

Enhancing readiness for green growth: A preliminary assessment of Myanmar's policies and institutions

Ikuho Miyazawa¹ and Kenta Usui²

November 2013

Abstract:

As Myanmar attracts investment and improves its economic prospects, green growth has moved steadily up the policy agenda. The heightened importance of green growth is visible in high-level political statements as well as policy and institutional reforms that could translate those words into action (i.e. Environmental Conservation Law 2012). Yet there still remains considerable uncertainty over whether Myanmar is indeed ready for green growth. This paper offers a preliminary assessment of those readiness conditions. The assessment is based upon reviews of the current status of the environment as well as the policy and institutional reforms needed to green the management of two critical resources: water and energy. Based on this review, this paper argues that Myanmar has considerable scope to 1) strengthen environment-related bodies, 2) mainstream green growth into Myanmar's development planning, and 3) learn from and work with neighbouring countries to enhance its readiness for green growth.

The views expressed in this working paper are those of the authors and do not necessarily represent those of IGES. Working papers describe research in progress by the authors and are published to elicit comments and further debate.

© 2013 Institute for Global Environmental Strategies. All rights reserved.

Institute for Global Environmental Strategies
2108-11 Kamiyamaguchi, Hayama, Kanagawa, Japan 240-0115
Tel: 81-46-855-3830 Fax: 81-46-855-3809
URL: <http://www.iges.or.jp>

¹ Policy Researcher, Integrated Policies for Sustainable Societies Area, Institute for Global Environmental Strategies (IGES), Japan
Email: miyazawa@iges.or.jp

² Policy Researcher, Climate and Energy Area, Institute for Global Environmental Strategies (IGES), Japan
E-mail: usui@iges.or.jp

Table of Contents

1. Introduction.....	3
2. Current status of the environment in Myanmar	3
2.1 General environmental conditions.....	3
2.2 Water sector.....	4
2.3 Energy sector	5
3. Policies and institutions.....	8
3.1 Environmental policies and institutions.....	8
3.2 Policies and Institutions in the Water Sector.....	10
3.3 Policies and Institutions in the Energy Sector	11
4. Preliminary findings and the way forward for Myanmar’s greener growth	12
4.1 Preliminary findings	12
4.2 The way forward.....	13
References.....	17

1. Introduction

Myanmar is attracting a significant amount of global interest. With 60 million people, a sizable pool of low-cost labour, and rich mineral and energy resources, much of this interest has focused on the country's untapped growth potential. What is less discussed are the two contrasting approaches Myanmar could take to realise this potential. The first—the grow-first, clean-up later model—would involve leveraging the country's labour force to extract natural resources with little regard for environmental, economic and social impacts. The second—the green growth model—would involve establishing policy frameworks and governance architectures to harmonise social, environmental and economic priorities. The main purpose of this working paper is to outline the opportunities and challenges for the green growth model, paying particular attention to the water and energy sectors. This paper is targeted at policymakers in donor countries and Myanmar, as well as the international investment and development community more generally.

This paper shows that environmental and natural resource management have moved steadily up the policy agenda as Myanmar attracts investment and improves its economic prospects. The heightened importance of green growth is visible in high-level political statements as well as policy and institutional reforms that could translate those words into action (i.e. Environmental Conservation Law 2012). Yet there still remains considerable uncertainty over whether Myanmar is indeed ready for green growth. This paper offers a preliminary assessment of those readiness conditions. The assessment is based upon reviews of the current status of the environment as well as the policy and institutional reforms needed to green the management of two critical resources: water and energy. Based on this review, this paper argues that Myanmar has considerable scope to 1) strengthen environment-related bodies, 2) mainstream green growth into Myanmar's

development planning, and 3) learn from and work with neighbouring countries to enhance its readiness for green growth.

This working paper is divided into three sections. The first section provides an overview of the current status of the environment in Myanmar with a focus on the water and energy sectors. The next section examines the challenges and opportunities in Myanmar's environmental policies and institutional framework with links to the water and energy sectors. The third section outlines key findings and the way forward.

2. Current status of the environment in Myanmar

2.1 General environmental conditions

In recent years, Myanmar has undergone a political and economic transformation. A high level political commitment to green growth has been part of that transformation. In 2012, for instance, Mr. Thein Sein, the President of Myanmar affirmed this commitment with a pledge to seek economic development in parallel with environmental conservation. Around the same period, Myanmar Vice President Dr. Sai Mauk Khan informed participants at the 2nd Myanmar Green Economy Green Growth (GEGG) Forum that “growth first, clean up later” was over. This high-level political commitment could indeed help advance green growth in Myanmar.

Myanmar also possesses several other innate characteristics that could complement this political commitment. These include the country's vast wealth of natural resources (forest, water and energy resources) and rich biodiversity. They also include Myanmar's low levels of greenhouse gas (GHGs) emissions. Though GHGs are expected to increase, Myanmar may be well placed to leapfrog the energy-intensive lock-ins familiar to advanced economies.

However, the news is not wholly positive for green

growth in Myanmar. Fast rising air and water pollution as well as increasing municipal waste are the most visible challenges to green growth. The country's vulnerability to climate change presents yet another significant, though less predictable, hurdle. A sharp upswing in illegal logging and deforestation as well as illegal trade in endangered species are other notable threats.

