



Finance for the Transition to a Green Economy in the Context of Sustainable Development and Poverty Eradication

1. Introduction

A green economy in the context of sustainable development and poverty eradication (hereafter *green economy*) requires major structural and technological changes in key sectors such as infrastructure, industry, agriculture and transportation.¹ Near-term investments in all these sectors must be financed for long-term sustainable development. This Issues Brief provides a picture of current and required financial flows for the transition with a focus on identifying major gaps in finance. The Brief outlines proposals for finance including those from the Rio + 20 Compilation text and where possible attempts to convey their feasibility and potential. It suggests that the transition will require the identification of new sources, the streamlining of existing channels and the effective design and utilisation of instruments to leverage private investment.

2. Current Financial Landscape and Gaps

A complete picture of financial flows that currently support the transition in developing countries is beyond the scope of the current brief. Nonetheless, it is possible to present a conceptual picture of the structure of financial flows and provide some estimates for certain types of flows based on readily available data. This is provided in the schematic below (Figure I). The schematic describes financial flows by utilising the following characterisation:

- I. Sources: the origin of financial flows: public (green), mixed (yellow) and private (red)
- II. Channels: the main routes or intermediaries (purple) through which public and private funds flow
- III. Instruments: the financial products and policy mechanisms via which finance is delivered or supported (grey)
- IV. Major uses: the main sectors (blue) which require sustainable development finance.

Note that different estimates are more or less relevant for the green economy transition. For example, estimates of Official Development Assistance (ODA) provided specifically

for environmental purposes are highly relevant, whereas it is unclear what proportion of Foreign Direct Investment (FDI) is targeted towards green economy investments. Nonetheless, the schematic provides some guidance on the relative size of existing and potential financial flows.

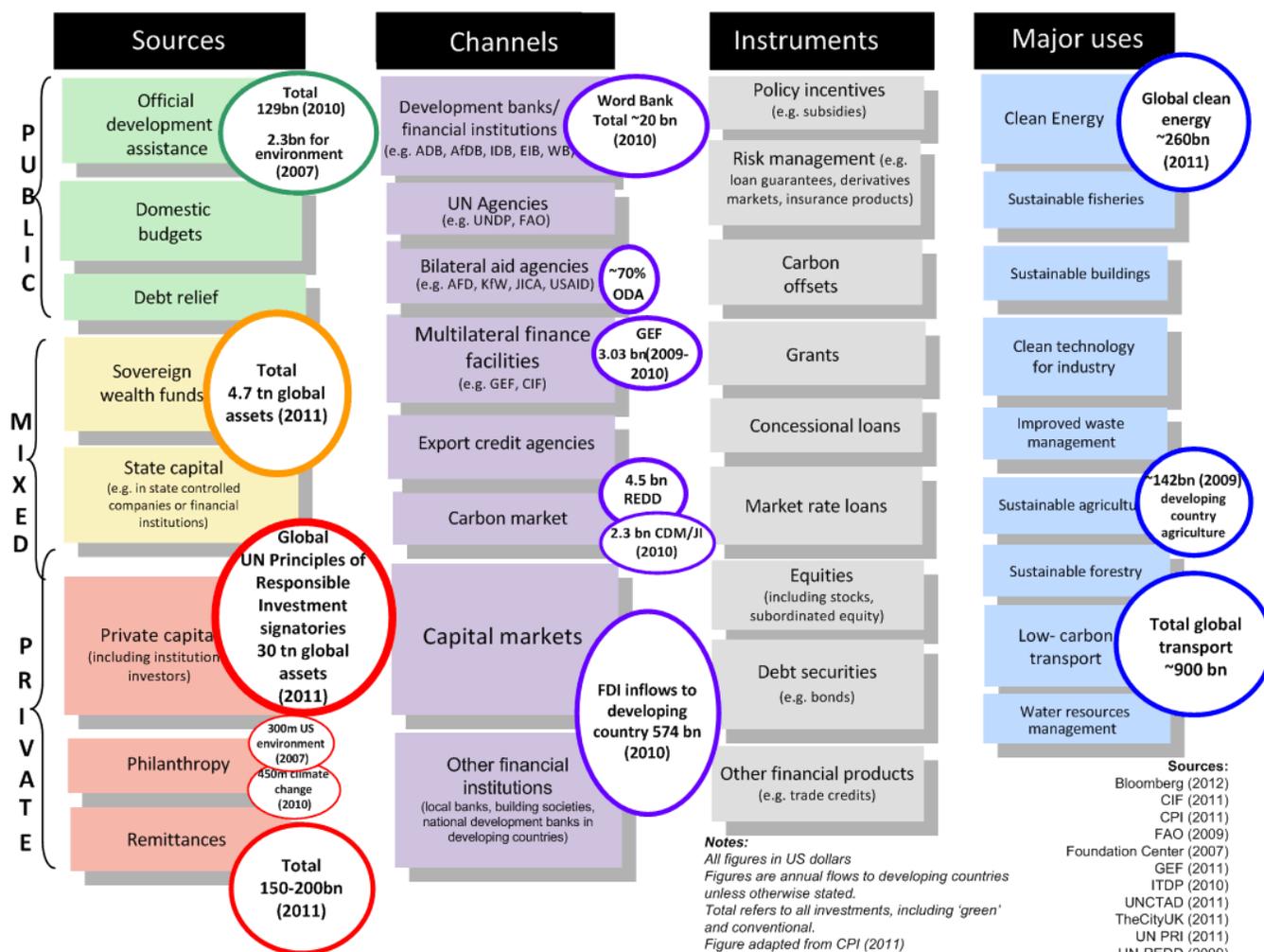
Currently the most significant sources of financial flows from developed to developing countries are private capital, remittances and ODA. FDI clearly dwarfs other channels of international financial flows. This is consistent with a recent Climate Policy Institute (CPI, 2011) report which found that, in the case of climate finance, 75% currently comes from private sources, with the remaining 25% coming from public sources. More recently, sovereign wealth funds and other forms of state controlled capital have become important sources (the figure indicates only the size of assets held by these groups, not that this amount is directed into green economy investments). Domestic budgets also remain a very important source, but the need for supplementary resources continues.

