

A Toolkit of Policy Options to Support Inclusive Green Growth

Revised version¹ (July 2013) of the original submission to the G20 Development Working Group by the AfDB, the OECD, the UN and the World Bank²

¹This version contains two new tools: “Making Growth Resilient to Climate Change through Smart Planning” and “Effective and Efficient Policies to Support Sustainable Energy in Developing Countries”, and the revised tool on “Achieving Water Security for Inclusive Green Growth”.

² The UN contribution was coordinated by UNDP and included inputs from in particular FAO, IFAD, ILO, UNEP, WFP and UNDESA. Members of UN-Water and UN-Energy contributed to the respective tools in their areas of work.

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Highlights

Much of green growth is about good policies—addressing market failure and “getting the price right” by introducing environmental taxation, pricing the use of scarce natural resources and pollution (such as carbon pricing), defining and enforcing property rights, and reforming inefficient subsidies. Integrated policy approaches to growth are critical for enabling the private sector to undertake needed investments and innovations and for getting both consumers and businesses to internalize the true costs of their behavior.

This toolkit focuses on inclusive green growth—growth that not only helps green economies, but also helps move towards sustainable development by ensuring environmental sustainability contributes to, or at least does not come at the expense of, social progress.

While we have good reason to think that improved environmental performance will benefit the poorest and most vulnerable, green growth policies must be carefully designed to maximize benefits and minimize costs for them, particularly during the transition. There is thus a critical need for policy design that also ensures that skills are upgraded and that jobs are decent, that vulnerable groups are not marginalized or left behind, and that revenues from fiscal reforms are also channeled into broader social protection and health measures.

A number of the tools that will be mobilized to implement inclusive green growth policies are “classic” public management tools, but this document focuses only on the most relevant instruments vis-à-vis green growth in developing countries, as these instruments are widely known and implemented the world over.

What this toolkit aims for instead is to provide policy-makers with:

- A framework to help develop inclusive green growth strategies that are well anchored into countries/regions/cities’ broader development goals, and that efficiently and consistently combines the many instruments that are needed in a coherent policy package.
- An overview of some of the key tools that specifically address the challenges raised by making growth green and inclusive. Quick technical descriptions of these tools (or policy instruments, methodologies and approaches) are offered along with suggested sources for further details.
- A brief discussion of knowledge sharing and capacity building challenges and solutions, including the Green Growth Knowledge Platform (GGKP) developed by a number of international organizations (IOs) to identify knowledge gaps, remediate these and create communities of practice.

This toolkit does not pretend to be exhaustive and should be understood as a initial iteration on a broad and emerging policy arena. It could therefore become a living document that could be periodically updated as new tools and instruments to support inclusive green growth are developed. Further, continued consultation on these tools amongst the various institutions (IOs, think tanks, bilateral donors) that support inclusive green growth could help lead to common approaches and practices and promote a better understanding of how different approaches and tools complement each other.

Given the relevance of these tools for inclusive green growth, a process in which IOs and relevant partner institutions work together towards the harmonization and complementarity of tools and practices relevant for fostering inclusive green growth is desirable. In particular, the G20’s highlighting or endorsement (whichever appropriate) of one or several of these initiatives and knowledge sharing activities (notably the Green Growth Knowledge Platform described in Section 4) would facilitate the work and yield increased benefits for countries. One option to make this a living toolkit would be to develop it in a “wiki” type approach, as a program under the broader Knowledge Platform.

1. Introduction

In 2012, the Mexican Presidency of the G20 introduced inclusive green growth as a cross-cutting priority on the G20 development agenda. The second meeting of the G20 Development Working Group (DWG), hosted by the Government of the Republic of Korea, took place in Seoul the 19th and 20th of March 2012. As agreed during the first DWG meeting, this second meeting focused on the priorities for their presidency in the first half of 2012: infrastructure, food security and inclusive green growth (IGG). At its Seoul meeting, the DWG also agreed that IGG co-facilitators and relevant IOs (the AfDB, OECD, UN, and World Bank) should work together in 2012 to develop a non-prescriptive Good Practices Guide/Toolkit on enabling national policy frameworks for inclusive green growth to support countries who voluntarily wish to design and implement affordable and inclusive green growth policies, with the aim of achieving sustainable development and poverty alleviation.

Within the G20 process, the DWG has fully recognized that inclusive green growth is a key element of long term sustainable development. In addition, the DWG has emphasized that embarking on inclusive green growth must not become a prescriptive conditionality for developing countries and G20 countries alike to access international assistance and resources. Instead, the international community must come together to support developing countries seeking to put in place country-driven and nationally-appropriate tools that foster economic growth which is both environmentally sustainable and socially inclusive. Inclusive green growth will not happen on its own, deliberate policy and investment decisions need to be taken at all levels, local to global, to ensure that economic growth is in fact green and inclusive .

The policy package needed to implement inclusive green growth instruments will differ across countries depending upon their national circumstances and level of development. For example, poorer countries are more likely to find sustainable agriculture (Box 1) than improved industrial practices at the heart of inclusive green growth. The economies of developing countries, especially low income countries (LICs), frequently exhibit characteristics that can complicate the implementation of inclusive green growth policies. These often include:

- High dependence on natural resources for both livelihoods and economic growth
- High degree of vulnerability to climate change
- Lack of basic infrastructure and services
- Large informal economies
- High levels of poverty and inequality
- High population growth rates
- Rapid urbanization processes and growth of urban areas
- Limited capacity for policy development, financing and implementation
- Limited public and private capacity for technological innovation and investment

- Severe economic, social and ecological threats from energy, food and water security
Premature deaths due to pollution, poor water quality and diseases associated with a changing climate
- Underdeveloped financial markets and limited access to savings, credit and insurance products

Box 1. Inclusive Green Growth and agriculture and fisheries

Sustainable growth in agriculture is a key component of inclusive green growth. Agriculture- crops, livestock, forestry and fisheries- is the steward of most of the world's natural resources. The crop and livestock sectors use 70 percent of freshwater resources and, together with forestry, occupy 60 percent of the earth's land surface. Oceans cover 70 percent of the planet's surface and sustain fisheries and aquaculture, which accounts for a growing share of land and freshwater use. Agriculture produces food and raw materials for the bio-economy - including textiles, building materials, bio chemicals and renewable energy. Agriculture is an important economic activity especially in developing countries where it is the source of livelihood for the large majority of the extremely poor, drives economic development and creates green job opportunities. Agriculture is closely linked with the quest for ensuring a sustainable development path that can ensure food security and proper nutrition for 9 billion people in 2050.

Ultimately, the billions of men and women who farm, keep livestock, fish, manage forests, and run agribusinesses will determine whether inclusive green growth becomes a reality. From poor smallholders to multinational corporations, they are stewards of natural resources, and they take risks and make investments every day in managing their enterprises. Properly applied, the tools in this toolkit can help guide their decisions to reflect true scarcity values of resources, take account of positive and negative social and environmental impacts and put agriculture onto a more sustainable path.

The motivation for inclusive green growth policies varies: the need to better harness natural resources for meeting basic needs, poverty alleviation, and providing sustainable livelihoods and job creation; the desire to mobilize resources and reduce burdens on public finances, while improving the environment; reduce vulnerability to environmental shocks and natural resource bottlenecks; or the goal of fostering new growth and employment opportunities.

Implementing inclusive green growth is a significant challenge. The scale of changes implies that countries will have to take "transformational" actions that redirect investment flows within and across sectors. Isolated project interventions alone will not suffice. However, not everything has to be done at once. An important contribution that a strategic framework can make is to help identify which interventions are urgent and which can wait; which can help address some of the immediate and critical challenges of developing countries and which imply trade-offs.

And there are important complementarities between inclusive green growth and poverty reduction. These include: more efficient and expanded coverage of water and energy services; reduced the health impacts associated with environmental degradation; reduced costs and increased productivity from technologies that also ease environmental pressure. Given the centrality of natural assets in low income

countries, inclusive green growth policies can reduce vulnerability to environmental risks and increase the livelihood security of the poor.³

The international community's focus must be to help developing countries catalyze investment for greener technology, practices, and enterprises that will make green growth possible and will contribute to an equitable development paradigm. Fortunately, a number of initiatives by IOs are underway to help support countries in these efforts (Box 2).

Box 2: Selected initiatives by international organizations to support inclusive green growth

The **African Development Bank (AfDB)** is taking inclusive green growth to the heart of its Long Term Strategy and designing its operations to account for the African specificities, notably (i) addressing the infrastructure gap as a fundamental enabler for economic growth, (ii) managing more efficiently Africa's natural resources as its stock of wealth and main source of income, (iii) and boosting economic and social resilience to exogenous shocks. In addition to its suite of green financing instruments such as ClimDev-Africa, Congo Basin Forest Fund (CBFF), African Water Facility (AWF) and Sustainable Energy Fund for Africa (SEFA), AfDB is developing an Africa Green Growth Facility for upstream work and capacity development on inclusive green growth.

The **OECD** is actively engaged with developing countries in many areas closely related to inclusive green growth. It has synthesized good practices on topics such as Environmental Fiscal Reform, Strategic Environmental Assessment, Climate Change Adaptation, and Capacity Development for Environmental Management and Governance to support efforts towards inclusive green growth. OECD tracks development co-operation support with environmental objectives and is currently also working with its members to mainstream green growth in areas of development co-operation as diverse as private sector development, infrastructure investment, and trade-related assistance. See www.oecd.org/greengrowth.

The **UN system** is a major provider of support; the system itself represents the different elements of inclusive green growth—for example, with IFAD focusing specifically on eradicating rural poverty, FAO promoting sustainable agricultural practices, WFP fighting hunger worldwide, ILO promoting green job creation, UNEP protecting the environment and providing advisory services on green economy, UNDP working to reduce poverty and inequality and strengthen governance and environmental sustainability, UNICEF and UNFPA promoting youth empowerment, UNIDO supporting sustainable industrial development, the UN Secretariat looking at broader economic development and investment aspects (UN-DESA, UNCTAD etc.), and WHO addressing health issues.

The **World Bank** is working to mainstream inclusive green growth in its operations and knowledge activities. Its report on “Inclusive Green Growth: The Pathway to Sustainable Development” (www.worldbank.org/inclusivegreengrowth) sets the framework for this mainstreaming. The World Bank has launched a series of complementary activities with partners. Such initiatives include: WAVES (Wealth Accounting and the Valuation of Ecosystem Services), LEDs (Low Emission Development), Climate Finance Options Knowledge Platform, to name a few.

In addition, the Global Green Growth Institute (GGGI), the OECD, UNEP and the World Bank jointly launched in early 2012 the GGKP, a global network of researchers and development experts seeking to identify and address major knowledge gaps in green growth theory and practice.

³ See for example the OECD's 2011 “Towards Green Growth: A Summary for Policymakers”; the World Bank's 2012 *Inclusive Green Growth: The Pathway to Sustainable Development*; UNEP's 2011 *Towards a Green Economy: Pathways to Sustainable Development and Poverty Alleviation*; UNDP's 2012 “Triple Wins for Sustainable Development. Case studies of Sustainable Development in practice”.

This document does not provide a one-size-fits-all solution to implement inclusive green growth strategies, because the appropriate measures and policies are highly dependent on the context, especially on the most pressing environmental, social, and economic issues. Countries will have different priorities depending on, among other, their income levels, the sectoral compositions of their economies, and the relative importance of sectors directly based on natural resources or with dependence on fossil fuels, and their specific risk and vulnerability profile from an environmental standpoint. The political economy of policymaking around green growth may also significantly shape the agenda in different countries.. Hence, this document merely provides a series of tools that can help design a strategy that is appropriate in a given context.

This toolkit should not be seen as a definitive answer to the challenges raised by inclusive green growth. It is rather the first step of a collaborative effort to mobilize the tools at the countries' disposal in their domestic efforts to green their economies.

The toolkit is organized as follows. First, the necessity of applying the different tools in the context of a broad inclusive green growth strategy is stressed, and a harmonized framework combining approaches and tools identified by all four IOs is set forth. Second, the document offers an overview of key tools that can be mobilized to implement an inclusive green growth strategy. Quick technical descriptions of these tools are offered along with suggested sources for further details. Finally, capacity building and knowledge sharing initiatives are presented, with the GGKP highlighted as a powerful collaborative tool to advance policies for inclusive green economies.

2. Crafting an inclusive green growth strategy

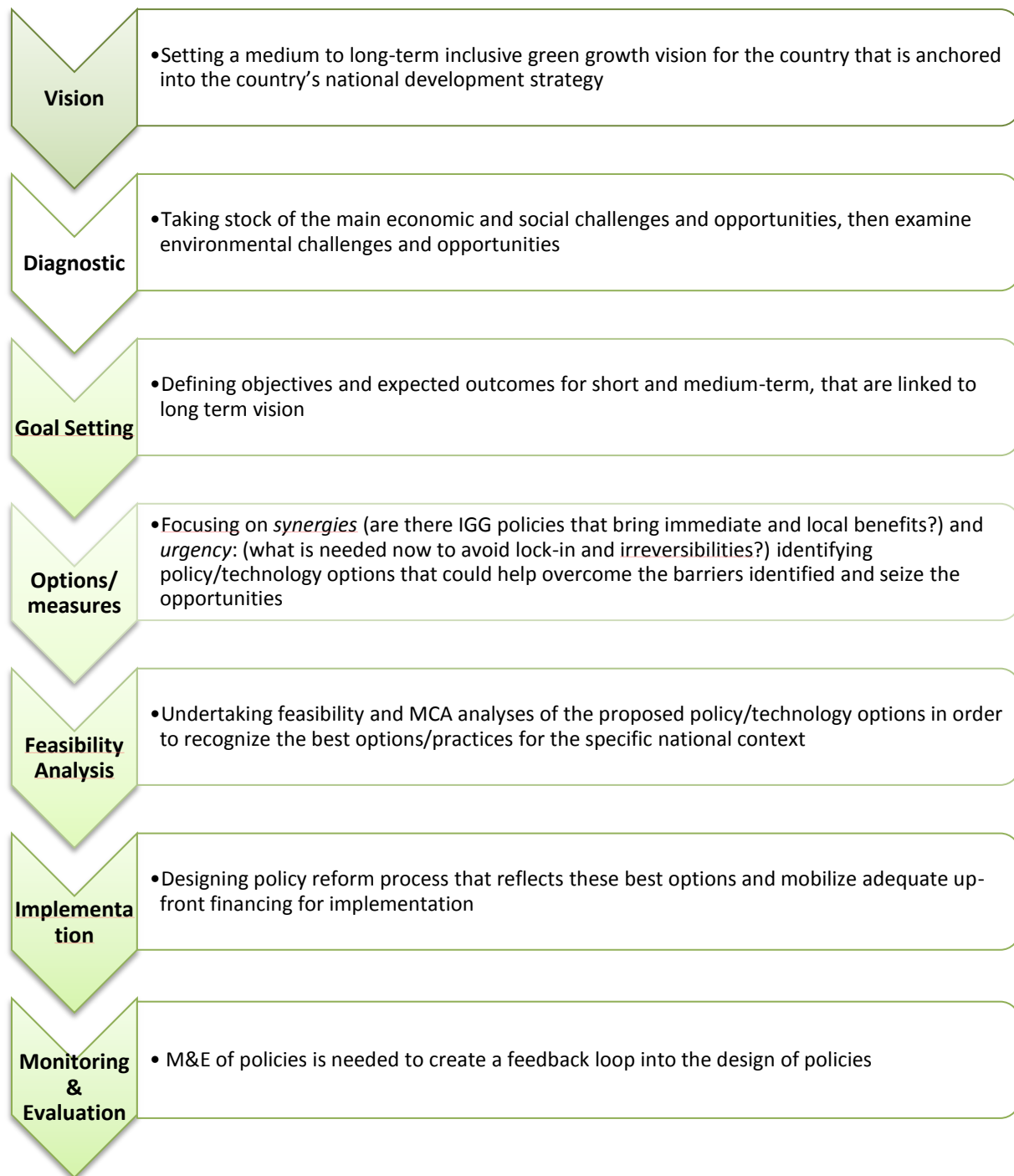
As emphasized in the joint draft report from OECD, UN and the WB to the G20 Energy and Commodity Markets Group in the Finance track on “Incorporating green growth and sustainable development policies into structural reform agendas”, tools used to advance inclusive green growth need to be deployed within a coherent overarching strategy. An overall vision and strategy for inclusive green growth is indispensable for framing policy reforms as national strategies with positive long-term goals.

The approach should be to integrate green growth into policy processes and national development plans,, rather than create stand-alone policy documents or agencies. Doing so increases the acceptability of immediate costs by the population, including the private sector. It also improves consistency among policies and fosters policy certainty—which creates a friendlier climate for investments, making it more likely that private resources will be invested in long-term projects. But building a national strategy creates some challenges of its own, including the need for coherent cross-government collaboration, multi-stakeholder engagement, interagency coordination, private sector engagement, and the definition of relevant long-term goals and indicators.