As summarised in Table 1, in nearly every sector Myanmar has the potential for green growth, but also faces challenges. To give the analysis a sharper focus, this paper will focus on the energy and water sectors. These two sectors were selected because

Myanmar 1) possesses a wealth of both resources; 2) these resources are attracting a significant amount of foreign direct investment; and 3) the government derives considerable financial resources and revenue from their management. The underlying premise is that if Myanmar can green the management of its water and energy resources, it can go a long way to achieving green growth. To begin that assessment, it is important to look at both the potential for and the challenges to green growth in both sectors. Table 1 briefly summarises the current status of the environment in selected sectors.

Table 1: Myanmar's main environmental concerns

Energy and Water	<ul style="list-style-type: none"> - Myanmar is rich in water with 18,000 cubic metres of water available per person annually. However, the actual water consumption is only 5% of this quantity. - Water demand is likely to increase with economic growth.
Energy and Climate	<ul style="list-style-type: none"> - The primary source of energy is biomass, while hydropower is being developed and holds great potential for the country. - Currently, greenhouse gas emissions are very low. Net emissions are likely to be negative due to carbon sequestration by forests. - Myanmar is a signatory to the UNFCCC, and is currently developing a National Adaptation Programme of Action.
Forest	<ul style="list-style-type: none"> - Approximately half of Myanmar's land is covered by forest, but the area is currently decreasing. Illegal logging is a key factor.
Biodiversity	<ul style="list-style-type: none"> - Extremely rich. Myanmar has 42 protected areas, composing 4.2% of the total land. - Illegal trading of natural resources and wildlife animals is common.
Waste management	<ul style="list-style-type: none"> - Illegal dumping and combustion are common. - Urban waste management is improving, but there is a lack of experience in dealing with industrial hazardous waste.
Air pollution	<ul style="list-style-type: none"> - The primary source of pollution is the transport sector, in which the number of vehicles has doubled from 2004 to 2009
Natural disasters	<ul style="list-style-type: none"> - The country is one of the most vulnerable countries to climate change according to the Global Climate Risk Index 2010. - Most recently, it has suffered severe damage by cyclone Nari (2008) and Giri (2010)

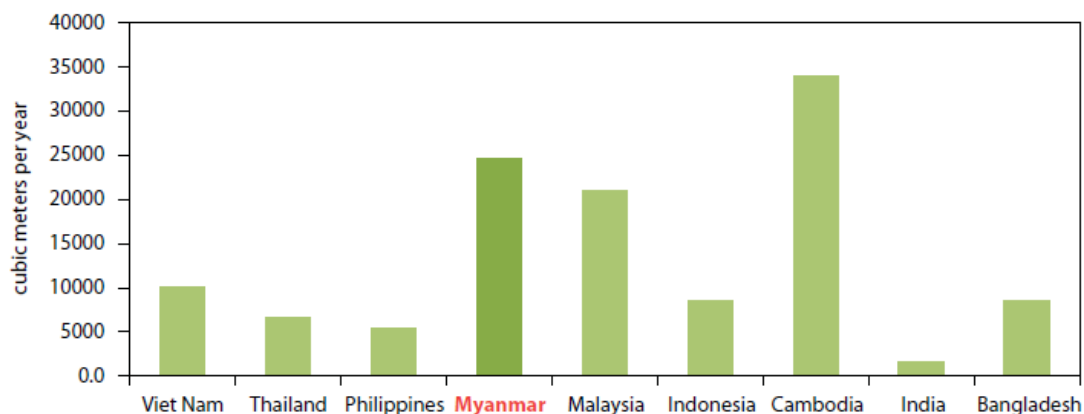
Source: United Nations (2011), IGES (2012), Ministry of Forestry of Myanmar (2009)

2.2 Water sector

Myanmar is abundant in water...

Myanmar is endowed with abundant water resources with a per capita water resource availability of more than 18,000 cubic metres

annually (ASEAN and Hans Seidel Foundation 2009), but faces challenges from uneven spatial and temporal distribution. As of 2010, the country's total renewable water resources stood at 24,352 cubic metres per inhabitant per year, higher than nearly all other economies in Asia (Figure 1).



Source: FAO-Aquastat 2012

Figure 1: Total Actual Renewable Water Resources per Inhabitant (2010)

..but has not fully harnessed it

Despite significant endowments, Myanmar has not fully harnessed the potential of its water. The country uses only 5% of its water resources, of which agriculture consumes 90% and industry and domestic use account for the rest (WEPA 2012). Also, under the Millennium Development Goals (MDGs), Myanmar has achieved about a 69% improvement in drinking water sources but there is less access to these sources than in other

neighbouring countries (Table 2). It is apparent that there is substantial potential for further utilisation of water resources for hydropower, as well as for irrigation, livestock production and industry. However, exploitation of water resources needs to be complemented by effective control and management of surface water and groundwater. Currently, licensing systems for groundwater extraction are in use, but enforcement poses serious challenges (United Nations 2011).