Two major financial commitments have been made for flows from developed to developing countries. These are firstly the agreement reiterated in the Monterrey Consensus outcome that 0.7% of donor country gross national product (GNP) be provided in ODA to developing countries with 0.15-0.2% to least developed countries. A few donor countries have honoured this but to date these targets have not been met by many. Secondly, the Copenhagen Accord commits to the provision of \$100bn per annum in climate finance for developing countries by 2020. The commitment does not stipulate a particular source for these flows. Notable climate finance mechanisms in the schematic include the Clean Development Mechanism (CDM), Joint Implementation Initiative (JI) and Reducing Emissions from Deforestation and Forest Degradation (REDD). The Global Environment Facility (GEF) and the Climate Investment Funds (CIF) are finance facilities that support the implementation of major multilateral environmental agreements.

A range of estimates on the total financial flows *required* for a transition are also available. Estimates of the additional costs above business-as-usual for developing countries are summarised below in Table I.

¹ Given the limited space, finance for social protection, health and education is beyond the scope of the current brief.

Figure I: Finance Flows for Sustainable Development*



*Full references for sources available upon request.

Major sectors of investment for climate change mitigation (and percentages of required investments adopted in the UNEP Green Economy Modelling) have been identified as clean transport (16-17 %), green buildings (10%) and clean energy (energy supply 15-26%) (McKinsey & Co., 2009 and UNEP, 2011). Other major sectors of investment include sustainable agriculture (8-10%), water resources management (8-10%), waste management (8-10%), and sustainable fisheries (8-10%) and forestry (2-3%) as well as habitat conservation and restoration and energy efficiency. The most well-established estimates relate to climate change mitigation and, in particular, energy infrastructure consistent with mitigation scenarios.

In addition to providing information on the type and scale of financial flows relevant and needed for a green economy, Figure I and Table I are intended to draw attention to key issues in the finance supply chain. Firstly, the flows from current sources are clearly insufficient to meet the requirements. The estimates in Table I (on the

order of a USD 1 trillion per annum) are clearly an order of magnitude greater than any current flows directed to sustainable development. Total FDI to developing countries (USD 574 billion) is the largest flow recorded in Figure 1, yet even this figure represents only about 50 per cent of the estimated requirements. Given the scale and nature of the investments required, a mixture of private and public, and domestic and international financial sources, innovative channels and instruments will be needed.