Ahead of any major policy process, and more so with regard to policies for an all-encompassing inclusive green growth (IGG) approach, there has to be a methodology for arriving at specific instruments, starting with a shared vision, stocktaking of issues, lessons and opportunities, setting of concrete and

realistic country goals, identification and analysis of technical options, all leading to a reforms agenda and/or investment plan with clear actions, timelines and resource implications. Various strategies have been developed by different development actors, but all have common elements and can therefore be combined into a common framework. Figure 1 summarizes this framework, identifying the main building blocks within which different tools can be deployed. The section that follows develops this framework further, providing illustrations of how different tools can be deployed for the different steps.

Figure 1: Summary of steps to develop an inclusive green growth strategy anchored into national development framework



The type of actions each of these steps may entail is discussed below.

Step 1

• VISION & OBJECTIVES

As mentioned above, any IGG strategy must be anchored into a national development vision that is broadly owned within government and by its constituency, including marginalized group and those who may be particularly vulnerable during the transition towards a green economy. In order to achieve this, the process of elaborating the strategy itself needs strong and political commitment and buy-in at all levels, a network of champions across the government complex to drive the change process at the technical level, thorough consultations with different stakeholders and wide sharing of information to ensure a transparent decision process.

SCOPE / SOME CORE ELEMENTS	STEPS/ TOOLS
<p>Political commitment: strong high-level political commitment and leadership is needed at the various stages of the policy cycle to ensure the process is not captured by vested interests or taken over by other items in the political/policy agenda. Involvement of President / Prime-minster with full technical back-up of leading Ministries/agencies is crucial.</p> <p>Institutional set-up and champions: a change in process involving cross-sectoral collaboration requires a critical mass people with the ability to understand the vision, communicate with various stakeholders and technical expertise to design, appraise, apply and adjust the policy solutions. More than just setting-up teams/committees across various technical areas, it is important that these people also act as a “network of champions” for IGG.</p> <p>Broad consultations: Some steps, like the definition of the Vision and the Objectives/Expected outcomes, require some broad consultations with national stakeholders (including civil society, private sector, development partners, municipalities, advocacy networks etc.).</p> <p>Information dissemination and transparency: All information generated in policy-making process should be widely available and the process must be done transparently, allowing all stakeholders a voice and ensuring that disagreements are noted in public fora.</p>	<p>Ministerial Steering Committee best chaired by Ministry of finance, economy or planning or Vice-president’s office</p> <p>Technical Committees and sub-technical committees</p> <p>Consultation instruments (townhall meetings, focused group discussions, opinion surveys government web Portal, National & local press, radio)</p>

Step 2

• DIAGNOSTICS

Step two entails a systematic compilation of relevant information to better understand challenges/opportunities in framing IGG objectives. In particular, it is this stage to identifies economic, social and environmental / natural capital challenges and opportunities for the country, climate risk management issues, take stock of existing policy instruments as well as the likely constraints to implementing inclusive green growth.

SCOPE / SOME CORE ELEMENTS	STEPS/TOOLS
<p>Collect relevant information to understand challenges/opportunities and frame objectives</p> <p>Identify key economic and social challenges and opportunities, using existing diagnostics and reviewing:</p> <ul style="list-style-type: none"> • Economic Sectors in value-added, job creation, environmental impacts • Poverty, inequality, exclusion, and vulnerability indicators • Demographic & labour market statistics • Urbanization Trends • Urban/rural access to basic services (education, health, water, energy) • Energy access by population groups, urban/rural areas, technology <p>Identify key opportunities and challenges in natural capital of country/region:</p> <ul style="list-style-type: none"> • Ecosystem types, historical, current and project distributions, maps • Spatial maps highlighting biological richness • Maps with high above or below ground carbon stocks • Agriculture and bio-energy land-use mapping (FAO methodology) • National renewable resource assessments (wind, solar, hydro, geothermal) • Spatial overlays of areas with multiple high value ecosystem services <p>And in climate change and climate risk management:</p> <ul style="list-style-type: none"> • Disaster statistics (loss of live, total and relative economic losses) • Hazard maps (spatial exposure to hydro-meteorological and geological hazards) • Regional trends in key climatic parameters • Vulnerability and Adaptation Assessments 	<p>Country-specific statistical bureaus or their equivalents</p> <p>Country-specific public surveys and in-country think-tanks, universities, research centers</p> <p>National and MDB Data Portal (provides multiple customized tools to gather and analyze multiple indicators)</p> <p>System of Environmental-Economic Accounts (UNSEEA); wealth accounting and valuation of ecosystem services (WAVES)</p> <p>Human Development Index</p> <p>FAO FAOSTAT; FAO CLIMPAG (brings together the various aspects and interactions between weather, climate and agriculture in the general context of food security); FAO Global Information and Early Warning System on Food and Agriculture (GIEWS)</p> <p>Community mapping tools, participatory rural appraisals, and other tools to bring out local knowledge about ecosystems, property right regimes, and patterns of natural resource use</p>

SCOPE / SOME CORE ELEMENTS	STEPS/TOOLS
<p>Take stock of existing policy instruments relevant to IGG:</p> <ul style="list-style-type: none"> Rules and regulations already in place with regard to natural resources, energy, pollution, employment Enacted economic and financial instruments with a bearing on IGG In terms of economic instruments, understanding which revenues are being collected and by whom, how they are being used, and a measure of their success on achieving the policy objectives In terms of financial instruments, understanding subsidy schemes, their effectiveness, and management/governance in practice In terms of social protection, existing social protection floors and safety net systems The national budgeting process and entry points for IGG <p>Take stock of likely constraints to implementing inclusive green growth :</p> <ul style="list-style-type: none"> Political economy, fragility, or behavioural change issues Financial constraints Institutional or capacity constraints <p>Throughout examine opportunities for synergies (are there IGG policies that bring immediate and local benefits?) and extent of urgency (what are the policies and investments that need to be taken now to avoid locking into an unsustainable future and creating irreversibilities?)</p>	<p>Strategic Assessment; social expenditure reviews, (green) public expenditure reviews</p> <p>Environmental expenditure reviews</p> <p>WFP Comprehensive Food Security and Vulnerability Analysis (CFSVA) Guidelines; Food Security and Vulnerability Analysis; Hunger and Climate Vulnerability Index ;</p> <p>International Rescue Committee (IRC) Disaster Risk Databases</p> <p>UNDP Climate Change Country Profiles</p> <p>IPCC Assessment, Special and Methodology Reports</p> <p>World Bank Climate Portal</p> <p>AfDB Country Policy and institutional Assessment; AfDB Country Governance Profiles</p> <p>OECD Green Growth Diagnostic framework</p> <p>UNEP Green Economy Scoping Studies</p>

Step 3

• GOAL SETTING

At this stage, countries will set specific goals and expected outcomes for the short and medium-term that are linked to their long term vision. In particular, criteria are defined for prioritizing the various options and measures across identified in accordance with countries' specific development context. Assessments of institutional, financial and capacity constraints should also be carried out to ensure that policies are matched to institutional capabilities.

In addition, as countries set their goals they may look into voluntary guidelines and standards anchored into best practices approaches. These may include guidelines that are not specifically designed to promote green growth policies, but that have address core issues of sustainability and inclusiveness in policies and investments affecting

sectors that would be most likely to be at the center of these policies in many low income countries. In relation to agriculture, for instance, useful elements may be drawn from the UN Committee for World Food Security's Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests or the FAO Code of Conduct for Responsible Fisheries, among other.

SCOPE / SOME CORE ELEMENTS	STEPS/TOOLS
<p>Identification of relevant sectors – from the diagnostic, prioritize sectors/sub-sectors where most potential exists for delivering IGG and identify policy options for further assessment.</p> <p>Assessment of policy/technological options – this includes an extensive review of tested policy/technologies around the globe for each priority sector, in particular those which have been successfully introduced in countries with similar socio-economic profiles.</p> <p>Assessment of Institutional Capacity Needs - Assessments of institutional, financial and capacity constraints for implementing policies and measures that facilitate transition to Inclusive Green Growth. It is important to ensure that policies are matched to institutional capabilities to ensure that results are achieved.</p>	<p>Sector consultations and alignment with country's long-term development plan</p> <p>FAO Climate Smart Agriculture; CFS Voluntary guidelines on the responsible governance of tenure of land fisheries and forests</p> <p>Principles for Responsible Agricultural Investment that Respects Rights, Livelihoods and Resources (PRAI) of FAO, IFAD, UNCTAD and World Bank</p> <p>Climate Technology Wiki; UNEP and UNDP's Technology Needs Assessment (TNAs); UNEP Green Economy Scoping Studies</p> <p>OECD Policy Guidance on Integrating Climate Change Adaptation into Development Cooperation</p> <p>Nationally Appropriate Mitigation Actions (NAMAs)</p> <p>Sector Master Plan Studies</p>

Step 4

- **PRIORITY SETTING AND FEASIBILITY ANALYSIS**

Multi-criteria analysis are likely to be needed given the limitation of cost-benefit analysis in the absence of market prices (for environmental goods) and in the presence of substantial uncertainty (about climate risks, technology). Political economy analysis as well as distributional assessment, are important.

But as countries seek to prioritize across the many urgent and important steps that they can take to take to green their growth and promote greater inclusion, two particular dimensions can be highlighted:

- *Synergies*: the extent to which green policies provide immediate and local benefits and help achieve more rapid or more inclusive growth. Green policies that have immediate and local benefits will also benefit from greater political and social acceptability – a critical dimension if strategies are to actually be implemented.
- *Urgency*: the extent to which a policy can be postponed without running the risk of irreversible damages or locking into unsustainable patterns of growth.

SCOPE / SOME CORE ELEMENTS	STEPS/TOOLS
<p>Multi-criteria analysis is likely to be needed. Political economy analysis as well as distributional assessment are important, as are the following:</p> <ul style="list-style-type: none"> • Baseline studies for target sectors • Assessment of first order (direct impacts) and 2nd order (co-benefits / side-effects) of shortlisted policy instruments on fiscal system • Cost of implementation including mitigation of adverse impacts, monitoring and enforcement • Assessment of institutional barriers hindering policy implementation • Understanding of impacts across different interested groups and powerful factions <p>Final policy choice should be informed by the combination of urgency, synergy, efficacy, and greatest feasibility given existing power and institutional dynamics. Trade-offs should be resolved with reference to priority criteria and validated with stakeholders before implementation.</p>	<p>Marginal Abatement Cost Curves</p> <p>Multi-criteria analysis for comparison of policy options</p> <p>Decision-making under uncertainty</p> <p>Strategic Environmental Assessments</p> <p>Stakeholder Analysis & other Political Economy tools (factional analysis, power analysis)</p>

Step 5

• IMPLEMENTATION

Implementation of policy package should be anchored in a clear timeline (sequencing matters) and underpinned by realistic resource estimates (financial, human and technical). Policies should therefore be integrated into sector plans and national budget processes. Implementation should prioritize “quick wins” or those policies that yield an immediate positive return (e.g. direct revenues, cost savings, jobs) and/or have lowest implementation costs.

SCOPE / SOME CORE ELEMENTS	STEPS/TOOLS
Key elements include a clear timeline (sequencing matters) and realistic resource estimates (financial, human and technical).	National Budget processes Investment Plan & Resource Mobilisation Strategy Poverty and Social Impact Assessments (PSIA); Environmental Impact Assessments (EIA) Payment for Ecosystem Services Environmental Fiscal Reform Sustainable Public Procurement Social Safety instruments World Bank/UNDP Climate Options Platform; UNDP Guidebook on Blending Climate Finance Through National Climate Funds; WFP Innovative risk finance, transfer and insurance (e.g WFP Livelihoods Early Assessment and Protection)

Step 6

• M & E

Monitoring and evaluation of policies and interventions are needed to create a feedback loop into the design of policies. Tools include both standard monitoring and evaluation, as well as impact evaluation given the need for formal learning about green growth what interventions work best. Moreover, the inclusive nature of the IGG agenda is best served by inclusive M&E processes, including participatory approaches that best capture both the social and the environmental impact of policy implementation.

3. Tools for Inclusive Green Growth

A practical and flexible policy toolkit has an important role to play in helping developing countries to identify and address bottlenecks and constraints to realizing inclusive green growth. Such a toolkit requires details of generic and specific policies – environmental, economic and social. It envisages significant long-term investment and innovation, both technological and institutional, to avoid locking-in

inefficient and costly technology and infrastructure. For such investments and policies to work, appropriate policy frameworks and governance arrangements must be in place and to facilitate this, capacity building and knowledge sharing is required.

The IOs drafting this report have identified or developed a number of tools to foster inclusive green growth, which are detailed in the individual annexes to this report. Table 2 below provides a typology of such tools and the function they serve. A brief description of each tool follows, which is further developed in the Annex.

The set of tools listed here by no means provide a definitive list. To be useful, the toolkit should be viewed as a living document that requires regular updating. In particular, tools related to energy planning, water management and climate change resilience are included or updated in this last version of the toolkit.

Table 1: Typology of tools and main functions

	INCENTIVIZE			DESIGN	FINANCE	MONITOR
	Tools for pricing pollution and natural resource use	Tools to complement pricing policies	Tools to foster inclusiveness	Tools to manage uncertainty	Financing and investment tools	Monitoring tools
Environmental Fiscal Reform and Charges	✓		✓			
Public Environmental Expenditure Review	✓	✓		✓		
Sustainable Public Procurement		✓	✓		✓	
Strategic Environmental Assessment		✓	✓			
Social Protection Instruments		✓	✓		✓	
Payment for Environmental Services	✓		✓		✓	
Certification for Sustainable Production			✓		✓	✓
Tools to frame environmental policies: communication and nudging		✓	✓			
Green Innovation and industrial policies		✓			✓	
Decision Making under uncertainty				✓		
Project level Impact assessment			✓	✓		
Analysis of Labor Markets and Income Effects		✓	✓			
Sustainable land management– Framework & Guidelines on Land Policy	✓	✓	✓			
Achieving water security for inclusive green growth	✓	✓	✓			
Green accounting						✓

	INCENTIVIZE			DESIGN	FINANCE	MONITOR
	Tools for pricing pollution and natural resource use	Tools to complement pricing policies	Tools to foster inclusiveness	Tools to manage uncertainty	Financing and investment tools	Monitoring tools
Making Growth Resilient to Climate Change through smart planning			✓	✓		✓
Effective and Efficient Policies to Support Sustainable Energy in Developing Countries	✓	✓	✓	✓	✓	

Environmental Fiscal Reform and Charges

EFR refers to a range of taxation and pricing measures which can potentially raise fiscal revenues, increase efficiency and improve social equity while furthering environmental goals. EFR instruments fall into the following broad groups: (1) natural resource pricing measures such as taxes for forests and fisheries exploitation; (2) reforms of product subsidies and taxes; (3) cost recovery measures, such as user charges for energy and water, which are broadly applicable but must be carefully implemented and complementation by flanking measures to protect the poor; (4) pollution charges, which are particularly relevant for countries where industrial pollution is a serious problem, and at the same time the administrative capacity to implement such charges is relatively high.

Public Environmental Expenditure Review

PEERs examine government resource allocations within and among sectors, and/or at national and sub-national levels of government, and assess the efficiency and effectiveness of those allocations in the context of environmental priorities. PEERs frequently result in highlighting the mismatch between environmental policy and plans and low levels of spending in those areas of government that are linked to environmental sustainability and natural capital. In many cases, they have helped to redistribute spending towards institutions responsible for environmental priorities, towards longer-term goals, and have helped to considerably increase environmental budgets. PEERs are also useful for identifying, quantifying and maximizing the public revenue potential of underpriced natural resources, such as forestry, fisheries and minerals.

Sustainable Public Procurement

SPP is most commonly defined as “a process whereby organizations meet their needs for goods, services, works and utilities in a way that achieves value for money on a whole life basis in terms of generating benefits not only to the organization but also to society and the economy, whilst minimizing damage to the environment.” (Definition of the UK Task Force on SPP adopted by the Marrakech task Force on SPP).

Strategic Environmental Assessment

SEAs refer to a range of analytical and participatory approaches that aim to integrate environmental considerations into policies and evaluate the inter linkages with economic, social, and climate change considerations. They are a variety of tools, rather than a single, fixed and prescriptive approach. Applied at the earliest stages of decision making both to help formulate policies and to assess their potential development effectiveness and sustainability, they focus on identifying trade-offs between environment, social and economic objectives. This is valuable in assessing whether apparently “green” policies or major programs, such as subsidy reform, are likely to have unintended consequences. SEAs’ focus on the policy and institutional level is useful in governance for green growth.

Social protection instruments

Social protection instruments ensure the provision of essential services and transfers for individuals in need of protection in an effort to prevent them from falling into abject poverty or to assist them out of poverty. *Social Protection Floors*, defined according to specific country context, aim to progressively realize universal and comprehensive coverage, with a shared longer-term vision, in many cases building on existing, more fragmented, social protection schemes such as *safety nets* that are temporary, residual and limited to certain recipients and/or geographical areas and often reflect immediate priorities (such as the need to respond to food and financial crises).

Payment for Environmental Services

PES are defined as “a voluntary, conditional agreement between at least one ‘seller’ and one ‘buyer’ over a well-defined environmental service – or a land use presumed to produce that service”. By providing compensation to the stewards of an environmental service, it can strengthen the ecosystem service provisions at different scales, international, national, regional and local.