Table 2: Performance MDG7 Improved Drinking Water Source (%)

Myanmar		Indonesia		Malaysia		Thailand		Vietnam	
Earliest Year	Latest Year	Earliest Year	Latest Year	Earliest Year	Latest Year	Earliest Year	Latest Year	Earliest Year	Latest Year
57 [1990]	69 [2010]	71 [1990]	80 [2008]	88 [1990]	100 [2008]	91 [1990]	98 [2008]	58 [1990]	94 [2008]

Source: ADB (2012)

2.3 Energy sector

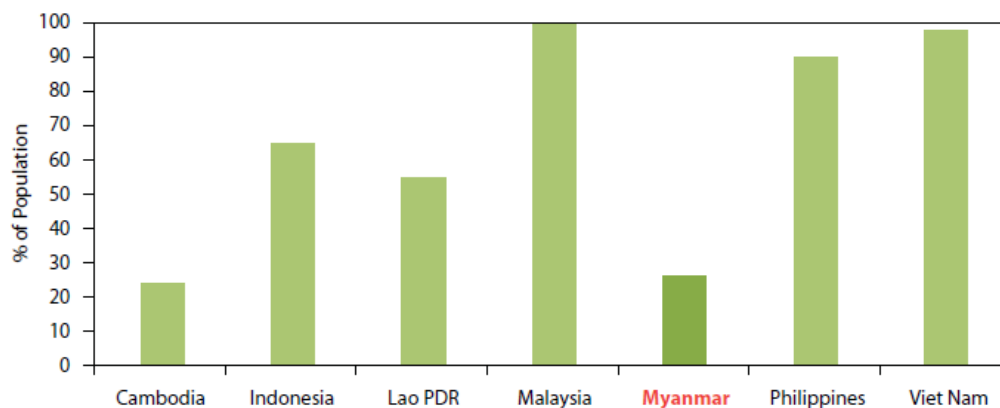
Another important sector for green growth in Myanmar is energy. Although Myanmar is rich in energy resources, especially in natural gas, it also faces significant challenges to modernise its

energy production and increase access to electricity. The majority of natural gas and hydropower electricity is exported to neighbouring countries, and this export serves as a significant source of revenue for the government of Myanmar.

Myanmar has limited access to modern energy

Myanmar's access to electricity is very low relative to other AESAN countries. As shown in Figure 2, the electrification rate in Myanmar was 30% in 2011 (ADB 2012). Furthermore, approximately 80% of domestic energy consumption was derived from biomass, this fact

also indicates that there is limited access to electricity. Roughly 70% of the electricity was generated from hydropower resources, but most of the electricity was exported abroad (Table 3). Similarly, natural gas was primarily used for export to neighbouring countries, and only a limited amount was consumed domestically.



Lao PDR = Lao People's Democratic Republic.

Note: The graph plots 2009 data, except for Myanmar, 2011.

Source: WB-WDI 2012 and data provided by MOEP-1 to the September 2011 ADB mission.

Figure 2: Electrification rate in 2011

Table 3: Sources of primary energy production and consumption in Myanmar, 2011

	Coal and peat	Crude oil	Oil Products	Natural gas	Hydro	Biofuels and waste	Electricity	Total
Production	411	881	286	1418	443	10617	0	14056
Consumption	232	0	1097	682	0	10577	492	13080

Thousand tonnes oil equivalent on a net calorific basis)

Source: IEA (2013)

The energy sector is the biggest foreign direct investment (FDI) destination of Myanmar

Despite its limited access to modern energy, Myanmar has great potential to increase the sources of modern energy. Thanks to Myanmar's rich natural gas and hydropower resources, the energy sector is the biggest destination of FDI in

Myanmar. As Table 4 shows, the power, oil and gas sectors collectively account for more than 75% of FDI to Myanmar (as of September 2013, accumulative), of which hydropower dams and gas field developments are the two largest components. China is by far the largest investor by investment amount, followed by Thailand and South Korea.

Table 4: Share of energy investments in accumulative foreign direct investment (FDI) to Myanmar

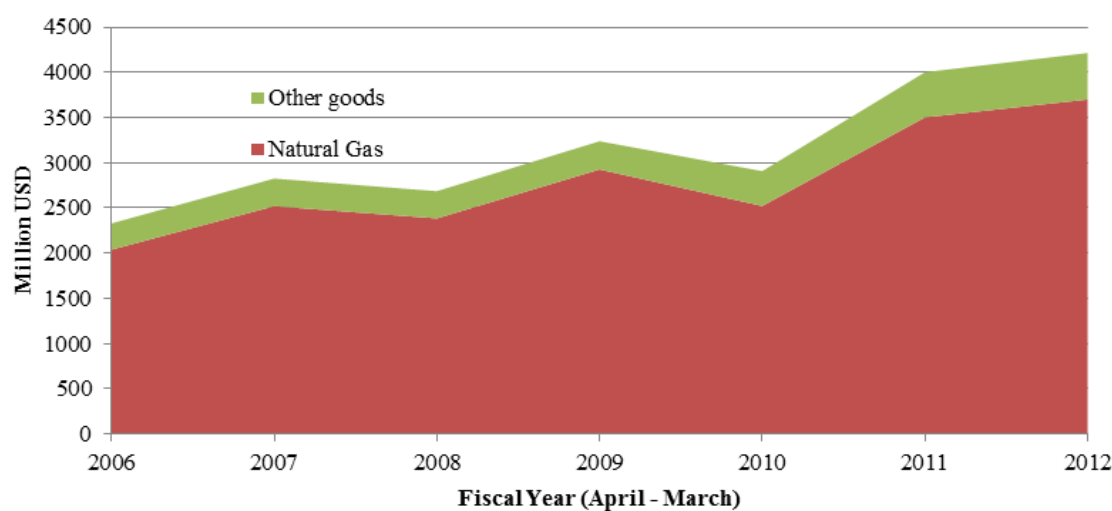
No	Sector	Number of Enterprises	Approved amount of investment	Share
1	Power	7	19284.432	43.93
2	Oil and Gas	115	14372.272	32.74
3	Mining	68	2833.734	6.45
4	Manufacturing	287	3456.306	7.87
5	Hotel and Tourism	50	1599.711	3.64
6	Real Estate	22	1229.15	2.8
7	Livestock & Fisheries	26	347.474	0.79
8	Transport & Communication	16	313.906	0.72
9	Industrial Estate	3	193.113	0.44
10	Agriculture	12	191.961	0.44
11	Construction	2	37.767	0.09
12	Other Services	12	41.892	0.1
	Total	620	43901.72	100