Secondly, there are a number of channels for finance undertaking similar functions. Thirdly, the insufficiency of current flows gives rise to a greater need to target existing flows effectively. This raises a question regarding the appropriateness of the current mix of channels for public flows and the instruments that they utilise. The proliferation of *channels* for public finance is not necessarily the most effective means of improving financial flows. The proliferation of public channels could result in lower administrative efficiencies, greater duplication, and higher transaction costs.

Table I: New Financing Needs Associated with a Green Economy Transition

Source	Estimate	Coverage	Caveats
DESA, UN, World Economic and Social Survey, pp. 173-175 (WESS) (2011)	USD 1.1 trillion per annum over 2000-2050	Incremental investment to achieve sustainable development targets, in developing countries.	<p>Study assumes that 60% of global expenditure requirements are in developing countries. Global estimates based on results of a range of studies. Assumed targets in sectors covered by the estimates are:</p> <ul style="list-style-type: none"> • Energy supply and end use efficiency to stabilise greenhouse gas concentrations to < 2° C (with at least 50% probability) • Adaptation: minimum investments in securing livelihoods, assuming successful mitigation. • Agriculture and food: increasing agricultural yields to ensure global food security without further expanding agricultural land (developing country only). <p>Does not include estimates for other major uses such as sustainable freshwater management, forestry, fisheries etc.</p>
UNEP, Green Economy Report (2011)	1.2% global GDP per annum over 2000-2050 (~\$0.78 trillion in 2010)	Additional investments in “green economy” in developing countries per annum over 2000-2050	Based on modelling undertaken for UNEP. Green Economy scenarios are based on different estimated levels of green investment to meet sectoral targets across energy, manufacturing, transport, buildings, waste, agriculture, fisheries, water and forests. These are contrasted to business-as-usual scenarios with varying levels of investment made according to existing investment patterns. The estimates assume an increased investment of 2% <i>global</i> GDP (USD 1.3 tn in 2010). The 60% assumption from UN WESS has been applied to estimate developing country investment figure.

¹ The sectoral percentages are referred to in the text above

Issues on proliferation are unlikely to be addressed in the near term. Nevertheless, there is an urgent need of better collaboration among *channels* for enhancing efficiency. Unlocking new *sources* of financial flows will require more than the creation of new *channels*. Finally, the design and use of *instruments* to target major uses is potentially the most crucial and weakest link in the chain and yet receives the least attention in international negotiations. Such instruments are crucial firstly in delivering public money effectively and secondly in leveraging private flows.

3. Finance Proposals for Rio +20

The overall policy environment will determine what incentives there are to invest sustainably and which entities bear the costs. A policy environment that emphasises regulation attributes a larger portion of the direct economic costs to the private sector (including corporations and consumers). Instruments such as taxes and subsidies and other risk sharing mechanisms require more of public finances (and hence taxpayers). In reality a range of sources, channels and instruments will be

required to finance the global transition and meet the new financing needs of developing countries identified in Table I.

In order to inform and stimulate discussion, this section first draws attention to the main instruments available for private sector leverage. It then compiles current proposals on finance for sustainable development. The aim is to enable negotiators to assess the proposals articulated in the Rio+20 Compilation text from a practical and operational perspective.

As evidenced by the current pattern of climate finance, and the available resources indicated in Figure I, the vast bulk of finance will likely come from the private sector. This suggests that public sources should be used in part to strategically steer and leverage private sector finance (UNGSP, 2012). There are two main processes for doing so. Firstly, that pursued by the major multilateral development banks: the issuance of bonds to finance development activities backed by their own financial strength and credibility (accessing private *sources* to be channelled through bank operations). The UN Secretary General’s High-Level Advisory Group on Climate Change

Financing (UNHLGCCF 2011) has suggested that, for every USD 10 billion in additional resources, multilateral development banks can deliver USD 30-40 billion in gross capital flows. Bonds can also feasibly be issued by a range of other organisations and projects capable of demonstrating a secure revenue stream. Secondly, public funds can leverage private investment by addressing specific barriers to project finance. This requires accurate identification of sector and economy specific barriers and the use of appropriate *instruments* to target them. For least developed countries and fragile states, financing gaps would be mainly filled by ODA, rather than private capital, while private flows may play more important roles in fast-growing developing economies.