Certification for Sustainable Production

Certification identifies goods and services that have potential to reduce adverse environmental and social impacts. Differentiating between green products can increase the market value and share for farmers and producers. It also contributes to economic growth while improving environmental practices, and helps ensure long-term resource sustainability. Acting as information systems for consumers, certification schemes include: (1) multi-stakeholder agreement on what constitutes best/acceptable practice in a set of standards; (2) auditing process to assess compliance; (3) sustainable source tracking process; (4) product label.

Tools to frame environmental policies: Communication and Nudging

Communication and nudging represent a broad range of evidence-based strategies aimed at stimulating and sustaining environmentally sustainable behaviors among individuals including the following: (i) Social marketing approaches which draw on commercial marketing techniques and have been applied at

large scale in a variety of fields such as seat belt use, HIV/AIDS prevention and family planning since the 1960s; (ii) Community-based approaches (a subset of social marketing) focused on changing social norms; (iii) Nudging which represents low-cost simple interventions aimed at tweaking “choice architectures” to encourage people to making the best decisions (for health, environment or other considerations).

Green Innovation and industrial policies

Green *innovation* policies are policies seeking to trigger green innovation by encouraging innovation across the board (horizontal policies) or supporting a specific technology (vertical policies). Green *industrial* policies are policies aiming to green the productive structure of the economy by targeting specific industries or firms. They include industry-specific research and development subsidies, capital subsidies, and tax-breaks; feed-in tariffs; and import protection. They do not include policies targeting demand (such as consumer mandates), which can be met by imports without changing local production.

Decision-making under uncertainty

There are 4 main methodologies to tackle uncertainty in green growth strategies: Cost-Benefit Analysis (CBA) under uncertainty, CBA with a Real Options approach, Robust Decision Making, and Climate Informed Decision Analysis. All have different strengths and the development of a decision tool to choose amongst them is not a simple matter.

Project Level Impact Assessment

Upstream planning and policy-making for inclusive green growth must also translate into downstream decision making and implementation processes to ensure that project-level investments are designed in a manner that enhance environmental and social benefits and manage potential risks. For example, environmental impact assessment (EIA) has been a proven tool over the past 40 years and has a good track record in evaluating the environmental risks and opportunities of project proposals and improving the quality of outcomes. Because EIA is now a well-established practice and is increasingly included in national legislation it can provide a key entry point for addressing social impacts as well through an integrated approach. While it is indeed best practice to include social issues in any environmental assessment, the degree to which this is done is variable. There are also several spin-off approaches to project-level impact assessment, such as Social Impact Assessment (SIA), which may also provide entry points and tools for integrating inclusive green growth approaches into project-level design and decision making.

Analysis of Labor Market and Income Effects

This analysis tool by the ILO can identify the changes, opportunities and challenges in the labor market with a high degree of resolution, in particular for young women and men. The tool allows for the identification of the potential job creation and job loss on a sector-by-sector basis as well as shifts in income by type of household. Beyond the assessment of impacts, the tool provides labor market information, highlighting opportunities to create decent work for youth for example and provides pointers for policy formulation such as needs for formalization of employment in certain sectors or for support to green micro- and small enterprises, notably for young entrepreneurs or infrastructure investment. Similarly, the data generated with the tool, provide the basis for assessments of the expected transformation in skills requirements and the implications for education, vocational guidance and training policies

Sustainable land management – Framework & Guidelines on Land Policy in Africa

In 2006, the African Union Commission, the Economic Commission for Africa and the AfDB initiated a process for the development of a framework and guidelines (F&G) for land policy and land reform in Africa with a view to strengthening land rights, enhancing productivity and securing livelihoods for the majority of the continent's population. That initiative was carried out by way of extensive consultations involving the participation of Regional Economic Commissions in all the five regions of the continent, civil society organizations, centers of excellence in Africa and elsewhere, practitioners and researchers in land policy development and implementation, government agencies and Africa's development partners. The final outcome of the initiative was then presented before the formal decision-making processes of the AU for approval and adoption by the Assembly of Heads of State and Government in July 2009.

Achieving water security for inclusive green growth

Water security is a key element of any green growth strategy. Integrated water resources management is a process for managing the competing uses of water by different interest groups and water-related risks (scarcity, excess, lack of quality, or breach in the resilience of freshwater systems). It is a means to achieve sustainable and inclusive growth and development. Water is thus treated as an economic, social and environmental good helping ensure that policies, laws and infrastructure options for water resources development, management and use are developed in a coherent and sustainable way.

Green accounting

Green accounting extends national accounts to include the value of the damage and depletion of the natural assets that underpin production and human well-being. In particular, net saving, adjusted for the depreciation of produced assets and the depletion and degradation of the environment, indicates whether well-being can be sustained into the future. Negative net saving indicates that it cannot,

because the assets that support well-being are being depleted. With green accounting, the scorekeeping indicators (such as wealth accounts) can be used alongside GDP to better assess how well a country is doing for the long term. It also provides detailed accounts for management of natural capital, which many countries have adopted over the past 20 years—especially for water, energy, and pollution. However, few countries have adopted the revised macroeconomic indicators.

Making Growth Resilient to Climate Change through smart planning

Strengthening resilience to the impacts of climate change is closely intertwined with development. In this context, mainstreaming the assessment of climate risks and potential opportunities into existing and future investments and development programs is critical to ensure the sustainability of infrastructure, growth, resilience of communities, and long-term development under increasing risks from a changing climate. Opening up and improving datasets and providing access to good quality climate information, socioeconomic data and technology options, in addition to well-established transparent “how to” and planning tools, methods, and experience is a necessary first step to scale-up and accelerate climate smart-planning and resilience. The use of analytical tools and methodologies that facilitate the assessment of climate change risks and the integration of adaptation and resilience planning at the sector, project, and program level adds to the evidence base for integrated decision-making across sectors.

Effective and Efficient Policies to Support Sustainable Energy in Developing Countries

Over the last two decades many developed and developing countries have introduced a combination of economic, market-based, fiscal, and financial incentives to promote both renewable energy (RE) and energy efficiency (EE) based on multiple policy objectives (for example, enhance energy security, reduce GHG emissions, improve local environmental sustainability, increase energy access, and save energy or reduce energy intensity). In the process of designing and implementing a package of incentives to promote sustainable energy, policy makers and regulators have gradually learned that the choice of policy mechanism, the features of policy design, the setting of tariff levels, the compatibility among different instruments, and the sequencing of measures are all crucial aspects of an effective and economically efficient regime.

4. Knowledge Sharing and capacity development

No country has yet developed by following a strict “inclusive green growth path.” However, many different initiatives exist that provide insights into particular aspects of inclusive green growth policies. Given this, and the fact that this knowledge is spread across different countries and actors, it is critical to

develop knowledge sharing instruments. A useful role can be played, in this context, by knowledge platforms such as the Green Growth Knowledge Platform (Box 3).

Box 3. Green Growth Knowledge Platform (www.ggkp.org)

The GGKP was established as a joint initiative of the GGGI, OECD, UNEP, and World Bank. The GGKP is aimed at expanding efforts to address major knowledge gaps in green growth theory and practice, and at helping countries to identify, design and implement policies to move towards inclusive green growth.

To this end, the GGKP aims to develop a global network of researchers, practitioners and development experts and policy makers to promote widespread sharing of information on policies adopted by different countries and facilitate funding of world-class research with a view to improving the policy, tools necessary to foster economic growth and implement sustainable development.

The GGKP was officially launched at an inaugural conference (held in Mexico City in January 2012 where leading scholars and experienced practitioners from across the globe met to take stock of the current understanding of the economics of green growth, identify knowledge gaps and establish priorities for knowledge-building work and implementation. The following three Research Programs are being developed in the light of the key knowledge gaps identified from these initial consultations:

- Research program on technology and innovation
- Research program on trade and competitiveness
- Research program on welfare measurement and performance indicators

These work streams will leverage the vast array of green growth work being done by the Platform's partners, including GGKP's first Affiliated Program, the European Climate Foundation's initiative on "Green Growth Best Practices initiative." These research programs, and the associated knowledge-sharing activities to be facilitated by the GGKP, will operate with an understanding that the green growth and green economy policy mix will vary according to country-specific circumstances, thereby necessitating a menu of policy options and toolkits. These new programs will complement ongoing initiatives.

Over the coming months, the GGKP will be rolling out its interactive online platform to facilitate the development of a dynamic community of experts and practitioners who exchange their experiences, insights, and questions. By helping forge cross-national and cross-disciplinary linkages, GGKP enables more practicable green growth research and provides a virtual tool for capacity building..

GGKP.org will continue to develop in FY13 with expanded capabilities for peer-to-peer interactions among members of the GGKP's communities of practice. These capabilities will likely include fully implemented versions of the tools piloted in FY12 (stakeholder database, submission of materials to e-library, "submit for review") as well as open discussion spaces for users to debate major questions about green growth.

Figure 2: Green Growth Knowledge Platform activities



But knowledge sharing may not be sufficient. Limited capacity in many developing countries—adapt and deploy green technologies, to undertake environmental risk assessment, and to coordinate across sectors and institute environmental fiscal reform—is a key obstacle in the pursuit of inclusive green growth. Institutional capacity constraints may have to do with how different ministries and policy-making and administrative bodies operate individually and together, and whether this is or is not conducive to the necessary inter-agency and inter-sectoral consultations, joint agenda setting, joint policy implementation and monitoring efforts, and so forth.

The cross-cutting nature of inclusive green growth demands approaches that shape policy development and investment decisions and make all stakeholders aware of the important contribution that the sustainable use of natural resources makes to achieving growth and development objectives. This includes stakeholders within different ministries and units at central government level (e.g. in ministries of agriculture, finance, energy, urban planning, education, and so forth), as well as at local government level, in academic and research institutions, within civil society, and in the private sector.

Developing capacity has to do in part with developing skills and knowledge among individuals and organizations at various levels, inside and outside government, insofar as these are needed either to design or to implement inclusive green growth policies and programs. A critical part of capacity development also has to do with putting in place an enabling environment that supports the development of these skills and capacity (e.g. by reforming educational and research programs and curricula as needed), as well as the kind of inter-sectoral and inter-agency communication and collaboration work that is necessary for green growth policymaking to occur. In all these areas, countries with experience in designing and implementing inclusive green growth strategies should work in a more collaborative manner at the global and regional level to establish a knowledge and lesson sharing

process. This is separate from, but potentially complementary to, efforts to develop skills for operating in a greener economy.

External actors can in some cases play an important supportive role in capacity building for inclusive green growth policymaking at the country level. In this regard, a five-step framework has been proposed for external actors to help guide capacity development efforts for inclusive green growth at the levels of national development planning, budgetary processes and in key economic sectors (OECD 2012)⁴:

- Assess the political and institutional context, by conducting an analysis of the national context, understanding incentive structures and gaining familiarity with country level analysis of natural resource constraints and opportunities.
- Identify key actors and their capacity development needs, such as government officials, private sector representatives and members of civil society groups, recognizing the political and economic dimensions that influence stakeholders.
- Identify opportunities to shape organizational incentives, including finding entry points, setting priorities and outlining the appropriate timescale, targets and resources needed.
- Identify awareness / knowledge needs and existing analytical tools, raise awareness of the role the environment plays in achieving economic development, becoming familiar with existing knowledge products and adopting and using technical tools to make the economic case for environmental programs and measures.
- Identify options for policy response, ranging from revised priorities and implementation strategies to specific environmental management measures and investments.

These steps are not necessarily sequential, and depending on the context, may not all be needed. It is important to build such initiatives around a realistic timescale linked to the policy-making or planning cycle. Regular reviews are necessary to monitor progress. Monitoring and evaluation also serve as an important basis for learning from experience, improving capacity development outcomes, planning and allocating resources to meet priorities and demonstrating results. Knowledge sharing at the regional and global levels would be critical in institutions building and facilitating the implementation of IGG. More generally, lessons learnt about capacity development should be applied.⁵)

In conclusion, green growth policies will vary across countries depending on local realities, resources and challenges. But in all cases, care must be taken that these policies further goals of inclusiveness and

⁴ OECD. 2012. *Greening Development: Enhancing Capacity for Environmental Management and Governance*. A number of institutions are engaged in capacity development on green growth. See for example <http://www.unescap.org/esd/environment/greengrowth/>

⁵ See for example www.worldbank.org/capacity, www.undp.org/capacity/ and <http://www.oecd.org/dataoecd/4/36/36326495.pdf>

poverty reduction so they can contribute to achieving sustainable development. This toolkit is by no means a prescriptive one. Rather it lays out broad steps that are needed to develop policies and strategies tailored to local circumstances and highlights some of the main policy tools that can be helpful in the process. Finally, success will require that policies be based on sound knowledge and be matched to local capacities. Knowledge and capacity building initiatives are therefore needed to produce results on the ground, providing a basis for greening economies through policies that drive green and inclusive growth.

Annex

Environmental Fiscal Reform (EFR) and Charges

Brief Description: EFR refers to a range of taxation and pricing measures which can potentially raise fiscal revenues, increase efficiency and improve social equity while furthering environmental goals. EFR instruments fall into the following broad groups: (1) natural resource pricing measures such as taxes for forests and fisheries exploitation; (2) reforms of product subsidies and taxes; (3) cost recovery measures, such as user charges for energy and water, which are broadly applicable but must be carefully implemented and complementation by flanking measures to protect the poor; (4) pollution charges, which are particularly relevant for countries where industrial pollution is a serious problem, and at the same time the administrative capacity to implement such charges is relatively high.

Examples of Application: Some forest-rich countries – such as Cambodia and Cameroon – have undertaken reforms to increase the fiscal revenues from the forestry sector. Cameroon introduced a forest taxation regime to promote sustainable forest management, increasing local processing, sharing forest rents more equitably and improving governance and transparency in the sector. As well as changing the fiscal structure, for example shifting the tax basis from the product to the area of the concession, the new regime introduced auctioning of harvesting rights, regulations limiting the area that could be harvested to 1/30 of the concession area, and a ban on log exports. In many countries, subsidies on energy consumption represent a significant drain on public finances. However analysis by the IEA shows that only 8% of the USD 409 billion in fossil fuel subsidies in 2010 went to the poorest 20% of the population. A review of country studies on fossil fuel subsidies in 20 countries in Africa, Asia, Middle East and Latin America conducted by the IMF between 2005 and 2009 found that on average the top income quintile received six times more in subsidy than the bottom income quintile. User charges or fees meanwhile are another instrument for EFR. In the absence of such charges the costs of service provision must be covered by government budgets, which are already under stress. Frequent budget shortfalls lead to poor service and the frequent exclusion of the poor as recipients of such services such as potable water and modern energy.

Assessment: If properly designed, EFR could bring about following benefits:

- *Economic/ growth:* In areas such as natural resource extraction, EFR has the potential to generate significant additional revenues and promote growth in the longer term as it can (1) encourage greater efficiency in production or in provision of services derived from the inputs which were formerly subsidised and force a more rapid rate of technological change; or (2) it can free up funds for governments to spend on actions that can promote growth, such as infrastructure and human capital development. However, it is likely that there will be short term economic costs incurred, such as increasing production costs because of higher energy and water prices.
- *Environmental:* EFR can lead to better management of natural resources and environmental incentives for conservation, by shifting relative factor prices to increase resource efficiency and by taxing “bads” such as pollution as opposed to goods and services, like labor.

- *Social:* Transparent and effective fiscal policies, that also safeguard the environment and natural systems, are critical foundations for human health and livelihoods. There are strong arguments that phasing out antiquated energy subsidies that could free up funds for more targeted assistance to poor households.

Good practice/Guidance: Some general principles of effective EFR include:

- Perform early research and establish strong institutional oversight and stakeholder consultation
- Customise process according to capacity (design, implementation, monitoring and evaluation)
- Set clear objectives, priorities and timetable including complementary policies such as targeted cash transfers to prevent reduced income of the poor and other undesired effects
- Develop a communication strategy and mechanisms to ensure transparency of the reform
- Set up controls and enforcement against corruption
- Customise according to sector e.g forestry or fisheries sectors
- Identify the level of industrial pollution and the best way to control it e.g. pollution charges
- Develop the administrative capacity to implement such charges

Sources of Information:

Global Subsidies Initiative, IISD, <http://www.iisd.org/gsi/> ;

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Arze del Granado, J., Coady, D. and R. Gillingham. 2010. The Unequal Benefits of Fuel Subsidies: A Review of Evidence for Developing Countries, IMF Working Paper WP/10/202, International Monetary Fund, Washington D.C.

Public Environmental Expenditure Reviews (PEERs)

Brief Description: PEERs examines government resource allocations within and among sectors, and/or at national and sub-national levels of government, and assesses the efficiency and effectiveness of those allocations in the context of environmental priorities. PEERs frequently result in highlighting the mismatch between environmental policy and plans and low levels of spending in those areas of government that are linked to environmental sustainability and natural capital. In many cases, they have helped to redistribute spending towards institutions responsible for environmental priorities, towards longer-term goals, and have helped to considerably increase environmental budgets. PEERs are also useful for identifying, quantifying and maximising the public revenue potential of underpriced natural resources, such as forestry, fisheries and minerals.