Source: Ministry of National Planning and Economic Development, Myanmar (2013) As of September 30 2013

.. and is also a significant source of government revenue

The Myanmar government draws a significant portion of its budget from gas extraction. Although natural gas is extracted by international firms, the government claims a significant portion of the revenue from the firms. In fiscal year 2011, natural

gas officially provided USD3.6 billion to Myanmar's government revenue (Figure 3). This resource revenue is a critical source of income for Myanmar's government (see also Box 1 for additional details on Myanmar's natural gas resources).



Source: Eleven Myanmar (2013)

Figure 3: Share of natural gas in Myanmar's export earnings

Box 1: Myanmar's natural gas resources

Three gas fields dominate the supply of natural gas production in Myanmar – Yadona, Yatagun and Shwe. Shwe is expected to start production in 2013 as one of the major supply sources of gas to China. The majority of the contractors are from Myanmar's neighboring countries, such as China, Thailand, India and Malaysia. The strong links with regional partners is not only attributable to geographical proximity but also is due to economic sanctions from the United States and European Union for the past decade. Natural gas has been a crucial source of foreign currency reserves for Myanmar during the period of economic sanctions. The natural gas revenue is expected to increase as Shwe gas field has started exporting natural gas in 2013.

List of major gas fields in Myanmar

Gas Filed Name	Estimated scale	Annual production	Extraction firm	Notes
Shwe	3.56+ trillion cubic feet	N/A	Daewoo International (60%), Korean Gas Corporation (10%), India's Oil and Natural Gas Corporation (20%), Gas Authority of India (10%)	Export to China starting in 2013
Yadona	5.7 trillion cubic feet	775 million cubic feet per day	Total (31%), Unocal (28%), Thai PTT Exploration and Production Public Company (26%), MOGE (15%)	Field life of 30 years. Exported to Thailand. Operated by Total
Yetagun	3.16 trillion cubic feet	424 million cubic feet per day	Petronus (41%) MOGE (21%), Nippon Oil (19%), PTTEP (19%)	Initial involvement by Texaco and Premier Oil.

Other possible gas fields include Ayadaw, Peppil, Apyauk, Nyaungdan, Indalog, and Zawtilla

Source: ADB (2012)

Given the significance of this resource revenue for the government of Myanmar, effective and transparent use of the revenue is of paramount importance. It is notable that, as the first step, Myanmar has signed up to the Extractive Industry Transparency Initiative (EITI). This indicates the government's willingness to be transparent and effectively use its resource wealth.

3. Policies and institutions

3.1 Environmental policies and institutions

Myanmar's government has actively promoted

environmental policy reforms since the country opened up in 2011. It is clear that the past two years of political reform have brought a stronger commitment to the environment than at any point previously. The most notable illustration of this is the decision taken in August 2012 to upgrade the former Ministry of Forestry (MOF) to the current Ministry of Environmental Conservation and Forestry (MOECAF).

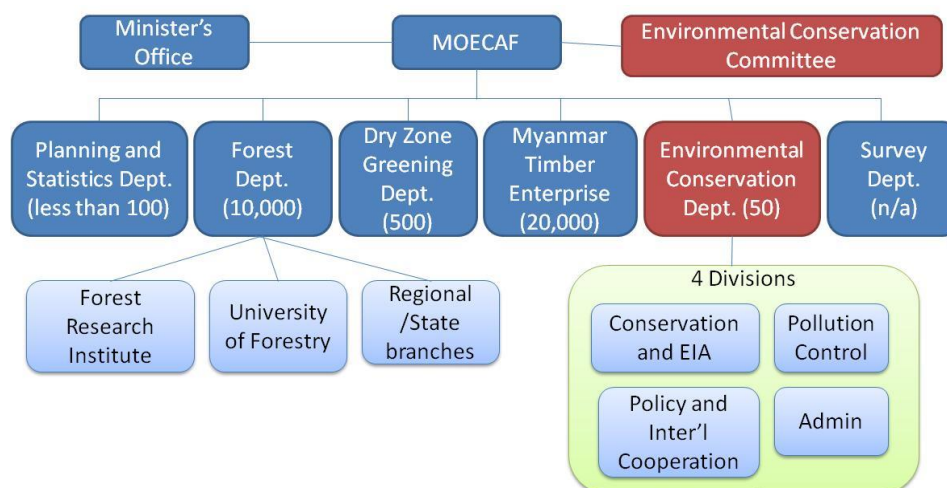
Ministry of Environmental Conservation and Forestry (MOECAF)

The Government of Myanmar consists of 33 ministries and as this number suggests, its structure

is very complex. The Ministry of Economic Development and Planning (MEDP) has a strong mandate to coordinate all the ministries, but the Government faces challenges regarding silo-based operations. To a certain extent, this reflects the fact that Myanmar has considered environmental problems to be a diplomatic issue. In fact, the National Commission for Environmental Affairs (NCEA) was initially established in 1990 under the Ministry of Foreign Affairs, but later came under the MOF's jurisdiction.