Private financiers evaluate projects based on their risk and time adjusted returns. Leveraging private investment involves boosting returns (i.e. subsidising), reducing risk (i.e. improving the chances of private returns), altering payback periods (i.e. bringing forward returns) or co-investing (i.e. reducing the volume of finance required). The use of subsidies and co-investment is well established. More recently, the potential for public flows to mitigate or remove risk from private financiers has been recognised and adopted by specialist institutions such as multilateral development banks. The main financial instruments to leverage private funds that address specific risk barriers (also referred to as credit enhancement) are contained in Box I.

In evaluating the variety of instruments that can be utilised to finance green economy investments, including those outlined in Box I, a number of factors are at play. Investment projects in different sectors and countries have different characteristics including risks, returns, cost profiles, financial infrastructure and supply chains. Different investments therefore have different finance needs and face different financial and other barriers. Effective finance to leverage private funds will involve identification of barriers and targeted instruments designed to suit the financial needs of final investments. For example, the nature of finance required for the purposes of clean technology development and application (e.g. technical and policy risk) is likely to be very different from the type of finance required for water reticulation infrastructure (e.g. inadequate risk capital, long payback periods). Similarly, the finance barriers facing small-medium enterprises (SMEs) (e.g. lack of collateral) vary from those of state owned enterprise (e.g. policy risk).

Box I. Risk Instruments to Leverage Private Investment

Loan guarantees: a credible institution provides a guarantee to repay debt in case of default; this enables borrowers to access lower interest rates than otherwise. Can be used to address a range of economy wide and project specific risks.

Policy insurance and investment treaties: developed countries or other institutions specifically provide insurance products to guard against the risk that returns to investments suffer from a change in policy (policy and political risk).

Foreign exchange liquidity: provide liquidity to assist in managing exchange rate fluctuations for debt denominated in foreign currency. Reduces risk to domestic borrowers unable to access debt in local currency.

Subordinated debt and equity: equity and debt holders agree to receive lowest priority for returns from projects (equity) or repayment of loans (debt). This helps to increase the volume of risk capital available to highly risky projects.

Brokerage: an intermediary aggregates or packages projects for equity investors (predominantly institutional investors); could take the form of a pledge fund or securitisation. Suited to overcoming high transaction costs or lack of credit access in small projects with low risk (pledge fund) or large infrastructure projects with inadequate risk capital (securitisation).

Source: Caperton (2010), Liebreich (2011), Mor & Sehrawat (2006).

As noted, a range of sources, channels and instruments will be required to meet the financing needs identified in Table I. Table II contains an extensive but not exhaustive list of proposals for finance across the supply chain. It utilises the structure (identified via the colour scheme) of financial flows illustrated above to describe proposals for sources, channels and instruments. It also includes a range of proposals that have been grouped as 'general or regulatory' and do not fit the characterisation developed above but are a crucial part of the enabling environment for finance. Where feasible, revenue estimates have been provided for new sources. Analysis on technical and implementation issues has also been outlined and support from stakeholders² noted.

² This column is indicative only and is to be taken as a general indication of support for the proposals amongst stakeholders; it is not an exhaustive list.