Examples of Application: PEERs have been undertaken in many contexts for different purposes and with a variety of outcomes. Among these, a review in Madagascar both highlighted a financing gap for the protected area system – it depended on aid for half of its funding – and demonstrated how the protected area system could become a net source of government revenue through ecotourism fees. Another PEER in Mozambique – showed that environmental expenditure was only 0.9% of GDP and highlighted not only the lack of prioritisation in environmental policy but also the very weak links between environmental policy and actual expenditures. A Tanzanian PEER demonstrated the considerable potential for environmental resources to contribute to revenue due to current underpricing, and very low revenue collection in forestry, fisheries and wildlife – only 5-10% of potential forest revenue was being collected. It also showed that very little of the revenue collected was reverting to the local level. As a result of the PEER the environment budget has now grown considerably and through the Strategic Budget Allocation System is linked to the national development and poverty reduction strategy.

Assessment: Particularly, EFR can be beneficial in producing the following implications:

- *Economic:* PEERs plays a critical role in enhancing efficient allocation of resources for environment and natural resource management. In general terms this can increase value retention within the domestic economy and finance investments in replacing, maintaining and building natural capital as a sustainable resource. PEERs through promoting efficiency and disaster proofing in infrastructure and sustainable intensification and climate change proofing in agriculture, can help ensure that public investment strengthens the resilience of the economy, promoting growth by reducing risk and limiting the impact of shocks – avoiding recurrent costs that can exceed 2-5% of GDP on an annual basis.
- *Environmental:* PEERs result in higher and more sustainable public investments in natural capital through identifying critical funding gaps and the potential to increase revenues. They also help demonstrate the economic value of the environment to the economy and link positive environmental outcomes to growth and poverty reduction and can result in increased resources, capacity and political support for sustainable environmental management.

- *Social:* Given that the livelihoods of poor people are largely dependent on natural resources, PEERs can be used to better manage natural resources to produce social benefits. Increased revenue from natural resource use can be used to provide basic services and to finance activities which can reduce poverty i.e. in areas that are of importance both to the livelihoods of poor people and to the environment, such as the development and promulgation of high yield, low input and climate resilient crop varieties. PEERs can result in greater transparency and accountability leading to more inclusive management of natural resources and related public expenditures and helping secure the access and use rights of poor households and the equitable distribution of revenues.

Good practice/Guidance: PEER will be most valuable when:

- Focus on a relatively small and prioritised set of key issues, and particularly in those sectors that enhance or create revenue generating capacity of a country's resource endowment
- Customise the PEER to the individual country context
- Involve and seek full participation from all relevant ministries
- Prioritise the PEER within the context of national development and poverty reduction goals
- Facilitate co-operation across different sectors

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Petkova, N. (2009), "Integrating Public Environmental Expenditure within Multi-year Budgetary Frameworks," OECD Environmental Working Paper No. 7, OECD, Paris.

Sustainable Public Procurement (SPP)

Brief Description: SPP is most commonly defined as “a process whereby organizations meet their needs for goods, services, works and utilities in a way that achieves value for money on a whole life basis in terms of generating benefits not only to the organization but also to society and the economy, whilst minimizing damage to the environment.” (Definition of the UK Task Force on SPP adopted by the Marrakech task Force on SPP).

Examples of Application: Most developed countries have embarked on SPP implementation. While the initial focus has been on environmental criteria, a growing number are using or considering the inclusion of social criteria. There are also many SPP initiatives at the local government level.

Activities connected with SPP can also be found in a number of Upper Middle Income countries. UNEP is currently assisting seven such countries (Chile, Costa Rica, Columbia, Uruguay, Tunisia, Mauritius, and Lebanon) in developing SPP policies and action plans, using a methodology developed by the Marrakech Task Force on SPP. The International Institute for Sustainable Development (IISD) has also supported several countries in designing and implementing SPP policies, among others Vietnam, India, South Africa, and Ghana.

In January 2012, the Philippines announced an SPP project to promote the use of environmentally-friendly products and services. Originally launched in 2004, implementation was delayed due to a lack of technical knowledge and skills and the lack of supply, particularly from SMEs who were unable to keep up with the demand for environmentally preferable products and services.

Other relevant examples may include quotas set for government-led procurement from smallholders in the biofuel value chain in Brazil, or in food procurement for public feeding programs, schools, hospitals, and other public institutions in the same country. The Government of Rwanda has initiated the “Common Purchase for Progress (P4P)” initiative which aims to purchase 40% of the national strategic food reserve’s requirement in a smallholder friendly way.

Assessment:

Public spending which represents between 15 % and 30 % of GDP in any country can contribute to driving markets towards innovation and sustainability, thereby enabling inclusive green growth. Through procurement of sustainable goods and services and through investments in sustainable infrastructure, governments can lead by example and deliver on key policy objectives. There may, however, be transitional budgetary implications, particularly if SPP is not designed and implemented as part of a broader inclusive green growth strategy that also seeks to internalize environmental and social costs in traditionally produced goods and services. In the medium to long run, budgetary implications could also be outweighed by increased tax revenue stemming from increased employment and growing SMEs.

- *Economic/Growth implications:* Cost saving opportunities stemming from increased resource efficiency, potential growth in SMEs delivering goods and services to the public sector. It can also drive markets towards innovative and sustainable solutions.

- *Environmental implications:* Reduction of greenhouse gas emissions and air pollutants; improved energy and water efficiency; reduced waste and support for reuse and recycling; use of renewable resources; reduced hazardous waste; and reduced toxic and hazardous substances.
- *Social implications:* Potential new decent jobs in sustainable agriculture and environmental services, sustainably produced industrial goods, mass transportation, energy efficiency in buildings, industry, energy provision from renewable sources, waste management, maintenance of water infrastructure. Potential job loss in traditional sectors. Improved gender and ethnic equity; poverty eradication, improved health.

Any Guidance/Good Practices:

The evidence of the impact of SPP, either as a mechanism for green growth or for driving sustainable consumption in developing countries, is still limited because the initiatives are still emerging and evolving. Research suggests that the challenges and obstacles confronted by developing countries are similar to those experienced in advanced economies.

The key criteria essential to enhance SPP effectiveness include:

- Establish a broader public procurement framework which puts an emphasis on “the best value for money” rather than the “best value across the product life-cycle”
- Understand clearly and analyse issues
- Develop and build capacity of adequate suppliers to meet environmental and social standards

Sources of Information:

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<http://www.ippa.org/IPPC4/Proceedings/07GreenProcurement/Paper7-7.pdf>

<http://www.unep.fr/scp/procurement/>

http://www.iisd.org/pdf/2007/state_procurement.pdf

<http://www.wfp.org/purchase-progress>

Strategic Environmental Assessments (SEAs)

Brief Description: SEAs refer to a range of analytical and participatory approaches that aim to integrate environmental considerations into policies and evaluate the inter linkages with economic, social, and climate change considerations. They are a variety of tools, rather than a single, fixed and prescriptive approach. Applied at the earliest stages of decision making both to help formulate policies and to assess their potential development effectiveness and sustainability, they focus on identifying trade-offs between environment, social and economic objectives. This is valuable in assessing whether apparently “green” policies or major programs, such as subsidy reform, are likely to have unintended consequences. SEAs’ focus on the policy and institutional level is useful in governance for green growth.

Examples of Application: In Vietnam, the use of SEA concerning the Quang Nam Province hydropower plan in 2006-15 proved effective in getting the local authorities to consider a cumulative assessment of a 80 social, economic and environmental issues related to sustainable development. Finally, four critical strategic concerns were drawn: integrity of ecosystems, water supply, impacts on ethnic minority groups, and economic development. Overall, the SEA concluded that the pace and scale of the proposed hydropower development was at an unsustainable level. Furthermore, the SEA made a number of strategic-level recommendations relating to the integrated management of the basin. The ex-post assessment of SEA on a completed plan still demonstrated its effectiveness in highlighting strategic concerns and identifying opportunities for enhancing sustainability (OECD, 2012).

In Mauritius, the sugar production industry makes an important contribution to the economy and international trade, but can be harmful to the environment. In order to ensure environmental integrity, SEA was conducted on the Multi-Annual Adaptation Strategy of the sugar cane sector. Although the SEA concluded that the strategy will make a positive contribution to the environment, some risks were also identified, such as the increased transport demand for harvested sugar cane and pollution of water courses. The SEA recommended measures to optimize environmental performance of sugar cane farming and suggested indicators for monitoring the proposed environmental management system. One of the success factors includes recognizing the economic benefit of SEAs to secure support from industries (OECD, 2012).

In Guinea, Liberia and Sierra Leone, where mining activities are central for growth, a regional assessment - the West Africa Minerals Sector Strategic Assessment (WAMSSA) – created significant impetus for regional harmonization of mining policy in the Mano River union. Through a multistakeholder policy dialogue the assessment promotes the adoption of a strategic, cluster focused, permanent multistakeholder framework for addressing mineral sector policy and development decisions; strengthening of environmental governance; regional management of the Upper Guinean Forest; increasing local-level benefits in mining areas; and improve social accountability and mineral sector governance (World Bank et al., 2011).

Assessment: The application of SEAs in developing countries could bring a range of benefits by improving decision making and safeguarding environmental assets and opportunities for the poor. SEAs can be beneficial in producing the following implications:

- *Social:* Safeguarding environment and natural systems are the critical foundations for human health and livelihoods. SEAs support good governance by encouraging stakeholder participation and increasing transparency and accountability in decision making;
- *Economic/ growth:* SEAs can prevent costly mistakes by identifying unsustainable development options at an early stage including unbudgeted time and resources in handling disputes with local communities or mitigation of avoidable harm through pollution.
- *Environmental:* SEAs can identify and avoid unexpected environmental impacts by evaluating the costs and benefits of alternatives and outlining the trade-offs. SEAs can also provide an important arena for regional co-operation for shared resources and trans-frontier considerations.

Good practice/Guidance: To be influential and help improve green growth policy making, planning and decision making, an SEA should follow the following key criteria (OECD, 2006):

- Establish clear goals that are integrated in existing policy and planning structures
- Be flexible, transparent and adaptable to context
- Analyse potential effects, risks and alternatives against a framework of sustainability criteria
- Provide explicit justification for preferred options and acceptance of significant trade-offs
- Include an effective, preferable independent, quality assurance system,
- Include formal reviews after completion and monitor projects, programmes and plans outputs
- Involve key stakeholders, encourage public involvement and build capacity for the SEA

Sources of Information:

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Social Protection Instruments

Brief Description: Social protection instruments are a way to make green growth more inclusive and socially acceptable including by easing the burden of the transition on the disadvantaged.

Social protection instruments ensure the provision of essential services and transfers for individuals in need of protection in an effort to prevent them from falling into abject poverty or to assist them out of poverty. *Social Protection Floors*, defined according to specific country context, aim to progressively realize universal and comprehensive coverage, with a shared longer-term vision, in many cases building on existing, more fragmented, social protection schemes such as *safety nets* that are temporary, residual and limited to certain recipients and/or geographical areas and often reflect immediate priorities (such as the need to respond to food and financial crises).

Countries at the same level of economic development spend very different shares of their national incomes on social protection (ILO and UNDP, 2011). Thus, in many cases some fiscal space can be created for social protection, even at low levels of GDP. In the context of IGG, measures such as environmental fiscal reform or subsidy reform can help create the necessary fiscal space. Monitoring of social protection expenditure is important to ensure the financial viability. A Public Social Expenditure Review can help generate an overall statement on current social protection expenditure in order to develop a social budget.

Examples: A number of developing countries have social protection floors in place or are developing such floors. Examples are Bolivia's universal old-age pension (*Renta Dignidad*); Brazil's conditional cash transfer (*Bolsa Familia*) Brazil's Rural Social Insurance Programme; Colombia's General System of Social Security in Health; India's Mahatma Gandhi National Rural Employment Guarantee Scheme; Rwanda's public work and direct services (the Vision 2020 *Umurenge* Programme); South Africa's Child Support Grant, and Thailand's Universal Coverage Scheme. In addition, countries such as Burkina Faso, Cambodia (National Social Protection Strategy for the Poor and Vulnerable), Mozambique (National Strategy for Basic Social Security), and Rwanda are in the process of building social protection floors based on the synergy between traditional mechanisms of social security, micro-insurance and social transfers (ILO and UNDP, 2011). Among safety net examples that are relevant for IGG is the MERET (Managing Environmental Resources to Enable Transition) project in Ethiopia which explicitly recognizes that land degradation is not only an ecological issue but also a social and economic one (Nedessa and Wickrema 2010).

Assessment: For social protection instruments to assist and protect, it is important that they are adequately designed and in place before action to transform the economy is taken. The design should ensure that benefits respond to the needs of those targeted and are adequate in scale to protect beneficiaries, without discouraging them from engaging in productive activities. Expensive or time consuming burdens upon beneficiaries should be avoided. The management should be transparent and accountable, and include well defined targeting mechanisms, provisions for monitoring and impact evaluation and "graduation" strategies. Programs should also be linked to wider national strategies and

policies. It is more efficient to expand existing programs which have been tested and are functioning during transition, than to implement new programs (ILO and UNDP, 2011b).

- Economic / growth implications: While social protection is increasingly seen as important not only to guarantee social rights but also to foster economic performance, the economic implications are both direct and indirect. These might stem, for instance, from increased aggregate demand, a healthier and potentially better educated population, increased productivity, improvements in physical infrastructure, and greater readiness among the general public to accept reforms. In specific sectors where transition to green growth may require shifts in the productive activities of individual households, as in the case of agriculture, the link is also in mitigating risks and costs that may be involved in these shifts. Overall, social protection schemes improve the human capital and productivity of beneficiaries, who with higher education and health are more likely to be able to successfully transition towards green growth. Regarding improvements in physical infrastructure, a cost benefit analysis of the MERET Project found that the economic and financial rates of return averaged more than 12 per cent for the main activities. MERET provides food assistance for up to three months each year to enable food insecure households in drought-stricken areas to participate in labour intensive soil and water conservation activities (Nedessa and Wickrema 2010).
- Environmental implications: Social assistance and safety nets can directly help in greening livelihoods by encouraging people to take risks and invest in greener technologies. Also, certain programmes such as employment guarantee schemes, can improve the environment and provide assets for more sustainable growth. The Indian Mahatma Gandhi Scheme is an example of the later. Permissible works under the scheme are productive green jobs such as water conservation and water harvesting, and drought proofing (including afforestation and tree plantation). According to a pilot study, this has already led to an increase in groundwater level and soil fertility (ILO and UNDP, 2011).
- Social implications: During a green economic transition, many jobs are lost in certain sectors, while others can change in nature (e.g. in the agriculture sector), and yet others are created. Social protection instruments can help prevent adverse outcomes for those that lose their livelihoods during the transition and empower those whose jobs have been destroyed to re-enter the labour market through skills development, training and labour market services. Also, a number of programmes have demonstrated that the impact of the social protection floor on poverty can be dramatic. The *Renta Dignidad* has reduced extreme poverty by 5.8 per cent (2007-2009). The Mahatma Ghandi Scheme has provided employment and income to 52.5 million households (2009-2010). The Brazilian *Bolsa Familia* reduced the poverty gap by 12 per cent (2001-2005) (ILO-UNDP 2011).

Any Guidance / Good Practices: 1) Although not developed in the context of IGG, the 18 cases from 15 countries shared in a joint UNDP-ILO report from 2011 can serve as good practices. The cases, analyzed mostly by officials of the concerned countries, go into detailed descriptions of approaches, challenges and achievements. 2) Under the UN Social Protection Floor Initiative a number of UN agencies, IFIs, bilateral development cooperation agencies and NGOs are working with developing countries to

carefully analyze and take stock of existing structures and strengths and weaknesses of schemes and programmes in place, improve coordination of different activities, explore synergies, increase efficiency and develop a social budget. The report of the Social Protection Floor Advisory Group (2011) lists a number of principles that any social protection system should take into account. 3) The International Poverty Center for Inclusive Growth has also developed a number of case studies on social protection for inclusive growth. 4) More country examples on the interaction between social protection interventions and climate adaptation are available in Kuriakose (2012).

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Payments for Ecosystem Services (PES)

Brief Description: PES are defined as “a voluntary, conditional agreement between at least one ‘seller’ and one ‘buyer’ over a well defined environmental service – or a land use presumed to produce that service” (Wunder, 2005). By providing compensation, either financed by the government or the end-users, to the stewards of an environmental service, PES can strengthen ecosystem service provisions at international, national, regional and local levels. However, programs can have diverse results, depending on the sellers and buyers, and the services that are being provided and the way the program is implemented.

