natural_Resources_Depletion_During_the_Military_Regimes.pdf>, accessed 20 November 2022
- Oberndorf, R. B., *Legal Review of Recently Enacted Farmland Law and Vacant, Fallow and Virgin Lands Management Law* (Food Security Working Group's Land Core Group, Forest, November 2012), <<https://www.forest-trends.org/publications/legal-review-of-recently-enacted-farmland-law-and-vacant-fallow-and-virgin-lands-management-law>>, accessed 20 November 2022
- , *Land Governance and Legal System Realities in the Myanmar Context*, USAID, 14 June 2016, <https://www.burmalibrary.org/docs22/Oberndorf-2016-06-14-Land_Governance&Legal_System_Realities-Myanmar-en.pdf>, accessed 20 November 2022
- Open Development Myanmar, Forests and forestry, 14 February 2020, <<https://opendevdevelopmentmyanmar.net/topics/forests-and-forestry>>, accessed 20 November 2022
- People's Assembly, 'Federal Democracy Charter', Part 1, Declared on 31 March 2021, ratified by the First People's Assembly convened on 27–29 January 2022, <<https://nucc-federal.org/wp-content/uploads/2022/06/FDC-Part-1-En-01042022.pdf>>, accessed 20 November 2022
- Preston, B. J., Characteristics of successful Environmental Courts and Tribunals, *Journal of Environmental Law*, 26/3 (2014), pp. 365–93, <<https://doi.org/10.1093/jel/equ019>>
- Prevent Plastics, '3R Concept Development in Industrial Zones', 2021, <<https://www.switch-asia.eu/site/assets/files/3094/3r-concepts-development-in-industrial-zones-english.pdf>>, accessed 20 November 2022

- Rao, M., Saw Htun, Platt, S. G., Tizard, R., Poole, C., Than Myint and Watson, J. E. M., 'Biodiversity conservation in a changing climate: A review of threats and implications for conservation planning in Myanmar', *AMBIO*, 42/7 (2013), pp. 789–804, <<https://doi.org/10.1007/s13280-013-0423-5>>
- Royal Haskoning DHV, 'Myanmar Integrated Water Resources Management: Strategic Study', December 2014, <https://www.drrteam-dsswater.nl/wp-content/uploads/2015/08/2014dec_myanmarstudy.pdf>, accessed 20 November 2022
- Sabrié, M., 'Yangon "Emerging metropolis": Challenges for the authorities and resilience of the Yangonites', *Moussons*, 33 (2019), pp. 33–64, <<https://doi.org/10.4000/moussons.4892>>
- Sachs, J. D., Kroll, C., Lafortune, G. and Woelm, F., *Sustainable Development Report 2022: From Crisis to Sustainable Development: the SDGs as Roadmap to 2030 and Beyond* (Cambridge University Press, Cambridge, 2022), <<https://doi.org/10.1017/9781009210058>>
- Sakai, H., Kataoka, Y. and Fukushi, K., 'Quality of source water and drinking water in urban areas of Myanmar', *Scientific World Journal* (2013), pp. 1–5, <<https://doi.org/10.1155/2013/854261>>
- Schulte, W. J. and Baird, M. H., 'Myanmar's nascent environmental governance system: Challenges and opportunities', *Natural Resources & Environment*, 33/2 (2018), pp. 21–25, <https://data.opendevlopmentmekong.net/library_record/myanmar-s-nascent-environmental-governance-system-challenges-and-opportunities>, accessed 20 November 2022
- SDG Synergies, Stockholm Environment Institute, [n.d.], <<https://www.sdgsynergies.org>>, accessed 20 November 2022
- Seah, S., Martinus, M. and Jiahui, Q., *The Southeast Asia Climate Outlook: 2021 Survey Report* (Singapore: ISEAS, Yusof Ishak Institute, 2021), <<https://www.iseas.edu.sg/articles-commentaries/southeast-asia-climate-outlook/southeast-asia-climate-outlook-2021-survey-report>>, accessed 20 November 2022
- Sego, C., 'An explainer on just transition in climate governance', ClimateWorks Foundation, 12 May 2022, <https://www.climateworks.org/wp-content/uploads/2022/06/An-explainer-on-Just-Transition_ClimateWorks-Foundation_final2_6.13.22.pdf>, accessed 20 November 2022
- Sheikh, K. and Rao, S., 'Participatory city planning in Chhattisgarh: A civil society initiative', *Environment and Urbanization*, 19/2 (2007), pp. 563–81, <<https://doi.org/10.1177/0956247807082837>>
- Shortell, P., 'Losing Lustre: Addressing Tax Evasion in Myanmar's Jade and Gemstone Industry', Natural Resource Governance Institute, 11 February 2019, <<https://resourcegovernance.org/analysis-tools/publications/losing-luster-addressing-tax-evasion-myanmars-jade-and-gemstone>>, accessed 20 November 2022
- Slater, J., Han, J. Y.-C., Adelina, C., Nikam, J., Archer, D., Nguyen, H. and Kim, D., *Air Pollution and the World of Work: Policies, Initiatives and the Current Situation – A Scoping and Evidence Review for Southeast and East Asia* (Stockholm: Stockholm Environment Institute, 2022), <<https://doi.org/10.51414/sei2022.040>>
- Smithsonian's National Zoo & Conservation Biology Institute, 'Mitigation hierarchy', [n.d.], <<https://nationalzoo.si.edu/ccs/mitigation-hierarchy#:~:text=The%20hierarchy%20follows%20avoidance%2C%20minimization,negative%20effects%20on%20the%20environment>>, accessed 28 September 2022