Table II: Finance Proposals for Rio +20

Type	Proposal	Description	Comment	Stakeholder support
Source	Reprioritisation of resources	Reprioritise available public resources to focus on sustainable development.	Total tax revenue in low-middle income countries in 2008 was approximately 2.4 tn, reprioritising 1% would deliver USD 24bn (World Bank, 2012).	G77 + China
	ODA commitments	Developed countries to re-commit to provision of ODA in line with Monterrey Consensus and establish clear and transparent timetables within national budget allocations.	In 2010, ODA from DAC countries represented 0.32% of GNI (OECD, 2012). Meeting the target of 0.7% GNI would deliver approximately USD 150bn additional flows from DAC countries.	G77 + China, Indonesia, Egypt
	Currency tax or broadly financial transaction tax	Tax on specific currencies or financial transactions. Suggestions that such a tax could be introduced in a voluntary and gradual manner and proceeds used to build a <i>Sustainable Development Fund</i> (Channel). Suggested rates include 0.05%, 0.005%.	Could use existing channel. Proposal has struggled to gain acceptability and has implementation issues (including rates, incidence). Evidence on revenue potential and effects on financial markets is mixed (including volatility and efficiency). Estimates of revenue: USD 2bn-USD 27bn (UNHLGCCF, 2011). Source likely to be directed through national budgets. Further analysis of implementation issues and financial market effects advisable.	Bolivia, Ecuador, Mexico, ESCAP, UNDP, EESC, Collectif Rio+20, An Taisce, Club de Madrid
	Levy on international transport	Taxation on aviation/shipping could be on carbon, fuel or based on passenger numbers or cargo.	Potential for trade concerns and incidence or impacts on developing economies heavily reliant on tourism or shipping should be further analysed. Revenue potential of USD 12bn (aviation) and USD 26bn (shipping) with USD 25 per tonne carbon price. Would require strong international cooperation.	EU
	Carbon tax	Economy wide, systematic taxation of carbon emissions.	Constant income flow; low monitoring and admin costs. Higher energy prices may be regressive. Financial support for energy efficiency and other complementary measures could compensate poor households. May result in industry relocation if tax not uniform across economies. USD 10bn (UN HLGCCF, 2011) revenue potential for USD 1/tonne tax.	Montenegro, Club de Madrid, An Taisce, Canadian Earth Summit Coalition
	Environmental taxes and pollution charges, ecological tax reforms	Introduce pigovian taxation or externality pricing on specific pollutants such as nitrogen.	Polluters pay, effectively reduce the amount of pollution and generate income flow but may have high monitoring and admin costs. Potential welfare losses of low-income workers in resource-intensive sectors. Targeted compensation and vocational education and training for alternative skills could ameliorate. Most likely to be feasible in middle-high income countries.	Albania, Ghana, India, Philippines, World Bank, ILO.
	Oil sales tax	Also known as Daly-Correa tax: tax of 3% on exports of oil to developed countries administered by OPEC.	Because of the relatively inelastic nature of demand for petrol in the short run, tax will be an effective short run source of revenue. Taxes on oil sales have been advocated as a way to reduce pollution and conserve energy with more elastic long run demand (reducing revenue potential). Further analysis to understand potential impacts to the poor would be required.	Ecuador
	Debt relief	Examine options for further foreign debt restructuring and debt resolution through the issue of a special bond.	A potential option to free up national resources for green economy investments. Opponents of debt relief argue that it is a blank cheque to governments, and fear savings will not be used productively.	G77 + China
	Special Drawing Rights (SDRs)	The IMF could issue sustainable development SDRs (supplementary foreign asset reserves maintained by the IMF) or developed economies could voluntarily transfer their SDRs to developing countries.	SDRs act as a claim to currency held by IMF members and a cheaper reserve asset than holding foreign currency. Agreement on the allocation and change in purpose of SDRs would need to be sought. Estimated injection of USD 27bn considered feasible (Wade, 2002) prior to 2009 and 2011 SDR issuances.	Ecuador, Club de Madrid
	Solidarity levies or contributions	Establish voluntary mechanisms: a global lottery; a premium bond (similar to a lottery however participants retain ticket cost); voluntary levies on products or services. Or compulsory levies: such as on international air travel or cigarette sales.	Lotteries are effective at generating revenue. Viability of a global lottery may be more limited given heavy regulation. Solidarity levies on international air travel have been implemented by some countries with revenues directed to UNITAID. A solidarity levy on tobacco sales of USD 0.05 per pack in G20 countries could raise USD 3.1bn , levies of USD 0.03 and 0.01 in upper middle and middle income countries generating USD 2.4bn (WHO, 2011).	Japan, See Addison & Chaudry (2005) and UNDP (2012)
	Next generation tax	Proposal may refer to inheritance and wealth taxes.	Further detail on proposed taxes would be required. Inheritance and wealth taxes exist but can be unpopular and difficult to implement. Revenue potential will depend on rate, incidence and ease of avoidance/evasion.	Japan
Reduce or eliminate distortionary subsidies	Remove or reduce existing subsidies for fossil fuels and fisheries that have negative effects on biodiversity and climate change.	Removal of subsidies relatively simple way to shift away from environmentally damaging activities and free up domestic budgets. If action not undertaken globally might divert some industries offshore. The IEA (2010) estimated that fossil fuel consumption subsidies were approximately USD 409bn in 2010.	EU, Grenada, New Zealand, Singapore	