However, Myanmar's political-economic liberalisation and recognition of the need for an

agency which comprehensively addresses growing environmental problems led to the establishment of MOECA in 2012. The main mandate of MOECA is to coordinate relevant agencies and implement environmental policies. It is also responsible for establishing and supervising the Environmental Conservation Committee (ECC), which operates and approves overseas assistance, and secures finance for environmental conservation. Figure 4 shows the organisational structure of MOECA. Five regional offices in Yangon, Mandalay, Dawei, Ayawaradi, and Sagain are expected to be formed by the end of 2013.



Source: Authors, March 2013

Figure 4: Organisational Structure of MOECA

What is notable is that the Environmental Conservation Division, which is in charge of overall environmental policy-making and implementation, has a serious lack of human resources as compared to other divisions, despite high level commitments to pursue green growth.

Environmental Conservation Law 2012

The most visible sign of that commitment is the new Environmental Conservation Law (ECL) adopted in March 2012. As the country's basic environmental law, the ECL contains both basic environmental standards and regulations, as well as narrower provisions related to climate change mitigation and adaptation. It also has a number of noteworthy features, including: 1) the establishment of an Environmental Management Fund (including non-compliance fees) (Chapter IV,

Provision 8); 2) the definition of the duties and powers relating to MOECAAF (Chapter IV); 3) the establishment of the ECC (Chapter III); 4) the requirement that any business or work-sites which may impact environmental quality obtain prior permission (Chapter X, Provision 21); and 6) exemptions for any government entity or private business from complying with any provision contained in this Law for the interests of the Union and its people (Chapter XIV, Provision 36). This provision 36 indicates that “national interest” may

override the application of this law.

In addition to the adoption of ECL, Myanmar has been in the process of drafting specific laws and strategies. Table 5 shows the changes in the relevant environmental laws and strategies in Myanmar over time to illustrate the country’s efforts to improve environmental policy frameworks and institutions.

Table 5: Relevant environmental laws and strategies in Myanmar

1994	National Environment Policy of Myanmar - Aims to establish sound environmental policies for the utilisation of water, land, forest, mineral and marine resources, as well as other natural resources.
1997	Myanmar Agenda 21 - Four sections: sustainable use of natural resources, sustainable social development, sustainable economic development, and sustainable institutional development.
2008	Environmental provisions in the 2008 constitution - “the government shall protect and conserve the natural environment” (Chapter 4, Section 96).
2009	National Sustainable Development Strategies - Three goals: sustainable management of natural resources, integrated economic development and sustainable social development/ - 26 areas in environmental (11), economic(9), and social (6) areas.
2012	Environmental conservation law (Revision) - Formation of Environmental Conservation Committee (ECC) chaired by the Ministry of Environmental Conservation and Forestry (MOECAAF). - Also establishment of Environmental Management Fund.
In draft	- National Adaptation Programme of Action. - Initial National Communication to UNFCCC. - Environmental Impact Assessment Rules.

Although the role of MOECAAF and ECL is seen as a key for greener growth, actual policies and investment in specific sectors that effect the environment are often implemented by other ministries or governmental bodies. Hence it is important to review sectoral policies and institutions which are closely linked to the environment. In this paper, water and energy are believed to be two key sectors.

3.2 Policies and institutions in the water sector

Although the new ECL 2012 touches upon the need to develop environmental standards and water pollution measures, there is no single law that covers all aspects of water resources.

Institutionally, there is no particular agency responsible for the overall management of national water resources in the public and private sectors (FAO 2012). Currently, the Ministry of Agriculture

and Irrigation (MOAI) is the main ministry involved in water resources, with the mandate to develop agriculture and irrigation. The Water Resources Utilisation Department, Irrigation Department, Settlement and Land Records Department, and Agricultural Planning Department are all involved in water resources. Hydropower generation is supervised by the Myanmar Electric Power Enterprise, within the Ministry of Electric Power. At the national level, the National Water Resource Committee (NWRC) was established in 2005 together with the formulation of a strategic management plan (SMP) to enhance the application of integrated water resources management (IWRM) in the country. As of October 2012, a proposal to establish a Myanmar Water Commission (MWC) (upgrading the existing NWRC) had been submitted to the MOAI for official approval (MOECAF 2012). Recently, the MOAI Inter-Ministry Task Force on Water Resources (IMTFWR) presented the Strategic Plan for IWRM, and its main objective is to enhance the application of IWRM. On the ground level, water user associations (WUAs) and water user groups (WUGs) play an important role in water management.

Nevertheless, challenges remain in implementation and financing of the water sector. The Irrigation Department water tariff has been very low for gravity irrigation systems and does not cover the cost of maintenance work. Water prices for rice cultivation in the dam systems are 150 and 300 times less than those of the electric and diesel type river pumping systems.

3.3 Policies and institutions in the energy sector

As stated, the adoption of the new ECL has some implications for sector-specific policies and institutions, not only for the water sector, but also for the energy sector.

Myanmar’s governance on energy is complex

Myanmar’s governance on the energy sector is complex, as Figure 5 shows. The Ministry of Energy, particularly the Energy Planning Department, leads overall coordination and policy-making with support from eight additional line ministers. Recently, Myanmar has been conducting significant institutional reforms. For example, the Ministry of Electric Power No.1 and No.2 were merged in 2012, and the National Energy Management Committee was formed to oversee the energy sector in early 2013. This decision was made in response to criticism over institutional fragmentation and a lack of coordination among line ministries. Despite this improvement, the absence of a coordinated energy sector policy prevents effective implementation as, depending on the type of energy, specific energy-related policies are often led by other ministries. Moreover, limited human and financial resources and a lack of data and monitoring mechanisms hinder co-ordinated implementation of energy-related policies.