Examples of Application: In Costa Rica, forest owners are paid for several land-management practices, and all except agro-forestry⁶ are paid per hectare over five years. In 2001, the Costa Rican National Forestry Financing Fund (FONAFIFO) created the Environmental Services Certificate, which is a financial instrument through which FONAFIFO could receive funds from companies and institutions interested in compensating forest owners for preserving forests. Between 1997 and 2008 FONAFIFO distributed USD206 million to protect 460,000 hectares of forest and almost 6,600 contracts were signed across the country. This PES program, and others, formed part of the successful government initiative to increase the forest cover in Costa Rica and to promote an ecotourism industry. In Tanzania’s Mafia Island, a two-part PES scheme was set up to encourage the mainly poor local population to conserve sea turtles. The initial payment provides immediate recompense for not harvesting nests (and also makes the overall payment scheme less risky for poor residents than if all payment were solely dependent upon successful hatchings). The post-hatching variable payment then provides an incentive not to poach eggs once the nest has been reported. The scheme reduced poaching rates of turtle nests dramatically, from 100% at the year of its introduction in 2001 to less than 1% in 2004. Moreover, from 2001 to 2004, the number of hatchings increased in both absolute terms (from 1200 to over 10,000) and relative terms (from 55% to 71% of the eggs remaining at hatching time).

Assessment: Most of the monitoring effort of PES has been placed on assessing changes in land use and management practice and whether landowners are meeting the terms of their contracts. The implications of these land use changes for ecosystem services are less frequently studied. This applies particularly to payment for watershed services schemes for which the data gathering and modeling required to establish a link between payments, land use/management changes and impact on water quality and flow is extensive and costly. For all types of ecosystem service there is the challenge of establishing a counterfactual or reference scenario of what would have happened in the absence of the scheme to take account of other factors that might influence land use. In any event, PES can be beneficial in producing the following impacts:

⁶ One example of agro-forestry is pasture within actively managed tree or shrub crops.

- *Social:* PES promotes active citizenship and seeks to improve living standards. Small, local schemes have generally achieved a good level of participation; however, some early schemes have been criticized for lack of inclusiveness. Other studies have also found that the schemes that promote social inclusion are less effective in achieving environmental goals. Hence, a better understanding on how the “environment” and “social inclusion” goals can be promoted in parallel is required. Experience shows that poor rural communities only benefit from PES schemes where they include capacity building measures to switch to new resource management practices, and where adequate safeguards are introduced to secure the resource entitlements (including traditional tenure and access rights) of poor rural people. Where land is held collectively, equitable outcomes from PES schemes are more likely to be achieved when economic power prior to the creation of the market scheme is fairly evenly distributed within a community. Livelihood outcomes of PES schemes also need to be looked at from the standpoint of impacts on service users. Impacts on non-participants can be positive or negative, depending on how changes in land use, markets and social relations resulting from the PES scheme are manifest locally. If a payment scheme displaces other activities with higher employment benefits, rural laborers could be disadvantaged. If it increases employment options, these groups would likely derive benefits from the scheme.
- *Economic/growth:* PES could increase income growth through deliberate targeting of poor and marginalized groups, however, to what extent it helps to deliver poverty reduction goals is still not clear. More evidence needs to be gathered to examine linkages between the payments and poverty reduction impacts. Poor farmers voluntarily participating in PES initiatives will usually become better off so long as the mentioned safeguards and capacity building measures are integrated into the schemes. There is also growing evidence that non-financial rewards can also be a powerful incentive for rural communities to join PES. PES schemes involving reforestation often require front-loading of payments to help farmers meet the investment costs. The extent to which payments are front-loaded will shape the tendency to participate.
- *Environmental:* PES can provide incentives for ecosystem conservation and sustainable use of natural resources; however, the significance of the positive environmental impacts need to be examined on a case by case basis, hence a comprehensive monitoring process is required if outcomes are to be determined. .

Guidance / Good Practices: The environment benefits and cost-effectiveness of PES depend crucially on program design and implementation based on the following key criteria:

- Define clearly objectives and property rights (and respect existing tenure and access regimes, with specific safeguards for vulnerable groups), and consider bundling multiple ecosystem services
- Explore means for land-limited households to gain access to under-utilized or under-performing public or private land (e.g. national forest reserves, absentee landholdings), with emphasis on mutual benefit arrangements
- Remove perverse incentives

- Adapt to circumstances and take time to build trust and overcome obstacles
- Raise potential participants' awareness and ability to invest and undertake the necessary changes in natural resource management and use practices through capacity building
- Identify buyers and sellers and ensure sufficient and long-term sources of financing
- Design a simple scheme with low transaction cost and clear incentives, especially for the poor, keeping in mind that incentives do not necessarily need to be financial
- Develop a robust monitoring and reporting framework, preferably in a participatory manner
- Deliver performance based payments and ensure adequate enforcement
- The role of Government as honest broker is key since buyers tend to be in a superior position thus limiting economic gains for sellers from PES schemes.
- PES, should complement a broader set of Government policies (e.g. environmental governance, land tenure reforms, fiscal reform, etc.).

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Certification for Sustainable Production

Brief Description: Certification identifies goods and services that have potential to reduce adverse environmental and social impacts. Differentiating between green products can increase the market value and share for farmers and producers. It also contributes to economic growth while improving environmental practices, and helps ensure long-term resource sustainability. Acting as information systems for consumers, certification schemes include: (1) multistakeholder agreement on what constitutes best/acceptable practice in a set of standards; (2) auditing process to assess compliance; (3) sustainable source tracking process; (4) product label.

Examples of Application: Adopted in 2007, the East African Organic Products Standard (EAOPS) was the single, official standard for organic agriculture production. Back in 2005, Kenya, Tanzania and Uganda had developed different organic standards. At least five public, and several private and international standards for organic agriculture were being used in the region. This proliferation of standards posed significant problems for local organic farmer and called for harmonization. The implementation of the EAOPS is carried out by various private certification companies and export outlets, despite some resistance by one of the national standards bodies to the private sector-led initiatives. Some private sector stakeholders also feared that the governments would have too much control. However, all stakeholders ultimately agreed through extensive consultation that government involvement was necessary for credibility. In 2008, the Pacific Organic Standard was adopted by 10 Pacific Island countries and territories, Australia and New Zealand, a replication of EAOPS aim to increase organic production and counter standards proliferations.

Assessment: Certification schemes still need development and strengthening and, more generally need to be accompanied by capacity building measures to ensure that farmers are able to produce in compliance with standards. As in many contexts smallholder farmers and indigenous communities already utilize traditional production methodologies based on minimal use of external inputs and maximum reliance on self-sustaining agroecological processes, it is important to develop certification approaches that are flexible and context-responsive enough to build on these practices and to avoid the temptation to set extremely high certification criteria.

- *Economic/growth implications:* It could help farmers, foresters and fishermen to secure a higher premium and gain access to a niche market. The evidence on the impacts of various certification schemes on the producers' incomes in developing countries is diverse, but they have generally been modest. Nelson and Pound (2009) demonstrated strong evidence that Fair Trade provides a favorable economic opportunity for smallholder farming families who are able to form producer organizations. Evidence indicated that Fair Trade producers benefited from higher returns and more stable incomes, which allowed a more long-term view than conventional producers in investing in their land, domestic facilities and children's education. On the other hand, a case study in Mexico suggested that certification for organic agriculture failed to generate additional incomes for small-scale producers due to their limited capacity in dealing

with increased bureaucratic requirements (Tovar et al, 2005). A combination of organic with a Fair Trade scheme could effectively help small-scale farmers make the transition.

- *Social implications:* With an increased level of income, there is an opportunity to improve living standards, enhance the resilience of livelihoods and create extra resources for education, health and other social necessities. Other benefits include building self-esteem, access to training programmes, increased confidence in negotiations, and greater gender benefits. All such benefits however greatly vary and depend on the specific nature of each standard and certification process and what it entails with respect to locally prevailing farming practices. It should also be considered that the vast majority of socially disadvantaged agricultural producers in the developing world do not primarily rely on the kind of crops that are usually the target of certification processes.
- *Environmental implications:* Evidence is rather limited. Van Kuijk et al (2009) examined the good forest management practices required by certification schemes and concluded they are beneficial for biodiversity by reducing impacts from logging, creating riparian buffer zones and green tree retention in clearcuts, and conserving protected areas.

Any Guidance/Good Practices: Although there are no worldwide agreed criteria in designing cost-effective certification schemes for sustainable products, some lessons learned include:

- Certification would work if a price premium is attached to certified products. The evidence on whether such premiums exist, and if so how high they are, is very mixed. Aside from the proliferation of certification criteria, one large obstacle is the cost of certification, which can easily absorb all the price premium. Keeping certification costs low is therefore critical, and needs to be stressed.
- Raise awareness for organic goods
- Raise awareness for good produced through agro-ecological practices that are environmentally sustainable and well-suited to local contexts, avoiding rigid imposition of a single set of international standards
- Be clear in the specifications for certification
- Be transparent and non-discriminatory regarding all participants
- Design schemes that allow for inputs and feedback from all concerned stakeholders
- Reduce transitional costs to participation through additional public funding wherever possible
- Ensure that capacity building measures are built into certification schemes, with due consideration for the scope of market opportunities for farmers related to certified goods
- Create straightforward, uncomplicated schemes so less capable stakeholders can participate

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Tools to frame environmental policies: Communication and Nudging

Brief Description

Communication and nudging represent a broad range of evidence-based strategies aimed at stimulating and sustaining environmentally sustainable behaviors among individuals including the following:

- Social marketing approaches which draw on commercial marketing techniques and have been applied at large scale in a variety of fields such as seat belt use, HIV/AIDS prevention and family planning since the 1960s;
- Community-based approaches (a subset of social marketing) focused on changing social norms;
- Nudging which represents low-cost simple interventions aimed at tweaking “choice architectures” to encourage people to making the best decisions (for health, environment or other considerations).

Examples of application:

A social marketing approach was used by Puget Sound Energy (PSE) in the state of Washington (USA) to promote the adoption of compact fluorescent light (CFL) bulbs in 2009. Using a branded campaign approach called “Rock the Bulb” based on research insights among the targeted audiences, the program employed a variety of channels including community outreach, web-based and mass media. Lifetime energy and environmental savings are estimated to have totaled over 118 million in kWh savings and 130 million lbs in greenhouse gas emissions avoided.

In terms of nudging which is a nascent approach, a recent trial at an office building in Amsterdam used bright red strips along the floor to encourage visitors to use the stairs (instead of power-hungry elevators); the frequency of people entering the building who opted to take the stairs increased by 70% during the 24-hour sample period that followed.

Many examples of community-based approaches can be found in the 122 countries where UNDP’s Small Grants Programme has awarded more than 12,000 grants to support projects of NGOs and community-based organizations to demonstrate that community action can maintain the fine balance between human needs and environmental imperatives. For example, in Honduras, 1,200 indigenous women organized in MIMAT, took on the clean-up of the largest lagoon in the area and the streets of the six municipalities that make up eastern Mosquitia. They built an incinerator and also classify, pack and ship garbage to a private company that purchases the material. Since 2006, the MIMAT project has collected an average of 70 cubic metres of garbage per month. As a result, people no longer throw their garbage in the lagoon which is the source of staple food - fish. Also, diseases like malaria and diarrhea have decreased and polluting smoke from residents burning garbage in their homes has been reduced.

Assessment:

The application of communication and nudging approaches offer the potential benefits:

Economic/growth: Adding a behavior change component to infrastructure or other types of investments can have a potential transformational effect. For example, a public transport system may not be utilized unless it is not properly “marketed” to potential users and supported by an evidence-based behavior change communication program. Behavioral change may also stimulate new markets and sources of income.

Social implications: Social marketing, including community-based approaches, can support the creation of new social norms that can in turn help foster and sustain behavior change at the individual and community level.

Environmental: By supporting the adoption and maintenance of green or sustainable behaviors, communication and nudging can contribute directly to environmental benefits such as a reduction in greenhouse gas emissions and pollution.

Any Guidance/Good Practices: To be effective, communication approaches should:

- Recognize that creating awareness or knowledge of a problem or issue is not sufficient to generate behavior change and hence must address a wider range of behavioral determinants such as beliefs, social norms or access to enabling products and services;
- Be evidence-based in that they build on insights from consumer or market research data;
- Target clearly identified audiences;
- Establish clear communication objectives based on the body of evidence;
- Use multiple channels that will convey and repeat a consistent set of messages;
- Integrate monitoring and evaluation to inform program adjustments or continuation;
- Be developed with stakeholder buy-in to ensure replication and uptake.

Nudging approaches in particular should not restrict individuals’ freedom of choice and must be monitored to ensure that they remain effective.

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The

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Green innovation and industrial policies

Brief description

Green innovation policies are policies seeking to trigger the development and commercialization of new solutions to environment problems by encouraging innovation across technologies (horizontal policies) or by supporting a specific technology (vertical policies). Green industrial policies are policies aiming to green the productive structure of the economy by targeting specific industries or firms. They include industry-specific research and development subsidies, capital subsidies, and tax-breaks; feed-in tariffs; and import protection. They do not include policies targeting demand (such as consumer mandates), which can be met by imports without changing local production.

Example of application

Brazil has supported the development of a biofuel industrial sector for decades. China is subsidizing research and development (R&D) and industrial production of photovoltaic (PV) panels, most of which it exports. Morocco is investing public resources in producing electricity from concentrated solar power and plans to sell renewable energy to Europe. In all three cases, the policy objective is both to produce environmental benefits and to create growth and jobs. These countries are not alone in pursuing such approaches. Indeed, most countries tap these types of environmental policies—which really amount to green innovation policies and green industrial policies. Some commonly used policies include R&D subsidies for drought-resistant crops, national strategies for electric cars, and efforts to create new green industries such as China’s promotion of solar PV production.

Assessment

- Economic/Growth implications: Green innovation and industrial policies can help spur economic growth and more jobs to the extent that their contribution to the expansion of existing markets and the creation of new markets outweighs associated costs. However, there is little empirical evidence to-date that the induced innovation is sufficient to overcome the added costs of environmental regulations.
- Social implications: Very few base-of-pyramid green innovations to meet the needs of poor consumers have been sufficiently scaled-up to-date. Whether there may be a need for more focused policy efforts in this area requires a better understanding of the constraints, both on the supply and demand side, impeding scaled-up commercialization, and the benefit-cost of appropriate policies and their implementation to improve market outcomes.
- Environmental implications: Green innovation and industrial policies can help, among others, to (1) reduce pollution and achieve greater resource efficiency in buildings (thermal insulation and new materials, heating, energy-efficient lighting); production processes (new uses of waste and other by-products from firms); agriculture (from improved and resilient crop and livestock breeds, water management, and farming systems to mechanical irrigation and farming

techniques); and infrastructure and urban design (such as land use zoning), and (2) mitigate climate change through a cleaner energy supply (wind, solar, geothermal, marine energy, biomass, hydropower, waste-to-energy, hydrogen fuels); low-carbon end use (electric and hybrid vehicles, climate-friendly cement); and carbon capture and storage.

Any guidance/good practice

- More advanced countries should invest in frontier innovation through research and development as well as in catch-up innovation to benefit from existing global knowledge; lower-income countries (with more limited technological capacity) should focus on adapting and disseminating technologies already developed and demonstrated.
- The desirability of innovation and industrial policies—green or not—cannot be assessed without analyzing a country’s economic situation, the benefits it can expect from these policies, and its ability to avoid capture by vested interests. Experiences around the world with these policies show that the following five lessons are key:
 - The relevant policy intervention depends on what market failure needs addressing
 - Horizontal (or output-based) policies should be favored over vertical policies (“picking winners” or at least the winning technology) when possible.
 - The desirability of innovation and industrial policies depends on the balance between market failure and government failure.
 - Successfully using innovation and industrial policies requires the capacity to remove support when it is no longer justified, especially if one technology proves less promising than expected.
 - The benefits from innovation and industrial policies vary depending on the scale of assessment.

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Decision making under uncertainty

Brief description

There are 4 main methodologies to tackle uncertainty in green growth strategies: Cost-Benefit Analysis (CBA) under uncertainty, CBA with a Real Options approach, Robust Decision Making, and Climate Informed Decision Analysis. All have different strengths and the development of a decision tool to choose amongst them is not a simple matter. Here, we choose to focus on one methodology: Robust Decision Making (for a comparison of the 4 different tools, see Brown and others, forthcoming).

The robust decision-making (RDM) approach helps design strategies able to cope with deep uncertainty (Lempert and others 2003). It starts with analyzing a candidate strategy to determine its vulnerability to surprise and uncertainty. It then tries to reduce this vulnerability, thereby increasing the overall resilience of the strategy. In practice, this is done through a stakeholder consultation process that identifies the available strategies or “policy levers,” then determines the criteria for appraising these strategies and the range of uncertainties to consider. Next, decision makers proceed through an iterative process, identifying the vulnerabilities that different scenarios expose and how these can be addressed until the vulnerabilities are reduced to an appropriate level. This robust decision making approach can be managed through a consultative process or supported by sophisticated modeling.

Example of application

RDM has been applied for water planning in Southern California. Under the RDM analysis, the best management plan was adaptive and included near-term implementation of more water use efficiency techniques. When water managers were presented with these results, surveys indicated an increase in their confidence that they could adequately plan for the effects of climate change despite the uncertainty in forecasts. The methodology will soon be applied in Ho Chi Minh City to enhance flood protection.