Type	Proposal	Description	Comment	Stakeholder support
Source	Sovereign wealth fund or other state capital	Using sovereign wealth funds to finance sustainable investment.	Assets under management of sovereign wealth funds increased to USD 4.7tn in July 2011. There was an additional USD 6.8tn held in other sovereign investment vehicles, such as pension reserve funds, development funds and state-owned corporations' funds (Economist, 2012). There is strong potential to invest these assets in accordance with sustainability objectives. Governments can authorize the decision-making bodies of these funds to introduce binding sustainability criteria or objectives and targets to guide investment.	Global Policy Forum Europe, Stakeholder Forum for a Sustainable Future;
	Emissions trading schemes	Expand existing or introduce new carbon emissions trading schemes or other permit trading schemes for pollutants.	Greater implementation issues than carbon tax. Revenue of approximately USD 30bn p.a. for a carbon price of USD 20-50 on developed country emissions with 10% allocated to climate economy finance (UNHGCCF, 2011).	EU, Albania, Canadian Earth Summit Coalition
	ODA backed bonds, green bonds, earth bonds or other 21 st century theme bonds ³	Bond issuance by multilateral development banks (utilising existing financial strength) or other Funds, e.g. Eco 3+ bonds. Issuance could utilise long term ODA pledges from donor countries such as used by International Finance Facility for Immunization.	An increase in current bond issuance by institutions such as World Bank (leverage ratio of 3-4) is feasible (UNHGCCF, 2011). Until 2008, World Bank had raised USD 2.3 bn (UN, 2011). Other Funds such as GEF may rely on rating of ODA donors and may be less promising in current financial climate. Applicable to funding for a variety of different instruments, delivery institutions and uses.	Australia, China
	Remittances	Greater utilization of remittance flows for investment in development; lowering the cost of remittances to increase flows.	Flows may be through informal and dispersed channels; may be difficult to target and coordinate, more likely to be at a microfinance or SME level. Potential to increase issuance of diaspora bonds or create pull mechanisms. Reducing costs of remittance flows could save USD 15bn (Gates, 2011)	Nepal
Channel	Strengthen Global Environment Facility (GEF) and other funding mechanisms	Streamline and simplify GEF and other funding mechanism processes and increase quantum of contributions and disbursements. Improve communications and engagement strategies. Promote measures to improve the coordination amongst major funding channels.	GEF is a significant component of relevant multilateral finance. Recent reviews (including of the Earth Fund) indicate that strengthening and streamlining alongside the more strategic operation of its Funds (particularly regarding engagement with the private sector) could be of value. Linkages with multilateral development banks also important.	CARICOM, India, Grenada
	REDD/REDD+	Applying result based financing to reduce the emissions of greenhouse gases from deforestation and forest degradation in developing nations. REDD+ extends to conservation and sustainable forest management.	UN-REDD (2012) predicts that financial flows from REDD+ could reach up to USD 30bn pa. Where property rights are informal may infringe or exclude local communities and indigenous peoples. Further analysis would be advisable.	Liberia, Nepal, Norway, Japan, USA
	Yasuni-type Mechanism	To avoid the exploitation of fossil fuel reserves in areas of high biological sensitivity and protect significant global biodiversity on the condition that the international community compensate host country for at least half of the income that it would have received if it exploited these reserves. Donations accepted via a UNDP Trust Fund to fund sustainable development.	Debate has focused on the need for "compensation" in exchange for a moratorium on oil drilling. Inflows of international money would not necessarily result in sound and effective environmental and social policies. The argument for "compensation" may depend on certainty of development and legislative commitments. May be suited to other major natural resource conservation projects but unlikely to be suited to gradual decline of biodiversity and ecosystem services.	Ecuador
	Public-private Green Venture Fund	Establish a fund of funds that invests public money through a small number of privately managed funds to directly finance clean technology innovation and deployment including via subordinated equity and early-stage commercialization.	Attempts to fill the gap between equity demand and supply for clean technology, particularly evident in developing economies, and leverage private finance. In practice, investments are high risk. May overlap with existing channels. However specialist expertise may be more attracted to a venture fund. Potential to utilise fund-of-funds structure in existing channels.	See Nassiry and Wheeler (2011)
	New themed Technology, Infrastructure or Pledge Fund	Various roles: provide loans/grants to municipalities and local enterprise; enable technology to be accessible to developing countries at affordable prices; package small projects for institutional investors; provide risk capital or subordinated equity for long-term investments.	Could be achieved via consolidation of existing channels, potential for overlap. Potential to address gap in local government finance and SMEs finance, particularly via a Pledge Fund. Consideration of required specialisations of such a Fund and targeting of funds via instruments would be valuable.	Albania, Algeria, China, Ecuador, India, Indonesia, Pakistan, Singapore, ESCAP, Alstom

³ Also can be considered instruments.