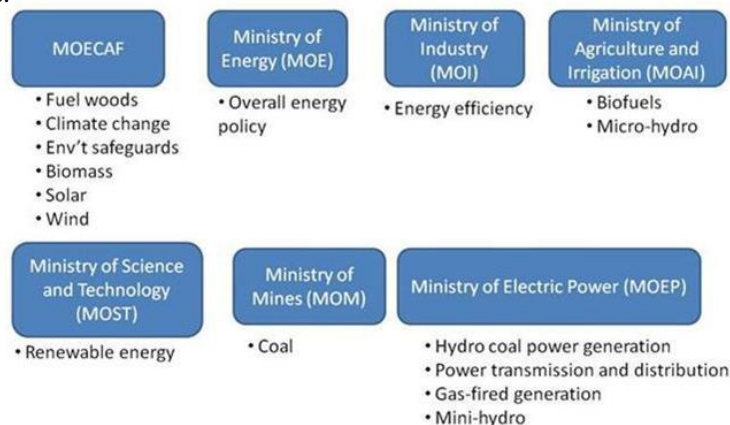


Figure 5: Demarcation of energy-related issues in the Government of Myanmar

4. Preliminary findings and the way forward for Myanmar’s greener growth

4.1 Preliminary findings

In the above sections, this paper highlighted the current status of Myanmar’s environment in general, as well as in the energy and water sectors. It also provided a preliminary analysis of the effectiveness of institutional settings in addressing challenges for the environment and these sectors. Key findings from the analysis are summarised in Table 6 and further elaborated below.

It is very clear that Myanmar is rich in natural resources. They are an important destination for FDI and a source of government revenue for Myanmar. But these resources are not fully harnessed for the benefit of Myanmar’s socioeconomic development; in reality, they are

underexploited, used primarily for export and only a limited amount of the resources are used for domestic consumption. Developing infrastructure to channel water and energy resources will help make these resources more readily available to the people of Myanmar.

It also became clear that Myanmar has made remarkable progress in the past few years to reform relevant policies and institutions to enable better environmental management. The launch of the Environmental Conservation Law and establishment of MOECAF are prime examples of this progress. Sector-wide coordinating mechanisms are emerging, such as the National Energy Management Committee and National Water Resource Committee, and more cross-ministerial coordination is under discussion. However, effective operation of these bodies seems

Table 6 Recent progress in and challenges faced by environment-related institutions in Myanmar

	General environment	Energy sector	Water sector
General characteristics	<ul style="list-style-type: none"> Rich endowment in natural resources, including forestry and biodiversity Growing environmental concerns in urban areas, such as air and water quality, waste management and traffic congestion 	<ul style="list-style-type: none"> Rich endowments of gas (and hydropower) Biggest FDI destination Gas as a significant source of government revenues Limited access to electricity 	<ul style="list-style-type: none"> Rich per capita availability of freshwater Sedimentation of rivers Increasing pollution
Recent progress	<ul style="list-style-type: none"> High level political support Increasing institutional and policy reforms Adoption of Environmental Conservation Law as a foundation for specific laws Upgrading of the former MOF to MOECAF 	<ul style="list-style-type: none"> Aims at achieving ASEAN energy target 	<ul style="list-style-type: none"> National Water Resource Committee established in 2005
Policy and institutional challenges	<ul style="list-style-type: none"> Legally, national interests may override the application of ECL. Limited human and financial capacity Limited inter-ministerial coordination 	<ul style="list-style-type: none"> Lack of long-term integrated energy planning and implementation Lack of transparency and energy policy and pricing mechanism (ADB, 2012) Limited data 	<ul style="list-style-type: none"> Environmental and social impacts of hydropower dam projects No single law that covers all aspects of water resources No particular agency responsible for overall management of national water resources

to be hindered by a shortage of financial and human resources. This is particularly the case with regards to MOECAF, where most of the staffing is allocated to the forest-related division and much less to broader environmental management. Strong

4.2 The way forward

Based on the preliminary results of this analysis, this paper makes the following suggestions to strengthen Myanmar's readiness for green growth. These suggestions focus on institutional strengthening. Since these suggestions are based on international experience, Myanmar will need to consider how they apply to its own circumstances and contextualise as necessary.

Strengthen environment-related bodies

Despite Myanmar's swift move to establish MOECAF and ECC, the government still suffers from a shortage of financial, technical and human resources. Notably, MOECAF has a limited number of staff to work on environmental conservation and faces budgeting shortfalls. Strengthening MOECAF and other environment-related units in other government bodies by equipping them with adequate resources would be a critical first step to effectively implement the Environmental Conservation Law and move towards greener growth.

International experience suggests that powerful bodies, such as the President's office or Planning Ministries, are well placed to address cross-sectoral matters such as climate change and green growth (OECD 2009). Establishing a central committee on green growth in these powerful bodies, for example, would be instrumental to engage with all of the relevant ministries and encourage them to take a whole-of-government approach to green growth.

political commitment to greener growth needs to be supported by the provision of adequate resources to competent bodies, such as MOECAF and other environment-related bureaus.

Mainstream the idea of green growth in Myanmar's development planning

In order to pursue a greener development path, Myanmar could develop a green growth strategy to guide policies and decision-making at multiple levels of government. This strategy could draw on the National Sustainable Development Strategy of Myanmar from 2009, but may focus more on growth opportunities arising from the sustainable management of its natural assets. A central body, as described above, would be in a good position to play a major role in drafting such a strategy.