Assessment

Benefits

- Full vulnerability analysis of proposed projects
- Transparent, reproducible, and exhaustive scenario discovery reduces over-confidence bias
- Stakeholder process to define measures of success and potential futures builds consensus on project action even under diverse assumptions and priorities
- Adaptive decision process explicitly addresses the limits of our ability to anticipate the future for any project.
- Project alternatives and plans evolve from existing project options

Constraints

- Time and cost intensive
- Quality of the stakeholder process influences the relevance and efficacy of analysis, especially regarding the range of policies available, uncertainties considered, and choice of worst-case scenario
- Requires extensive quantitative modeling of project area

Any guidance/good practice

This approach is particularly relevant when multiple policy goals and world views coexist, because it allows for a flexible definition of success and failure. A cost-benefit analysis requires a consensual objective function that is able to rank all potential outcomes. In contrast, the robust decision making approach makes it possible to combine different performance criteria. It is thus useful for the design of green growth policies, which are based largely on the identification of synergies across policy goals.

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Project-Level Impact Assessment

Brief Description:

Upstream planning and policy-making for inclusive green growth must also translate into downstream decision making and implementation processes to ensure that project-level investments are designed in a manner that enhance environmental and social benefits and manage potential risks. For example, environmental impact assessment (EIA) has been a proven tool over the past 40 years and has a good track record in evaluating the environmental risks and opportunities of project proposals and improving the quality of outcomes. Because EIA is now a well-established practice and is increasingly included in national legislation it can provide a key entry point for addressing social impacts as well through an integrated approach. While it is indeed best practice to include social issues in any environmental assessment, the degree to which this is done is variable. There are also several approaches to project-level impact assessment, such as Social Impact Assessment (SIA) and Health Impact Assessments (HIA), which may also provide entry points and tools for integrating inclusive green growth approaches into project-level design and decision making.

Examples of Application:

EIA, SIA and HIA are applied at the project level as part of the design phase. Impact assessment approaches can be applied to projects ranging from large-scale infrastructure development projects to community-based natural resource management projects.

Assessment: Similar to Strategic Environmental Assessment, the application of project-level environmental, social and health impact assessments in developing countries could bring a range of benefits and safeguard the environmental assets and opportunities upon which all people, particularly the poor depend on. It can also improve project-level design and implementation which is where direct impacts are often realized. However, it must be noted that project-level assessment invariably takes place in a predetermined policy environment and seldom influence upstream planning processes. For example, an EIA of a new energy generation plant will be unlikely to consider other energy generating possibilities. Therefore, project-level assessment should complement upstream assessment such as Strategic Environmental Assessment.

- Economic/growth implications: Project-level impact assessment provides a process to consider potential socio-economic impacts of a proposed project in order to design the project in such a way that enhances the economic benefits of the project while at the same time avoiding negative environmental and social trade-offs. HIA enable health objectives to be considered along with socio-economic and environmental objectives, an important step towards sustainable development.
- Environmental implications: EIA is a well-established process that aims to identify and assess potential environmental impacts of a proposed project to ensure that projects are designed and implemented in a manner that is environmentally sustainable.

Social implications: Project-level impact assessment should include a strong stakeholder engagement component is part of the scoping and assessment process to ensure that the concerns of stakeholders are considered in project-design. The field of SIA provides best practice guidance and approaches to assess social implications of a proposed project.

Any Guidance / Good Practices:

An environmental and social impact assessment process should identify, predict, evaluate and mitigate the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made and maximize opportunities for environmental enhancement, including exploring opportunities for promotion of global environmental benefits. It should be a participative, inter-disciplinary and integrated process. The following resources provide specific guidance and good practice principles.

Sources of Information:

Environmental Impact Assessment, Open Educational Resource, <http://eia.unu.edu/index.html>

World Bank Environmental Assessment Sourcebook, <http://go.worldbank.org/D10M0X2V10>

Principles of Environmental Impact Assessment Best Practice,
http://www.iaia.org/publicdocuments/special-publications/Principles%20of%20IA_web.pdf

International Principles for Social Impact Assessment,
<http://www.iaia.org/publicdocuments/sections/sia/IAIA-SIA-International-Principles.pdf>

Health impact assessments: <http://www.who.int/hia/en/>

IAIA, 1999. Principles of Environmental Impact Assessment Best Practice.

OECD, 2006, Applying Strategic Environmental Assessment: Good Practice Guidance for Development Co-operation, Paris.

UNEP, 2003. Studies of EIA Practice in Developing Countries.
<http://www.unep.ch/etb/publications/Compendium.php>

Vanclay, Frank, 2003. International Principles for Social Impact Assessment. *Impact Assessment and Project Appraisal*, volume 21, number 1, March 2003, pages 5–11, Beech Tree Publishing, 10 Watford Close, Guildford, Surrey GU1 2EP, UK.

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Analysis of Labor Market and Income Effects

Brief Description: The knowledge of how the transition to a sustainable, low-carbon economy will affect employment, especially underlying job movements, as well as income generation and distribution is vital to informing policy. Preliminary analyses that outline the potential implications of different policy choices are therefore a crucial first step.

Green jobs have been mapped and traced in a growing number of countries. For example, based on a broader definition (green jobs as decent jobs which reduce environmental impacts), 2.9 million green jobs were recorded in Brazil in 2010, accounting for 6.6 percent of all formal employment. Green job growth has continued to be strong, growing 6.1 per cent per year against 5.8 per cent for total formal employment. In a recent assessment to underpin its new development strategy, South Africa has evaluated the potential to create net direct green jobs at 460,000 by 2025.

ILO's analysis tool can identify the changes, opportunities and challenges in the labor market with a high degree of resolution, in particular for young women and men⁷. The tool allows for the identification of the potential job creation and job loss on a sector-by-sector basis as well as shifts in income by type of household. Beyond the assessment of impacts, the tool provides labor market information, highlighting opportunities to create decent work for youth for example and provides pointers for policy formulation such as needs for formalization of employment in certain sectors or for support to green micro- and small enterprises, notably for young entrepreneurs or infrastructure investment. Similarly, the data generated with the tool, provide the basis for assessments of the expected transformation in skills requirements and the implications for education, vocational guidance and training policies.

Examples: In support of government efforts to protect and sustainably manage of forests, a very detailed assessment has been prepared for the Brazilian forest sector disaggregating 12 forestry activities and distinguishing between the Amazon (natural forests) and other parts of the country. It shows that forest-based employment is far larger than normally reported, that some activities have high employment elasticity and multiplier effects, but also that incomes are low in some of these activities, requiring complementary measures for poverty reduction. Other assessments have been conducted in Mauritius. Work is under way among others in India (Gujarat state), Nepal, South Africa and Sri Lanka.

Assessment: The tool requires at least an input/output table and ideally a Social Accounting Matrix as a basis. This information is derived from the national accounts and supplementary surveys. Data are available in most developing countries from statistical offices, ministries of planning or finance and central banks. Before finalizing it, the tool has been tested in Bangladesh to ensure its applicability also in Low Income Countries. The tool should be used by qualified economists and labor market analysts. Professionals who can undertake the analysis or can be trained with little input exist in most developing countries. One of the limitations of the tool in its simple form, is its static nature. This limits the time horizon of analysis to the near to medium term (around 5 years). A dynamic version is also available

⁷ A guide for the application of the tool is available from the ILO website: ILO (2011) [Assessing Green Jobs Potential in Developing Countries: A Practitioner's guide](#)

(DySAM) and used but requires more data and preparation. The ILO offers relevant support and capacity building for both versions. It is currently supporting national partners to apply DySAMs in Indonesia, Malaysia and South Africa.

Measures combining skills development, job assistance and economic diversification are needed to assist workers at risk of losing their jobs, e.g. mining regions. (ILO-UNEP, 2012)

- Economic / growth implications: Gross and net impacts of greening the economy in terms of employment gains or losses and of income distribution are affected by the way changes in relative prices for goods, services, capital and labor are transmitted through the whole economy, including input-output linkages in value-chains, the shares of wages in value-added and expenditure patterns of households. The impacts are strongly conditioned by the policy instruments adopted and their interaction with the structure and composition of the economy in terms of sectors and sizes of enterprises. Substantial net gains in employment and improvements in income distribution are possible provided the right policies are applied. The labor market analysis tool helps to design policy so these development benefits accrue. It also helps to ensure that human resources are available across sectors in a timely manner to avoid skills shortages and reduce the cost of labor market adjustment. The tool also helps to identify workers who will be relocated because of the transition to greener growth and allows putting in place policies like unemployment benefits, labor market intermediation and economic diversification to make the transition to a greener growth smooth and just.
- Environmental implications: The tool enables policy makers to assess social impacts of environmental policies and to compare the impacts of different policy instruments for the achievement of a given objective. This makes it possible to identify opportunities for synergies, but also potential trade-offs. The information obtained provides a basis for an informed dialogue with stakeholders. This is often critical in order to build consensus and stable support for environmental policies for example by making employment benefits visible or by anticipating and mitigating social cost when reforming energy subsidies.
- Social implications: Social inclusion is a goal and policy priority in a growing number of developing countries. Access to gainful and productive employment is the most important way this goal can be realized. The transition to greener economies has the potential to lift millions of workers in developing countries, particularly women, out of poverty and to include them in the formal economy. A greener economy can not only create more and better jobs, it could also make a major contribution to poverty reduction by improving incomes. The tool allows to identify specific opportunities, assess the nature and the scale of benefits and to tailor policy instruments and programs accordingly.

Any Guidance / Good Practices: The ILO Strategy for the Green Jobs Programme includes a comprehensive knowledge base, tested tools and practical approaches. The program brings together a team from various ILO units and offices across the world seeking the full involvement of the constituents and building strategic partnerships. The Programme operates at various levels, (i) it promotes

international policy coherence through research and advocacy (e.g. between climate change and employment/labour policies in the international negotiations), (ii) supports constituents at national level through policy and technical advisory services and (iii) provides capacity development of constituents and partners through training and knowledge sharing at international, regional and national level.

Sources of Information:

ILO – UNEP (2012). Working towards sustainable development

ILO (2012) Promoting safety and health in a green economy. The report highlights occupational safety and health as an integral part of the promotion of green jobs and a greener economy to achieve an economic and social development that is also environmentally sustainable.

ILO (2011) Assessing Green Jobs Potential in Developing Countries: A Practitioner's guide . This guide provides practical solutions to help fill information gaps in the knowledge of how the transition to a sustainable, low-carbon economy will affect employment, especially underlying job movements.

ILO (2011) Promoting Decent Work in a Green Economy. ILO Background note to: "Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication" UNEP 2011

ILO(2011) Anticipating skill needs for the low carbon economy? Difficult, but not impossible. This research brief is a digest of the Comparative Analysis of Methods of Identification of Skill Needs on the Labour Market in Transition to the Low Carbon Economy (ILO, Geneva, 2011c), which resulted from a joint EC/ILO project Knowledge sharing in early identification of skill needs.

ILO (2011) Skills for Green Jobs: A global view. The report examines the experience of 21 developed and developing countries representing 60 per cent of the world population in shifting to a greener economy.

ILO(2010) The social and Decent Work dimensions of a new Agreement on Climate Change. Highlights the close inter-linkages between climate change and the world of work and discusses entry points for promoting policy coherence between climate and social and labour policies.

ILO –UNEP-IOE-ITUC (2008) Green Jobs: Towards Decent Work in a Sustainable, Low-Carbon World. The first comprehensive study on the emergence of a “green economy” and its impact on the world of work.

OECD (2012) The Jobs Potential of a Shift towards a Low-carbon Economy

Framework & Guidelines on Land Policy in Africa

Brief description

In 2006, the African Union Commission, the Economic Commission for Africa and the AfDB initiated a process for the development of a framework and guidelines (F&G) for land policy and land reform in Africa with a view to strengthening land rights, enhancing productivity and securing livelihoods for the majority of the continent's population. That initiative was carried out by way of extensive consultations involving the participation of Regional Economic Commissions in all the five regions of the continent, civil society organizations, centres of excellence in Africa and elsewhere, practitioners and researchers in land policy development and implementation, government agencies and Africa's development partners. The final outcome of the initiative was then presented before the formal decision-making processes of the AU for approval and adoption by the Assembly of Heads of State and Government in July 2009.

The Framework and Guidelines (F&G) are presented in seven interrelated chapters:

- Chapter One provides the justification for and process followed in developing the F&G;
- Chapter Two describes the context which has defined the nature and characteristics of the land question in Africa in order to explain the reason why the land sector has not played its primary role in the development process. That role is examined in Chapter Three;
- Chapter Four sets out the key operational processes which African countries will need to follow in order to develop comprehensive policies that would enable the land sector to fully perform that role;
- Chapter Five analyses the difficulties likely to be met and conditions necessary for the effective implementation of such policies;
- Chapter Six discusses the measures which African countries may wish to put in place to track progress in the development and implementation of those policies;
- The final chapter is a concluding statement on how member countries of the AU might want to use the F&G.

Example of application

Rwanda has volunteered to become a pilot country for the implementation of the Declaration on land through the use of the F&G. National land policy processes were strongly influenced by the F&G in Burkina Faso, Burundi, Mali, Kenya and Uganda.

Assessment

- Economic/Growth implications: In most African countries, agriculture is the main source of livelihood for the majority of the population and a major contributor to economic growth. The ability to secure access to land resources through a variety of tenure systems that guarantee returns for short or long term investments is important for the improvement of agricultural productivity in general and food security in particular. Clear property rights in agriculture also have the potential of increasing revenues through taxation and enhancement of agricultural exports.

- Social implications: To the vast majority of societies in Africa, land is regarded not simply as an economic or environmental asset but as a social, cultural and ontological resource. Land remains an important factor in the construction of social identity, the organization of religious life and the production and reproduction of culture. The link across generations is ultimately defined by the complement of land resources which families, lineages and communities share and control. These are dimensions which land policy development must address if prescriptions for change are to be internalized. Also to be addressed are gender inequalities in secure access to land and in land tenure, which often place women at a disadvantage, despite the major role of women farmers particularly in smallholder agriculture across the continent.
- Environmental implications: Africa has a rich heritage of natural and ecological resources which remain central to development. Strong systems of land governance rooted in the principles of sustainability will be critical in an effort to ensure their protection and renewability.

Any guidance/good practice

Land policy development is clearly a complex, interactive and often long drawn out exercise. Reduced to its fundamentals, however, the process may be conceptualized as consisting of the steps summarized below:

1. Stakeholder consultation and identification of salient problems in the land sector;
2. Preparation of working drafts for further discussion with stakeholders;
3. Appraisal of institutional and financial/budgetary options;
4. Refinement, processing and approval of the national land policy;
5. Design of implementation programmes and rationalization of institutional responsibilities for implementation;
6. Enactment of new and revision or repeal of existing land and land-related legislation;
7. Further dissemination of information to the public, training and capacity building to support implementation.

Selected sources

Africa Union, African Development Bank, Economic Commission for Africa. 2009. Framework and Guidelines on Land Policy in Africa: a Framework to Strengthen Land Rights, Enhance Productivity and Secure Livelihoods. Addis Ababa, 41p.

http://www.uneca.org/fssdd/lpi/Publications/F&G%20on%20Land%20Policy_ENG.pdf

Voluntary Guidelines on the Governance of Tenure, FAO 2012,
<http://www.fao.org/nr/tenure/voluntary-guidelines/en/>

Achieving Water Security for Inclusive Green Growth

Brief description

Water security is a key element of any green growth strategy. Integrated water resources management is a process for managing the competing uses of water by different interest groups and water-related risks (scarcity, excess, lack of quality, or breach in the resilience of freshwater systems). It is a means to achieve sustainable and inclusive growth and development. Water is thus treated as an economic, social and environmental good helping ensure that policies, laws and infrastructure options for water resources development, management and use are developed in a coherent and sustainable way.

Example of application

Well designed water resources management policies and plans can improve the delivery of water supply and sanitation services, manage water-related disasters, build resilience to climate change and variability, and manage the extraction of water for use by agriculture, industry, energy and other purposes. Establishing an enabling environment that promotes the management of water-related risks is critical. Such an environment includes measures such as: necessary legal frameworks with proper enforcement mechanisms; financing strategies and the use of economic instruments; institutional development; management institutions and tools at the basin level; mechanisms for determining an acceptable level of risk; knowledge sharing and capacity development; and development of data and monitoring systems. This approach facilitates good decisions on investments to promote the resilience of ecosystems and infrastructures needed for sustainable development and green growth.

For example, the Lake Chad Basin Commission developed a basin water charter, which is a multi-country legal platform for effective protection, co-management and coherent water resources development of the basin. In the Kibuo and Tende River Catchment of Kenya, sustainable agricultural and land use practices were promoted that lead to a reduction of nutrient and sediment transport into the water courses. Water harvesting techniques were introduced in Bugesera, Rwanda for multiple water uses such as agriculture, livestock and human consumption, which have improved the livelihood of rural population. In the Songwe river basin, shared between Malawi and Tanzania, a river catchment development plan is being prepared to establish a basin organization. The initiative will also prepare multipurpose projects including hydropower and rural electrification, irrigation, flood control, water supply, and promote income diversification to foster a greener and more inclusive growth. Many more examples can be found in Global Water Partnership's IWRM ToolBox.