Type	Proposal	Description	Comment	Stakeholder support
Instrument	Sector loan projects	Shifting from retail to wholesale approaches in delivering finance such as by engaging host country financial intermediaries, bundling individually small projects for financing, or sector-wide strategies.	Such loans exist, however prioritisation of such projects is feasible and may be warranted. Loans into new sectors may require further identification of existing barriers to private investment and identification that such loans, as opposed to other instruments, are the most effective intervention.	Japan
	Targeted subsidies/ tax incentives	Incentives include production tax credits (e.g. tax credit for production of renewable energy); investment tax credits (e.g. tax credit for investment of specific type); development zones (e.g. low or no tax treatment zones to encourage FDI); interest subsidies (e.g. percentage of interest subsidised for particular projects); lease subsidies (e.g. subsidised lease for certain enterprises)	May effectively leverage private resources. Draws on domestic budgets; may be suited to middle income countries. Effectiveness will depend on identification of barriers that prevent projects occurring and sound risk management practices. May have trade implications.	Japan, India
	Concessional loans	Provide long-term finance at low cost (used frequently in large-scale infrastructure projects)	Widely used for renewable energy and efficiency projects. Entity providing concessional loan can bear high risk for little/no return.	Albania, India
	Risk sharing, insurance and risk transfer instruments (see Box I)	Debt: sovereign /policy risk insurance, loan guarantees, business model or “proof of concept risk” sharing, project bond guarantees. Equity: subordinated equity	Potentially a very effective way of leveraging private capital with leveraging ratios varying from 2-10 (Caperton, 2010). The needs of projects will differ based on risks and barriers. Loan guarantees may encourage moral hazard on part of businesses and lead to excessive risk taking. Should be undertaken with sound financial and risk management by specialist agencies.	Australia, India, Alstom,
	Pull mechanisms (such as Feed-in Tariffs (FITs) or Advance Market Commitments for the climate context)	Proposals include: provision of funds for meeting certain agreed milestones and prizes for development and application of technologies. FITs specify rates for low-carbon energy supply (solar, wind, other low/no carbon) commitments bind government or utilities to purchases.	Suits green economy investments that have easily measured outcomes or inputs in which actions or outcomes can be directly attributed to a party. FITs are an effective way of removing risks for preferred industry. Successful at encouraging scale and supply-chain investment, but hard to choose right tariff, market is distorted and hard to dismantle.	Norway
	Green or sustainable procurement	Commitments by public sector agencies to formally consider environmental impacts in public procurement processes. Incentives for deployment and commercialization via public sector projects.	Public authorities have significant purchasing power. So far they are guided mostly by criteria of cost-effectiveness. A clear statement of intent to procure low impact goods and services may be effective across a range of sectors including energy, water and forestry. Requires specific and transparent criteria to be developed regarding what is considered ‘green’ or ‘sustainable’ and how this is to be incorporated into procurement processes.	Brazil, Benin, Botswana, Chile, Denmark, Grenada, Ghana, India, Israel, Kazakhstan, Mexico, Niger, Senegal, Switzerland, Togo, USA, UK,
	Trade finance, such as export credits	Credit provided to exporting companies to support liquidity and facilitate international business including prepayment, insurance, guarantees and loans.	Effective in promoting domestic industry; could be utilised to provide specific assistance to green industry (e.g. target SMEs) but at the cost of distorting the market. May conflict with international trade treaties. Could potentially increase the price of goods in the importer’s domestic market.	Alstom, Climate Action Network International, NRDC
General and Regulatory Measures: shifting capital flows	International process	Develop international processes to promote innovative and private instruments of finance	This would provide an opening to further evaluate and develop proposals for possible implementation.	EU
	Transparency	Greater transparency of institutional investors; disclosure of environmental risks; provision of registries on financial resources, technology transfer, commitments and deliveries and/or a financial tracking system.	Boost transparency of financial flows into the green economy, allow for greater policy analysis and informed policy development. Boost accountability for providers and recipients of financial resources.	G77+China, Israel, Japan, Liechtenstein, Switzerland
	Investment principles	Develop voluntary global principles for sustainable investment for global and listed enterprises, international financial institutions and institutional investors.	Aim to address a growing concern about the failure of financial markets to incorporate environmental and societal principles without a departure from their fundamental duties	Brazil, Brasileira, Japan, Fundação Liberia, ECE, PDMA,
	Capacity building and technical assistance	Proposals for specific capacity building include: enhance the absorptive capacity of developing countries; enhance capacity in developing economies to develop investment proposals for consideration by investors; develop financial literacy and risk management.	Capacity barriers include: physical (e.g. ports, roads); human (e.g. lack of skilled workers or supply chain partners); financial (e.g. lack of a formal financial sector); and organisational (e.g. lack of adequate resources to plan and implement infrastructure delivery).	OECD, Alstom