This strategy would have a key part in linking the water-energy nexus so as to avoid bifurcating policy formulations into sectoral silos. This process may also identify a need to create new authorities or laws to effectively address specific issues. Water and climate change are two examples whose importance is well recognised but nonetheless lack a single institutional home.

However, developing a stand-alone green growth strategy is only the first step. The Strategy would need to be integrated into Myanmar's development plans and budgetary allocations in order to ensure consistency of policies and to make on-the-ground impacts. A possible illustration of such a "greening" process is provided in Figure 6.

The Green Growth strategy can then be integrated into a Twenty Year National Comprehensive Development Plan to 2031, as well as the Five Year Development Plans that are currently being developed.

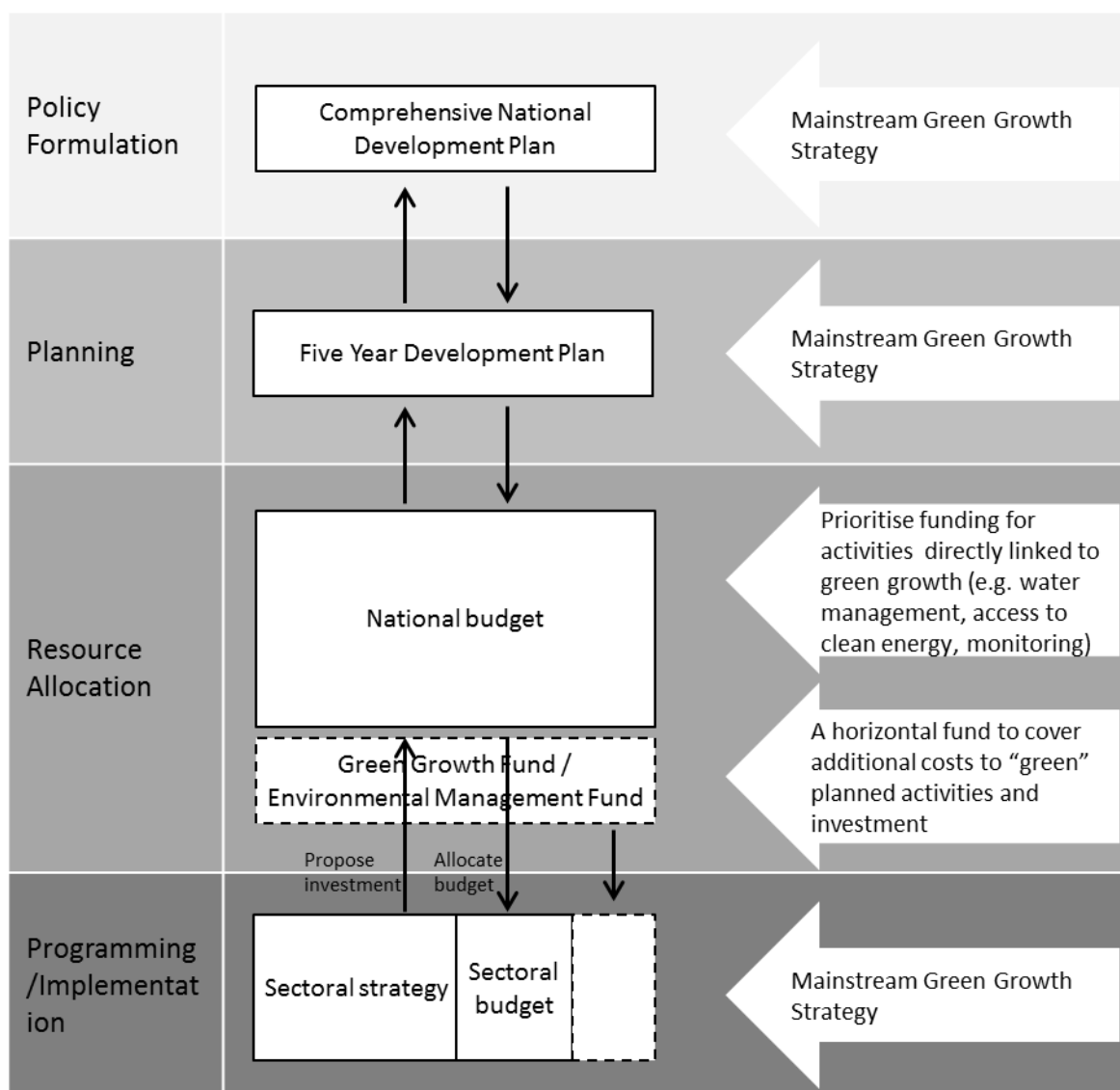


Figure 6: Integrating green growth into national decision-making in Myanmar

Source: Authors based on illustrations in OECD (2009)

In so doing, line ministries will be encouraged to consider the environmental impacts of their sectoral investments, as well as harness economic opportunities from the sustainable management of natural resources and the growth of industries that make positive environmental impacts.

Furthermore, as these issues are reflected in national development plans, national budgetary allocation can also prioritise key sectors and investments linked to green growth. As this paper has illustrated, enhancing access to clean energy,

improving access to water, and strengthening environmental and social safeguards can be a part of the list of priorities. A horizontal fund for green growth, which could be tapped by line ministries to cover the additional costs of “greening” their investment (e.g. switching to more energy-efficient turbines), could also be established to complement the national budget. An Environmental Management Fund, as described in the 2012 ECL, could potentially serve this role, although the current status and portfolio of the Fund is still uncertain.