Assessment

An integrated approach helps to establish the effective water governance systems that are essential for building sustainable development and resilient societies. Political awareness and capacity building of institutions tasked with water management is essential at all levels as is engaging with stakeholders to understand local issues and priorities. It is also essential to ensure that water is properly addressed in major economic sector planning and programs. Similarly, water allocation should reflect green growth policy priorities. As such, it is imperative to look beyond basin organizations and begin working with regional economic commissions, power pools, agricultural regions, etc. Other tools from the Inclusive

Green Growth toolkit, such as Environmental Fiscal Reform, Payment for Environmental Services and Social Protection Instruments can be applied as part of an integrated approach. Ensuring sustainable financing for water supply and sanitation, and for water resources management more generally, is also critical for achieving water security.

The main challenge is to operationalize the integrated approach in a “pragmatic but principled” way that recognizes the political economy of water resources management. Reforms require the articulation of prioritized and practical interventions that meet immediate needs whilst evolving over time and space. A long term vision and sequential approach is thus needed that will vary from one location to another depending on both hydrological and political conditions. Targeted, time-bound accompanying measures are essential to make reform happen.

Natural climate variability, exacerbated by climate change, is reflected directly in water-related phenomena, such as the timing and quantity of rainfall, droughts, floods, aquifer depletion and sea level rise. Building resilience to climate variability on all timescales is an increasing challenge for policy makers and water resources managers. The challenge is intensified by the geography of water, as many river basins and aquifers cross administrative boundaries, both within and between countries. As an example, Africa has over 60 shared river basins and 38 shared aquifers between 2 or more countries and thirteen major river basins covering much of Africa are shared by 5 or more countries. Water is also unevenly distributed with about half of the continent facing water stress or scarcity, with considerable resources underutilized for economic and social needs. Management at the basin level is one way to address these problems but this often requires political agreement between countries to maximize benefits for all.

Economic growth implications: Water, energy and food security heavily influence economic growth and development and they are closely linked. An integrated approach supports appropriate water infrastructure, optimum allocation of scarce water (and financial) resources and efficient water-use practices that opens up development opportunities across many sectors to promote economic growth. An integrated approach also reduces the social and economic impacts of water related disasters.

Environmental implications: Adoption of an integrated approach helps to improve water efficiency, preserve biodiversity and environmental capacity, and reduce pollution of water resources. It also secures ecological services that have an intrinsic value and are essential for livelihoods and economic activity.

Social implications: Water and watershed services are critical to improving livelihoods, nutrition and health. Improved access to water can reduce the workload for girls and women enabling them to actively participate in society on better terms. Advancing an integrated approach to water resources management can reduce conflict over scarce resources and maximize benefits for different communities through coordination and negotiated agreements between competing water users.

Any guidance or good practice

The Global Water Partnership (GWP), a network of Country and Regional Water Partnerships comprising water experts, development agencies, public institutions, government agencies, private companies, professional organizations, academic institutions, civil society and others, has developed a ToolBox for

the application of an integrated approach to water resources management towards achieving water security. This is in the form of a free and open database with a library of background papers, policy briefs, technical briefs and perspective papers as well as numerous case studies and references for each tool. These are all available for use by anyone who is interested in learning about or implementing an integrated approach for the management of water resources at a local, national, regional or global level. UNDP's network for capacity building in water resources management, Cap-Net, has along with its partners developed more than 20 training materials and tools on sustainable water management published in English, French, Portuguese and Spanish and these have been translated into 10 more other languages - available free of charge at: www.cap-net.org

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World Water Assessment Programme (2012), The United Nations World Water Development Report 4: Managing Water under Uncertainty and Risk. Paris: UNESCO.

Green Accounting

Brief Description

Green accounting extends national accounts to include the value of the damage and depletion of the natural assets that underpin production and human well-being. In particular, net saving, adjusted for the depreciation of produced assets and the depletion and degradation of the environment, indicates whether well-being can be sustained into the future. Negative net saving indicates that it cannot, because the assets that support well-being are being depleted. With green accounting, the scorekeeping indicators (such as wealth accounts) can be used alongside GDP to better assess how well a country is doing for the long term. It also provides detailed accounts for management of natural capital, which many countries have adopted over the past 20 years—especially for water, energy, and pollution. However, few countries have adopted the revised macroeconomic indicators.

Examples

Countries like Australia, Botswana, and Spain are implementing accounts for material resources and piloting ecosystem accounts. This piloting of methods will help the development of internationally agreed methodology for ecosystem accounting. This is supported by parallel efforts to identify data gaps and capacity constraints and a strategy to overcome these limitations. A World Bank–facilitated partnership—Wealth Accounting and Valuation of Ecosystem Services (WAVES) —is helping implement natural capital accounting based on the SEEA. Through WAVES, Botswana, Colombia, Costa Rica, Madagascar, and the Philippines have embarked on work plans that have been endorsed at the highest level of their governments.

Assessment

Natural capital accounting can provide detailed statistics for better management of the economy. For example, land and water accounts can help countries interested in increasing hydro-power capacity to assess the value of competing land uses and the optimal way to meet this goal. Ecosystem accounts can help biodiversity-rich countries design a management strategy that balances tradeoffs among ecotourism, agriculture, subsistence livelihoods, and ecosystem services like flood protection and groundwater recharge. Ecosystems accounting not only provides a tool to maximize economic growth but is also a means to measure who benefits and bears the cost of ecosystem changes, helping governments gauge whether their growth is inclusive. Natural capital accounting straddles all three pillars of sustainable development and can move the world beyond a GDP metric to focus on all assets that a country needs for long-term growth and well-being.

Any Guidance/ Good Practices

The System for Environmental and Economic Accounts (SEEA) provides an internationally agreed method, on par with the current System of National Accounts, to account for material natural resources like minerals, timber, and fisheries. The adoption of the “Central Framework” of the SEEA has eliminated a major barrier to the adoption of natural capital accounting. The challenge now is to build capacity in countries to implement the SEEA and to demonstrate its benefits to policy makers. Many countries want to take natural capital accounts beyond the material resources like timber to include ecosystem services

such as water filtration, flood protection, and pollination services. These “regulating services” are not yet included because of a lack of internationally agreed methodology to calculate them, making it a barrier to implementation.

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Making Growth Resilient to Climate Change through smart planning

Global development planning is increasingly affected by risks associated with a changing climate. These risks arise from an increasingly variable climate, the likelihood of hazards to occur in vulnerable areas, and their consequences on physical, social, and economic assets that determine the impact of climate change on development goals.

In general, developing countries are disproportionately vulnerable to climate risks (as compared to developed countries) due to their exposure to recurrent extreme weather events and/or increased climate variability and their relatively limited resilience and adaptive capacity. Climate change exacerbates climate-related risks and creates additional uncertainty, making historical climate patterns an increasingly poor guide to understanding the future climate⁸. As a result, climate change introduces new information needs and raises new challenges for development projects. In doing so, it strengthens the need for investments to improve access to climate services⁹ and related capacities relevant for making practical climate resilient decisions. Improved information and capacities are pre-requisites for “climate smart” projects in climate-sensitive sectors (*e.g.* water resources management, agriculture, infrastructure, forestry, etc.). Using the best available climate information (*e.g.* climate trends, early warning systems, seasonal forecasts, climate change projections) and applying decision making approaches that account for the limitations of existing climate information (*e.g.* scenario-based or sensitivity approaches, etc.), can help countries improve climate risk management within planning processes as a way to increase resilient development.

Strengthening resilience to the impacts of climate change is closely intertwined with development. In this context, mainstreaming the assessment of climate risks and potential opportunities into existing and future investments and development programs is critical to ensure the sustainability of infrastructure, growth, and long-term development under increasing risks from a changing climate (World Bank, 2010). Opening up and improving datasets and providing access to good quality climate information, socioeconomic data and technology options, in addition to well-established transparent “how to” and planning tools, methods, and experience is a necessary first step to scale-up and accelerate climate smart-planning and resilience. The use of analytical tools and methodologies that facilitate the assessment of climate change risks and the integration of adaptation and resilience planning at the sector, project, and program level adds to the evidence base for integrated decision-making across sectors.

⁸ World Bank, 2012

⁹ According to the World Meteorological Organization Global Framework for Climate Services Report (2012), ‘a growing number of countries are establishing capabilities for offering national climate services. They are building on their experience in providing weather and climate information to create services that can customize this information and target it to specific users. In this way, climate services make it possible to incorporate science-based climate information and prediction into planning, policy and practice to achieve real benefits for society’.

A wide array of tools and methodologies (Table 1) are currently available to respond to some of the needs of the most vulnerable countries. These tools and methodologies aim to support actions that increase the resilience of development initiatives and low carbon economic growth and development. Examples include climate risk assessment¹⁰ tools (e.g. Climate Change Knowledge Portal¹¹, CI:GRASP¹², CRISTAL¹³), manuals/guidance for climate-proofing investments, climate-safeguard screening tools, sector-specific policy strategies, and mainstreaming processes to integrate risk-reducing measures in sector strategies, projects, and programs. In addition, an array of knowledge sharing, stocktaking, research and learning materials and events based on specific projects or programs have recently been produced and integrated in common frameworks such as the Climate and Development Knowledge Network (CDKN)¹⁴. Additional efforts are also being sought through inclusive platforms for both resilience and low carbon growth tools and methodologies such as Climate Smart Planning Platform¹⁵ and the Green Growth Knowledge Platforms¹⁶.

According to an analysis commissioned by the OECD¹⁷, there are opportunities for providing common guidance on categorization of risk management frameworks tools, and to clarify a wide and diverse terminology. In an effort to improve climate-smart planning and understanding the use of screening and assessment tools, the development co-operation community should increase country ownership of risk screening, of assessment tools, and of processes to increase climate resilience. The development community can help to strengthen the links between process guidance tools on the one hand, and data and information provision tools on the other. It can act to supply guidance for users in moving from analysis to action and collaborate to prepare harmonized guidelines. Table 1 provides an example of a wide range of tools.

¹⁰ UNISDR understands climate risk assessment as the process of analyzing potential impacts on activities, outputs, and programs, while evaluating existing condition of vulnerability that could pose a potential threat or harm to people, poverty, and /or livelihood, not to mention the environment on which these depend.

¹¹ World Bank Climate Knowledge Portal (<http://climateknowledgeportal.worldbank.org>)

¹² <http://cigrasp.pik-potsdam.de/>

¹³ Community-based Risk Screening Tool – Adaptation and Livelihoods (www.iisd.org/cristaltool)

¹⁴ <http://www.cdkn.org>

¹⁵ <http://climatesmartplanning.org>. Combined with capability-building functions, the Platform can help integrate climate change impacts into sustainable planning exercises of developing countries and enhance investment readiness through the identification of financeable programs for climate action. Using a host of communications tools, including communities of practices, webinars, and video-conferences, the Platform aims to create a south-south network of experts, who will assist in the continuous development of the Platform. This initiative intends to further strengthen linkages with existing planning platforms and donor support programs.

¹⁶ <http://greengrowthknowledge.org>

¹⁷ Hammill, A. and T. Tanner (2011), “Harmonising Climate Risk Management: Adaptation Screening and Assessment Tools for Development Co-operation”, OECD Environment Working Papers, No. 36, OECD Publishing. <http://dx.doi.org/10.1787/5kg706918zvl-en>

Table 1: Categories of climate risk management/adaptation tools

Type / characteristics	Notes	Examples from the development community
1. Process guidance tools		
Tools that guide users through the identification, gathering, and analysis of relevant data and information to: <ul style="list-style-type: none"> Identify climate risks to development activities (often using Type 2 tools) Assess and analyse climate risk management strategies Evaluate option to integrate climate risk management into development activities 	These tools can guide users through the entire CRM/adaptation process (e.g. from awareness-raising to monitoring and evaluation), or just one or several steps in the process (e.g. assessing current and future climate risk). The majority are available as documents (e.g. booklets, reports), although some are available as computer programs.	<ul style="list-style-type: none"> Adapting to Coastal Climate Change: A Guidebook for Development Planners www.crc.uri.edu/index.php?actid=366 BMZ Environment and Climate Assessment www.gtz.de/climate-check CEDRA: http://tilz.tearfund.org/Topics/Environmental+Sustainability/CEDRA.htm CRISTAL: www.cristaltool.org ORCHID: www.ids.ac.uk/climatechange/orchid USAID Guidance Manual: http://www.usaid.gov/our_work/environment/climate/policies_prog/adaptation.html
2. Data and information provision tools		
These tools generate or present data and information on: <ul style="list-style-type: none"> Primary climate variables and projections (e.g. temperature, rainfall trends) Secondary climate impacts (e.g. flood maps, crop yields) Vulnerability and response options (e.g. poverty maps, example adaptation options) 	These tools tend to depend on some computer capacity, and a growing number on Internet access. They tend to be databases, modelling programs, mapping and visualisation tools.	<ul style="list-style-type: none"> CI-Grasp www.ci-grasp.org Climate Wizard: www.climatewizard.org Climate Change Explorer Tool: www.weadapt.org/wiki/The_Climate_Change_Explorer_Tool PRECIS: www.precis.metoffice.com SERVIR: www.servir.net World Bank CC Knowledge Portal: climate, impact and socio-economic data http://sdwebx.worldbank.org/climateportal/
3. Knowledge-sharing tools		
Platforms and networks that offer adaptation practitioners a virtual space for information and experiences related to climate risk and adaptation. These spaces allow users to: <ul style="list-style-type: none"> House or store information and knowledge Share it with other interested users Interact with other users to develop or advance ideas, approaches, tools, monitoring etc. 	Typically knowledge platforms, they are increasingly reliant on Web 2.0 functionality and user-generated content. They can be important for validation of Type 1 and Type 2 tools, as these platforms can offer a space for user feedback and offer some sort of quality control mechanism. They also help to build a community of practice around climate change adaptation.	<ul style="list-style-type: none"> Adaptation Learning Mechanism: www.adaptationlearning.net AfricaAdapt: www.africa-adapt.net Climate Adaptation Knowledge Exchange: www.cakex.org Climate One Stop: http://arcserver4.iagt.org/climate1stop/ ELDIS resource guide on Adaptation: www.eldis.org/go/topics/dossiers/climate-change-adaptation weADAPT platform: www.weadapt.org World Bank CC Knowledge Portal: http://sdwebx.worldbank.org/climateportal/

Source: Hammill and Tanner, 2011: Harmonising Climate Risk Management: Adaptation Screening and Assessment Tools for Development Co-operation

Use of climate risk tools

There are several examples on how different tools can improve decision-making and processes for the mainstreaming of climate resilience. In the agriculture sector, development planners can usefully evaluate adaptation policy options, including sustainable land management, with the aim to efficiently use natural resources and climate-proof projects and programmes. Other adaptation options may include empowering farmers to make informed decisions about agricultural diversification through inter-cropping, efficient use of adapted crop varieties and water by collecting and storing rainwater. Careful assessment of existing options is a precondition for supporting rural and farming households in vulnerable countries to protect natural resources and halt land degradation or desertification, while enhancing the resilience of their own livelihoods and agricultural systems to increasing climate variability and change. However, enabling policies need to be designed and implemented to facilitate

access to related information and resources for useful decision making processes. Putting such policies in place can encourage local households and farmers in many vulnerable countries to protect natural resources and help to halt desertification while at the same time protect against climate change.

Technical assistance on how to use and access different tools and interpret their results is still a significant need in most developing countries. For example, several countries - Cape Verde, Malawi, Nicaragua, and Colombia – recently took part in a pilot project that provided technical assistance to assess national development plans/UN Development Assistance Frameworks and propose options to manage the climate risks identified. Under this project, countries were able to revise some important development plans taking into account future climate change. This included: Malawi's Agricultural Sector-Wide Approach, Cape Verde's Poverty Reduction Strategy Paper, and Nicaragua's National Human Development Plan. In El Salvador, the national funding institution used a set of questions to review in detail its funding rules and internal processes and assess the likely impact of climate change on its activities. The rules and processes were then revised and adjusted to take climate change risks and opportunities into account, helping to make the investments more resilient and enhancing adaptation capacity.

Climate Resilience Screening and Assessments

While climate-proofing investments, programs and projects are important, making growth resilient to climate change should start at **a strategic level**. This involves mainstreaming climate change issues within national development frameworks, national budgetary allocation as well as sector policy frameworks. For instance, in the case of Mali, mainstreaming climate change into the National Development Framework was built upon key strategic background documents but also in close communication with national sector policies, including the energy and the agricultural sector strategies.

Screening processes are generally similar in scope and focus. They provide different approaches to assess the sensitivity of project, sector, or program activity to historical trends and variations in climate, the geographic sensitivity and exposure, and baseline adaptive capacity. Assessment processes evaluate the response of institutions to existing levels of risk management and identify gaps for addressing a range of potential future risks. A **risk management approach** that includes the identification, prioritization, selection and implementation of climate resilience options, and looks at the inter-linkages between climate change and other risk drivers (e.g. socio-economic and demographic trends, etc.), as well as the encouragement of monitoring and evaluation of different steps and the potential for sustained low carbon growth, are key aspects to be considered by policy makers at different levels. To summarise, there is a need to “know”, “target” and “manage” risks to determine an *acceptable* level of risk and to consider the full range of strategies and options to respond (OECD, 2013).