- Switch Asia, 'A journey towards a circular economy in Myanmar', 12 November 2020, <<https://www.switch-asia.eu/news/prevent-plastics-a-journey-towards-circular-economy-in-myanmar>>, accessed 20 November 2022
- Tan, N. and Preece, C., 'Ethnic quotas, political representation and equity in Asia Pacific', *Representation*, 58/3 (2022), pp. 347–71, <<https://doi.org/10.1080/00344893.2021.1989712>>
- Tezzo, X., Belton, B., Johnstone, G. and Callow, M., 'Myanmar's fisheries in transition: Current status and opportunities for policy reform', *Marine Policy*, 97 (2018), pp. 91–100. <<https://doi.org/10.1016/j.marpol.2018.08.031>>
- Tin Htet Paing, 'Irreparable damage: The environmental impacts of jade mining', Open Data, [n.d.], <https://openjadedata.org/stories/jade_and_environment.html>, accessed 20 November 2022
- United Nations Development Programme (UNDP), Human Development Reports, Gender Inequality Index, [n.d.] updated 2020, <<https://hdr.undp.org/data-center/thematic-composite-indices/gender-inequality-index#/indicies/GII>>, accessed 20 November 2022
- , 'Impact of the twin crises on human welfare in Myanmar', November 2021, <<https://www.undp.org/publications/impact-twin-crisis-human-welfare-myanmar>>, accessed 20 November 2022
- University of Notre Dame, Global Adaptation Initiative (ND-GAIN), Country rankings, [n.d.], <<https://gain.nd.edu/our-work/country-index/rankings>>, accessed 20 November 2022
- United Nations Economic and Social Council, Women's full and effective participation and decision-making in public life, as well as the elimination of violence, for achieving gender equality and the empowerment of all women and girls, Agreed conclusions, E/CN.6/2021/L.3, 31 March 2021, <<https://undocs.org/E/CN.6/2021/L.3>>, accessed 20 November 2022
- United Nations, UN Human Rights, Principles relating to the Status of National Institutions (the Paris Principles), 48/134, 20 December 1993, <<https://www.ohchr.org/en/instruments-mechanisms/instruments/principles-relating-status-national-institutions-paris>>, accessed 20 November 2022
- United Nations, Office of the Secretary-General's Envoy on Youth, #YouthStats: Environment and Climate Change, [n.d.], <<https://www.un.org/youthenvoy/environment-climate-change>> accessed 3 October 2022
- United Nations, SDG Indicators: Metadata repository, [n.d.a.], <<https://unstats.un.org/sdgs/metadata/?Text=&Goal=&Target=16.7>> accessed 3 October 2022
- United Nations, 'Women...in the shadow of climate change', UN Chronicle, [n.d.b.], <<https://www.un.org/en/chronicle/article/women-in-shadow-climate-change>>, accessed 20 November 2022
- UN Women, Europe and Central Asia, 'Central Asian governments discuss the integration of gender equality into climate change policies', 15 February 2022, <<https://eca.unwomen.org/en/stories/press-release/2022/02/central-asian-governments-discuss-the-integration-of-gender-equality-into-climate-change-policies>>, accessed 20 November 2022
- van Mil, M., *Substantive Equality and Women's Representation in Public Institutions*, Constitutional Assessment for Women's Equality Series No. 2 (Stockholm: International IDEA, 2022), <<https://doi.org/10.31752/idea.2022.34>>