Source: Submissions to Rio+20 Zero Draft of Outcome Document by Member States and other entities; DESA, 2012

4. The Way Forward

Financing for a green economy is a broad field, encompassing a mixture of public, private and public-private finance. This Issues Brief has developed and discussed a typology of financial flows and provided a selection of estimates of current and required flows. It has outlined the main instruments to leverage private finance and presented major proposals for Rio +20 with a focus on flows to developing economies. The following **key messages** have been identified:

Sources: New financial flows (e.g. *new taxes, ODA commitments, bond issues in capital markets, redirecting subsidies and capital flows*) will be required to meet the needs of a transition. Significant proposals include: i) international financial transaction taxes; ii) long-term investments from sovereign wealth funds or other state capital; iii) expanded or new carbon emissions trading scheme or carbon taxes (including on aviation and shipping); iv) larger-scale development of the green bond markets. In addition, a range of measures to free up or extend domestic budgets (removal of subsidies, debt relief and ecological tax reform) and leverage private flows have been identified (see instruments).

Channels: There are a range of existing channels that could be extended, streamlined or consolidated before new channels are created. Proposals have been made for greater use of aggregation and securitization including through themed Technology or Infrastructure Pledge Funds or a Public-private Green Venture Funds. The most significant issue is potentially how to strengthen and consolidate channels, as well as enhance synergies among channels, for international finance to minimize complexity and transaction costs, and fill financing gaps.

Instruments: No single instrument will serve as a “silver bullet”; promising instruments to leverage private investment exist, however their potential is largely unknown and metrics to evaluate them are not established. Instruments to unlock large financial flows from the private sector need to recognise both public and private interests. Investors seek to maximize risk and time adjusted returns; international public financiers favour global outcomes, and domestic policy makers seek to maximize local outcomes (AGF, 2011). Strategic use of instruments would take into consideration country and sector-specific finance needs, institutional capacity and

specialisation. A valuable contribution could be made by development finance experts in realistically assessing the leveraging power of credit enhancement and risk instruments. In this regard, the solution-based *Critical Mass Initiative* (World Economic Forum) and the *Capital Markets Climate Initiative* (UK Government) may shed some light and pioneer innovative and practical approaches for country and sector-specific finance.

General and Regulatory measures: Regulatory and incentive measures that address the greening of existing capital, will be an important part of the policy mix. Consistent public policies, stable standards and regulatory frameworks and/or legislation for corporate social responsibility and transparency can help reduce risks and engage new investor classes. From an international perspective, *significant commitments* to support policy development and capacity building in local and regional financial services in developing countries to enhance finance flows, improve the availability of local finance (e.g. reducing currency risk) and support local industrial development (e.g. improving access to finance for supply chain partners) will be required.

In sum, there is a need to review both the policy framework and the supply chain of finance and take concrete steps to streamline and strengthen it, to minimise complexity and reduce transaction costs. Despite a significant body of literature on general and innovative financing and policy mechanisms, and some pilot projects, there is a dearth of information and reliable analysis at the sectoral and country level, and many questions remain unanswered. Further research and policy deliberation in this area would assist in filling knowledge gaps and contribute to a successful transition to a green economy.

The purpose of the Rio 2012 Issues Briefs is to provide a channel for policymakers and other interested stakeholders to discuss and review issues relevant to the objective and themes of the conference, including a green economy in the context of sustainable development and poverty eradication, as well as the institutional framework for sustainable development.

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