In addition, a climate risk management approach should take into account:

- Economic/Growth implications: Climate proofing of investments supports sustainability of growth, by managing risks and giving rise to economic opportunities. For example, adaptation measures to increase resilience can create jobs, build capacity, generate new business opportunities, and strengthen the asset base on which productive activities are based (e.g. more resilient and productive ecosystems). Climate proofing can also reduce the negative impacts on economic growth due to climate-related shocks, such as resource scarcity (e.g. water), output loss (e.g. agricultural production), and productivity loss (e.g. labour absentee or death due to

more frequent and severe floods and droughts), and to minimise the costly retrofitting of infrastructure ill-suited to the future climate (OECD, 2013). More climate resilient investments in key economic sectors and services (e.g. agriculture and renewable energy systems) can feed off each other creating a virtuous circle of inclusive and low carbon growth. Economic growth can also increase exposure and vulnerability to climate risks, particularly in rapidly urbanising and industrialised contexts, it will be important to guard against these effects.

- Environmental implications: Climate proofing of investments and projects can lead to: (i) improved use and recognition of the economic contributions of and valuable services flowing from well-managed natural resources (including land, water, forests, etc.); (ii) greater resource efficiency in buildings (heating, energy-efficient lighting, etc.); (iii) more productive and resilient agricultural practices/technologies; (iv) potential links with environmentally-friendly and low-carbon energy generation technologies; (v) the possibility of improved resilience to disasters and other shocks including actions through ecosystems based adaptation; etc.
- Social implications: Integrating climate change considerations into development activities to make them more resilient to climatic change means that people should be less affected by droughts, floods, gradual temperature increases and extreme heat, new crop and livestock pests, or unpredictable weather patterns. Food security and inclusive rural growth can benefit from more sustainable and resilient agricultural land and water management practices, from more resilient urban land use and development patterns and also from new opportunities linked to mitigation (e.g. afforestation programs). Urban populations, especially urban poor, can also benefit from improved urban adaptive infrastructure (e.g. sustainable transport, better sewage system and water supply in current slum areas, etc.). Moreover, access to renewable and clean energy, and efficient use of energy, can build resilience in energy systems and communities while also providing new opportunities in education, reduce women's workload, and improve overall social welfare in both rural and urban areas.

Guidance/good practice

Participatory approaches can help to tap into the adaptive knowledge of local communities with in-depth knowledge of local environments and ecosystems, both to identify the main risks from climate change and appropriate adaptation responses to these. Bearing this in mind, suggested steps for climate proofing investments, programs and projects at the country level are outlined below. However, greater efforts are still needed to ensure that partner countries exercise effective leadership over their own national approaches and use of climate screening and assessment, including their integration into relevant sectoral policies in different areas.

To address some identified concerns and to ensure the continued effectiveness of screening and assessment tools, several recommendations are formulated for the development community:

- ***A more systematic and robust collection and validation of best available climate data/information*** (e.g. historical and projected data for temperatures, precipitations, trends in extreme events,) as well as the use of appropriate decision making approaches to ensure that the available evidence base is used effectively, but with the understanding of data analysis limitations and associated uncertainty.

- ***Ensure historical trends and range of future potential impact scenarios are considered and reflected in the decision making and priority setting process*** (in particular to be reflected in national budget and expenditure revision). This also includes a detailed mapping exercise of the most vulnerable in light of future climate change, whom are usually the poor in urban and rural settings, and ensure their livelihoods are well managed from potential climate risks.
- ***Analyses of potential short- and long-term impacts of climate change and variability*** on the proposed project/activity (and vice versa to characterize the potential impacts that the proposed project may have on climate change).
- ***Awareness raising on the impacts of climate change***, using effective methods to communicate climate risk information with local communities, such as radio broadcasting, and making them understand the implications of climate change on their daily activities and the benefits of early adapting to changing climate on future incomes, business opportunities and the role of adaptation in sustaining livelihoods.
- ***Working to harmonize aspects of risk screening and assessment processes*** through the development of (i) common and clear terminology, or a unifying reference source of such terms; (ii) a generic and common risk management framework which can still be tailored to agencies' and partners' contexts and needs; (iii) organization and categorization systems; (iv) a simple, navigable clearinghouse for tools which allows users to gain exposure to tools and identify relevant tools.
- ***Forging better links between users of process guidance tools and users of data and information provision tools***. This will allow generators of sector and climate/climate-related information to gain a clearer idea of what users of process guidance tools want and allow process guidance tool users to become more informed consumers of climate-smart information.
- ***Bolstering guidance and support to help users move from assessment to action*** through the development of common guidance or through enhanced stakeholder engagement; this also includes support for policy makers at national and sectoral levels to understand the implications of data and information for policy (i.e. climate services).
- ***Working with development partners to ensure ownership and integration of risk screening and assessment tools***, and thereby have a greater impact on government decision making. Continuing support for training and facilitation in the use of available tools, including both introductory training events for new users and follow-up events for existing users.
- ***Inclusion of a cost-benefit analysis, multi-criteria assessment of the proposed adaptation measures as well as the costs of inaction*** (or other relevant economic evaluation) to present a policy argument for taking action where justified.
- ***Prioritization and sequencing of the integration of best adaptation measures*** in the design of the project/activity and the preparation of development plans.
- ***Monitoring and evaluating the effectiveness, efficiency and relevance*** of adopted adaptation measures, and feeding lessons into adaptation measures.

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Effective and Efficient Policies to Support Sustainable Energy in Developing Countries¹⁸

Brief Description

Over the last two decades many developed and developing countries have introduced a combination of economic, market-based, fiscal, and financial incentives to promote both renewable energy (RE) and energy efficiency (EE) based on multiple policy objectives (for example, enhance energy security, reduce GHG emissions, improve local environmental sustainability, increase energy access, and save energy or reduce energy intensity).¹⁹

The economic instruments introduced have taken the form of price based mechanisms such as feed-in tariffs and standard offers, or quantity setting mechanisms such as national targets, portfolio standards and auctions/tenders. Portfolio standards –which set a target or quota of either RE capacity or energy savings - are generally coupled with a market of tradable certificates (e.g.; green, white). Fiscal and financial incentives comprise a wide range of different instruments, including investment grants, investment tax credits, concessional lending, and VAT or excise duty exemptions, among other.²⁰

The use of economic incentives to promote RE and EE in the power sector has been necessary in the absence of externality pricing and the presence of fossil-fuel subsidies. Increasingly, developed and emerging economies are adopting carbon pricing instruments –such as emissions trading frameworks-, although their introduction in the least developed countries (LDCs) is uncertain, at least in the short to medium terms.

In the process of designing and implementing a package of incentives to promote sustainable energy, policy makers and regulators have gradually learned that the choice of policy mechanism, the features of policy design, the setting of tariff levels, the compatibility among different instruments, and the sequencing of measures are all crucial aspects of an effective and economically efficient regime.

Examples of Application

Today, about 120 countries have a national target on RE, more than half of which are developing nations. Feed-in tariff policies (FITPs) have been introduced in about 29 developed and 30 developing economies (REN21, 2012). In Africa for example, Uganda, Tanzania and Kenya have adopted FITPs and Ghana recently passed a Renewable Energy Law.

¹⁸ This proposal focuses mainly on renewable energy and energy efficiency for the provision of electricity services (including grid-connected, distributed generation and off-grid solutions) as defined by the SE4ALL Global Tracking Framework (www.worldbank.org/se4all).

¹⁹ Although not all policies explicitly target “sustainable” energy, this tool encourages renewable energy where this contributes to overall sustainable development, taking into account all three pillars of sustainability—environmental, economic, and social.

²⁰ See Elizondo and Barroso (2012), World Bank (2012), Hefner et al. (2013), ESMAP (2011) and IEA (2011b) for a detailed classification and definition of economic, market-based, fiscal and financial incentives introduced to support renewable energy and energy efficiency.

Also, quantity based mechanisms -most notably auctions- are increasingly being used to introduce RE quotas, especially in the most developed economies, including emerging nations.²¹ The use of renewable portfolio standards (RPS) and RE certificate markets have been less common in the developing world, although a few middle income countries including Poland, India and Philippines have subscribed to this approach.

Indeed, many developing countries already have a long track record with the implementation of - increasingly sophisticated- policy packages to support renewables. For instance, the Indian policy framework that supports the National Solar Mission is characterized by a complex mix of price and quantity setting instruments that include renewable energy certificates, feed-in tariffs, generation-based incentives, auctions and a set of complementary fiscal and financial incentives.

In LDCs, where the institutional capacity and conditions for market mechanisms is limited, other policy measures and instruments to support grid and off-grid renewables have been adopted; for example these include transitional direct public support and the use of standardized long term contracts along with measures to strengthen power market structures and institutional capacity such as in Tanzania and Sri Lanka (OECD, 2013b; OECD, 2012; IEA, 2010; IEA, 2012a and 2012b; IEA, 2011a; REN21, 2012, Tenenbaum, 2013).

Most recently, low income countries have started to test ad-hoc schemes where FITPs are complemented with concessional finance and risk mitigation instruments –such as partial risk guarantees- to support a portfolio of feasible renewable energy projects (for example, the GET-FIT approach being piloted in Uganda, Deutsche Bank, 2011).

In EE similar trends are starting to emerge, with the introduction of targets, standard offers, white certificates, competitive procurement of load reductions, performance based contracts and other targeted measures (ESMAP 2011, Maurer, 2012, Heffner et al., 2013). Many countries have tested different incentives and progressed substantially in terms of cumulative energy savings over the last twenty years through a variety of measures (World Bank, ESMAP, IEA, 2013; IEA 2011b). Policies on trade and standards have been particularly effective as is evident in Ghana with efficient appliances and lighting; also standard offers have been effective in South Africa.

Assessment

The introduction of effective and economically efficient policy regimes in support of sustainable energy have multiple economic, social and environmental benefits, including:

Economic Implications:

- Cost savings from the avoidance of higher-than-required renewable energy subsidies
- Cost savings associated with enhanced energy security
- Lower costs to the system and consumers through supply and demand side energy efficiency, lower productions costs due to resource and seasonal complementarities between energy options, and other.
- Policies that are coordinated across sectors enhance resource use efficiency (for example, efficiencies realized through synergies with the water/agriculture/transport sectors)
- Effective and efficient policy packages leverage private investment

²¹ In most cases, price and quantity-setting policy instruments have included purchase obligations, priority dispatch and guaranteed access to the grid, and introduced in combination with fiscal and financial incentives.

- Poverty reduction/development benefits associated with jobs and employment through value chains

Social Implications:

- Renewable energy represents a competitive energy access option for the poor in mini-grid and off-grid markets under specific circumstances (lack of clean fuels, high fuel prices, etc.)
- Renewable energy enhance rural development opportunities (for example, bringing power to schools and hospitals in isolated communities, facilitating development of productive activities)
- Health benefits from electricity access
- Job creation potential
- Energy efficiency and quality supply of energy and the right quantity of energy service

Environmental Implications:

- Carbon emission reductions
- Resource use efficiency (for example, through seasonal complementarities between wind, hydro, solar resources)
- Reduced local air and water pollution and land degradation
- Reduced degradation of natural resources from traditional biomass energy harvesting

Good Practice

In renewable energy, policy and regulatory frameworks have been repeatedly reformed and adjusted. For example, almost all countries using feed-in tariffs (FITs) to promote one or many segments of the renewable energy market— different types of technologies, project scales, or geographic areas— have successively adjusted the tariff levels to avoid high infra-marginal rents and policy costs or subsidy volumes (Elizondo and Barroso, 2012, Jacobs, 2013). However, retroactive changes to FITs and other support policies have negatively impacted the renewable energy sector and levels of investment, as in the case of Spain with FITs applying to solar photovoltaic initiatives (Kaminker et al, 2012). In this process, countries have learned how to introduce automatic adjustment mechanisms and other design features to ensure that the cost to taxpayers or consumers is acceptable while also lowering regulatory uncertainty for potential investors.

The design of auction mechanisms to competitively determine the price of RE has also required adjustments to avoid collusive or entry-detering behavior and to guarantee the construction of plants (for example, bid bonds, guarantees on project completion, penalties on construction delays, and so on).

Ultimately, it is clear that a policy package needs to be not only effective -in terms of its ability to trigger renewable source based capacity additions and electricity savings- but also economically efficient, that is, delivered at the lowest possible cost while being sustainable considering the range of existing risks as well as the development priorities of a particular country (IEA, 2011a; Blyth and Heptonstall, 2010; Della Croce et al, 2011; Kennedy and Corfee-Morlot, 2013; OECD, 2013a; OECD 2012; IEA, 2012c).

The design of effective and efficient policy frameworks to support sustainable energy must consider a range of complex issues, for example:

Policy choice: the choice of policy and regulatory instruments must be consistent with the characteristic of the system/market, institutional capacities, as well as overall investment climate.

Policy interactions and compatibility: the coexistence of policy and regulatory instruments has the potential to result in complex interactions and unintended effects which can occur with electricity sector's market rules and policies, but also with the wider set of policies introduced by other sectors (for example, interactions between developmental priorities and sustainable energy policies, carbon and green certificates markets, fiscal incentives and RE targets, or between innovation and market development policies).

Coordination of policies across sectors/sub-sectors/levels of government: Policy objectives and incentives should be coordinated across sectors and sub-sectors to enhance synergies, avoid overlapping and excessive policy costs or subsidy volumes (for example, between RE and EE, or between climate change and energy security objectives).²² The design of policy instruments needs to be construed as interacting with national energy and non-energy policies in a dynamic context (UNEP, 2012). There is also a need to recognize the increasing role played by cities and (sub-national) regions in RE and EE policy and delivery. A key to enabling action is to align national and local policies and goals.

Policy sequencing: Policies to support sustainable energy can be introduced in phases depending on the characteristics of the system such as resource endowments, market structure and size, conditions of the grid, tariff policies, demand growth, maturity of the financial sector, and other types of institutional capacity and other. For instance, many countries are now using competitive biddings or auctions as a benchmark mechanism to set feed-in tariff levels before a feed-in tariff policy is introduced; however auctions are sophisticated and require certain level of administrative and regulatory capacity as well as high market volumes or quotas. Another important example is the need to align transmission infrastructure strengthening with RE scale up, taking into consideration potential energy savings or megawatts.

Sustainability of incremental cost recovery mechanisms: fiscal transfers or surcharges to consumer tariffs need to be transparent, efficient, sustainable, time bound and limited in scope. Indeed, policies in support of RE and EE can only be effective when off-takers (state-owned utilities, Discos, energy traders) maintain a sustainable financial balance.

Efficiency of Economic Policy: Price and quota based instruments need to be designed based on solid economic analyses of the power system and market. Quantitative economic analysis (such as a supply curve) reveals the need and size of a potential subsidy (for a given target) and allows the evaluation of strategies to minimize infra-marginal rents.

Business Environment: The conditions of the business environment determine to a large extent the effectiveness of RE and EE policy and associated transaction costs. For example, institutional capacity for planning sustainable energy, existence of legal provisions allowing private sector participation, efficient regulatory processes and approvals, investment-grade policy (transparent, clear, long-termed), access to the grid and other.

Monitoring and Evaluation: which is needed to assess performance and create the feedback loop into the design of policies.

A few specific considerations apply to LDCs; for example policies that promote sustainable energy would need to i) be firmly anchored into national and regional development plans as well as sector level strategies, ii) be part of a broader national long term infrastructure development strategy, iii) be part of a long term integrated resource and least cost planning (that considers regional dynamics as well as

²² In the buildings sector, introducing renewable energy heating and cooling and distributed power generation should be considered in tandem with energy efficiency measures, as combining both options creates synergies in terms of energy security.

energy access strategies), iv) be compatible with the conditions of the economy, business environment, electricity market, governance performance, and institutional, administrative and monitoring capacity, v) consider the inter-linkages and synergies between renewable energy, energy efficiency and energy access, as highlighted by the SE4ALL Global Tracking Framework, and vi) be customized in tandem with available financial and de-risking instruments (including concessional) to effectively leverage private sector participation, where desirable and feasible.

Guidance

A few guidelines have recently emerged on how to follow best practice in the design of FITPs (UNEP 2012a, Klein et al., 2008, IEA, 2008), auctions (Maurer and Barroso, 2011) and RE policy in general focusing mainly on the conditions and specific challenges of emerging and developed economies (IEA, 2011, Elizondo and Barroso 2012, OECD, 2013a and 2013b). There are also a few guidelines discussing the experience and best practice in the design and implementation of EE policies (IEA 2011b, ESMAP 2011, Maurer, 2012, Heffner et al., 2013).

In addition, the specific experience of countries with the most progressive and stable policy environments that exhibit best practice in catalyzing investments in RE and EE has been reported widely across the literature.

Moreover, the OECD and the World Bank have undertaken work on sustainable energy investment in the context of the G20 Study Group on Financing for Investment, including on a new Policy Guidance for Investment in Clean Energy Infrastructure (OECD, 2013a). This Guidance draws on the experience of developed and developing countries alike to help host-governments design measures aimed at enhancing clean energy investment in a broad range of policy areas.

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