- Von Kameke, L., 'Proportion of seats held by women in national parliaments in Myanmar from 2011 to 2021', Statista, 19 October 2022, <<https://www.statista.com/statistics/730677/myanmar-proportion-of-seats-held-by-women-in-national-parliament>>, accessed 20 November 2022
- Woods, K. M., 'Commercial agriculture expansion in Myanmar: Links to deforestation, conversion timber and land conflicts in Myanmar', March 2015, <<https://www.forest-trends.org/publications/commercial-agriculture-expansion-in-myanmar-links-to-deforestation-conversion-timber-and-land-conflicts>>, accessed 20 November 2022
- World Bank, *Myanmar, Country Environmental Analysis*. Synthesis report (Washington, DC: World Bank, 2019a), <<https://documents1.worldbank.org/curated/en/464661560176989512/pdf/Synthesis-Report.pdf>>, accessed 20 November 2022
- , *Myanmar's Urbanization: Creating Opportunities for All* (Washington, DC: World Bank, 2019b), <<https://documents1.worldbank.org/curated/en/807471559656318146/pdf/Creating-Opportunities-for-All-Full-Report.pdf>>, accessed 20 November 2022
- , *Energy Sector: Myanmar Infrastructure Monitoring* (Washington, DC: World Bank, 2022), <<https://documents1.worldbank.org/curated/en/099045104062298290/pdf/P177540085ed880ca098230031387b28dd2.pdf>>, accessed 20 November 2022
- , World Bank Development Indicators, <<https://datatopics.worldbank.org/world-development-indicators>>, accessed 20 November 2022
- World Bank Group, *World Development Report 2011: Conflict, Security and Development* (Washington, DC, World Bank, 2011), <<https://openknowledge.worldbank.org/handle/10986/4389>>, accessed 20 November 2022
- World Data Atlas, Myanmar: Agricultural land area, 2020, <<https://knoema.com/atlas/Myanmar/Agricultural-land-area>>, accessed 28 September 2022
- World Wildlife Fund (WWF) Asia-Pacific, 'Going viral: Myanmar's wildlife trade escalates online', 2021, <https://wwfasia.awsassets.panda.org/downloads/wwf_online_trade_ji_v2_2.pdf>, accessed 20 November 2022
- Yi, E. E. P. N., Nway, N.C., Aung, W. Y., Thant, Z., Wai, T. H., Hlaing, K. K., Maung, C., Yagishita, M., Ishigaki, Y., Win-Shwe, T.-T., Nakajima, D. and Mar, O., 'Preliminary monitoring of concentration of particulate matter (PM_{2.5}) in seven townships of Yangon City, Myanmar', *Environmental Health and Preventive Medicine*, 23/53 (2018), <<https://doi.org/10.1186/s12199-018-0741-0>>

About the authors

Sharon P. Hickey is Associate Programme Officer in International IDEA's Constitution-Building Programme, where she generates knowledge on comparative constitutional process and design and supports constitution-building processes. She is also the editor of ConstitutionNet, International IDEA's platform dedicated to providing regular updates and original analysis on constitutional reform developments worldwide. Sharon graduated from the National University of Ireland, Maynooth, where she served as executive editor of its law review, and earned her LL.M. from Columbia Law School, where she was an editor of the *Columbia Human Rights Law Review*. She is a member of the New York Bar.

Elodie Maria-Sube is a Bangkok-based environmental economist, where she provides analysis and policy advice on various themes including climate finance, climate mitigation and sustainable production. Prior to her current role, she worked for the EU, UN-Habitat and the Myanmar Institute for Integrated Development in Yangon from 2016 until 2021. She previously held environment-related roles at international institutions in India and Cambodia. She holds a MSc in Environmental Management from the University of London, a MSc in Business and Development Studies from Copenhagen Business School, and a MSc in Management from HEC School of Management in Paris.

About International IDEA

The International Institute for Democracy and Electoral Assistance (International IDEA) is an intergovernmental organization with the mission to advance democracy worldwide, as a universal human aspiration and enabler of sustainable development. We do this by supporting the building, strengthening and safeguarding of democratic political institutions and processes at all levels. Our vision is a world in which democratic processes, actors and institutions are inclusive and accountable and deliver sustainable development to all.

WHAT WE DO

In our work we focus on three main impact areas: electoral processes; constitution-building processes; and political participation and representation. The themes of gender and inclusion, conflict sensitivity and sustainable development are mainstreamed across all our areas of work.

International IDEA provides analyses of global and regional democratic trends; produces comparative knowledge on good international democratic practices; offers technical assistance and capacity-building on democratic reform to actors engaged in democratic processes; and convenes dialogue on issues relevant to the public debate on democracy and democracy building.

WHERE WE WORK

Our headquarters is located in Stockholm, and we have regional and country offices in Africa, the Asia-Pacific, Europe, and Latin America and the Caribbean. International IDEA is a Permanent Observer to the United Nations and is accredited to European Union institutions.

<<https://www.idea.int>>



International IDEA
Strömsborg
SE-103 34 Stockholm
SWEDEN
+46 8 698 37 00
info@idea.int
www.idea.int

Myanmar is rich in natural resources and a global biodiversity hotspot. Myanmar is also one of the countries worst affected by climate change and one of the least equipped to improve its resilience without external support. How to manage natural resources has always been at the heart of Myanmar's history and learning how to manage economic development sustainably became a central question of Myanmar's democratic transition.

Since the February coup, the people of Myanmar have been mobilizing against the military through protest and an armed resistance led by 'People's Defence Forces' and ethnic resistance organizations. These groups of actors and their associated federal-level interim governance institutions are developing a political framework to negotiate both an interim constitution and a permanent constitution for the future Federal Democratic Union of Myanmar.

This Policy Paper provides an overview of Myanmar's environment- and climate-related governance challenges. It also identifies key considerations on how a future constitutional framework could guarantee environmental protection, protect biodiversity, promote access to justice and address climate change, informed by international good practices and comparative case studies.