Subsequently, sectoral policies, plans and budgets could become greener. This process may occur, for example, on National Energy Policy currently being drafted. Also, it is important to review all existing laws, legislations, rules and regulations to develop a unified water resources law to more comprehensively address the inherently

multi-sectoral nature of this resource. The ECL, can serve as a useful benchmark to ensure that environmental considerations are reflected in sectoral policy making. It also may provide a statutory basis for managing nexus issues such as the water-energy nexus (Table 7).

Table 7: Environmental Conservation Law as a benchmark for green sectoral policies

ECL		Selected sectors	
Chapter	Main Texts	Water	Energy
I-II	(Definitions, objectives) • Environmental Quality Standards/Audit/ Pollution/Waste etc. • Lay down basic principles		
III	(ECC) • Organisational education and environmental activities • Inter-ministerial coordination/financial and technical assistance		
IV	(MOECAF) • Plan, implement, monitor, and review environmental conservation policies/prescribe environmental quality standards • Facilitate environmental disputes/Donor coordination and implementation • Lay down EIA and SIA/guidance for specific sectors • Establish an Environmental Management Fund • Handle environmental emergencies	✓	✓
VI	(Environmental Quality Standards) • Water quality, surface water quality, underground water quality • Atmospheric quality, noise, emissions, solid waste standards etc.	✓	
VII	(Environmental Conservation) • Monitor environmental conservation (i.e. waste, pollution, etc.)	✓	
VIII	(Management of Urban Environment) • Land use planning, construction industry, housing settlement waste, and pollution control (land, water, air, noise etc.) etc.	✓	✓
IX	(Natural Resources and Cultural Heritage) • Enhance the sustainable use of natural resources (forest, land, water, mineral, agricultural, fisheries, marine, biodiversity etc.)	✓	✓
X-XIV	(Prior Permission, Insurance, prohibitions, Offences and Penalties, and Miscellaneous) • Need prior permission of the MOECAF for any businesses that may impact on environmental quality, otherwise punishment will be applied. • The holder of the prior permission is given insurance for their business	✓	✓

Learning from and working with neighbouring countries

In transitioning to green growth, Myanmar could work with its neighbouring countries in two important ways. The first is peer-learning with regards to the processes needed to develop and implement green growth. Viet Nam adopted its National Green Growth Strategy in 2012, and Cambodia adopted its National Green Growth Roadmap in 2009 and Green Growth Plan 2013-2030 as well as launching the National Council on Green Growth. Although it is too early to assess the effectiveness of these initiatives, Myanmar could certainly learn from the experiences of these countries. Myanmar can also learn lessons regarding more specific policy instruments such as environmental regulation and taxation, as they will be required as a part of the policy mix to implement green growth. This kind of learning process could take place under an ASEAN framework.

A second area for international cooperation is responsible investment. As a major share of FDI to Myanmar flows from its neighbouring countries, Myanmar could work with the governments from which investment originates to ensure environmentally and socially responsible investments. This would be particularly important for the energy sector (including hydropower) where FDI plays a major role. Given that a significant amount of FDI flows from ASEAN countries to Myanmar, and taking advantage of its role as the ASEAN Chair in 2014, Myanmar could initiate an ASEAN process to formulate a responsible investment framework to guide intra-ASEAN investment flows and investments from outside the region. The OECD Guidelines for Multinational Enterprises provides a useful framework on how such agreements can be implemented. In addition, Myanmar could encourage foreign investment in green technologies and industries (e.g. renewable energy,

waste management, water management). This would bring in resource-efficient and cleaner goods and services that would enhance Myanmar's readiness for green growth.

References

- Asian Development Bank (2012): Myanmar Energy Sector Initial Assessment
- Asian Development Bank (2012), Myanmar in Transition: Opportunities and Challenges.
- ASEAN and Hanns Seidel Foundation (2009), ASEAN State of the Environment Report.
- Eleven Myanmar (2013) Myanmar gas exports to hit new record of nearly 4 billion – official says. Unknown date.
- Food and Agriculture Organization (FAO), AQUASTAT 2012.
http://www.fao.org/nr/water/aquastat/countries_regions/MMR/index.stm
- Government of Myanmar (2012) Myanmar Government's Statement at the United Nations Conference on Sustainable Development (Rio+20), Rio de Janeiro, Brazil, June 2012.
- Government of Myanmar (2012) Opening remarks by Myanmar Vice President Dr. Sai Mauk Khan at the 2nd Green Economy Green Growth Forum,
- International Energy Agency (2012) Balances for 2010.
<http://www.iea.org/statistics/statisticssearch/report/?country=MYANMAR&product=balances&year=2010>
- IGES (2012) Background paper for the second GEGG
- OECD (2009) Integrating Climate Change Adaptation into Development Co-operation
- OECD (2011): OECD Guidelines for Multinational Enterprises.
- The Nation (2012): Ministry reveals gas revenue for first time. July 18 2012
<http://www.nationmultimedia.com/aec/Ministry-reveals-gas-revenue-for-first-time-30186368.html>
- Ministry of Forestry of Myanmar (2009) National Sustainable Development Strategy for Myanmar
- MOECAAF (2012) Water management in Myanmar. presented at the Asia Water Management Forum, 29th October, 2012 Seoul, Korea.
- United Nations (2011) United Nations Country Team in Myanmar (2011), Thematic Analysis 2011: Achieving the Millennium Development Goals in Myanmar.
- Water Environment Partnerships in Asia (WEPA), Myanmar,
<http://www.wepa-db.net/policies/state/myanmar/myanmar.htm>