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Who Will Pay for Sustainable Development Goals?

Addressing Development Challenges in ASEM Countries

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LIST OF ABBREVIATIONS

ASEM	Asia-Europe Meeting
CBA	Cost-benefit Analysis
DAC	Development Assistance Committee
DFI	Development Finance Institution
ETS	Emissions Trading Scheme
EC	European Commission
EP	EP
EU	European Union
FDI	Foreign Direct Investment
FTT	Financial Transactions Tax
GLOBE	Global Legislators Organisation
GNI	Gross National Income
GRI	Global Reporting Initiative
IEA	International Energy Agency
IATI	International Aid Transparency Initiative
ICESDF	Intergovernmental Committee of Experts on Sustainable Development Financing
IMF	International Monetary Fund
IUCN	International Union for Conservation of Nature
LDC	Least Developed Countries
MDGs	Millennium Development Goals
MDBs	Multilateral Development Banks
ODA	Official Development Assistance
OECD	Organisation of Economic Co-operation and Development
SDGs	Sustainable Development Goals
SEEA	System of Environmental-Economic Accounting
STI	Inter-agency task team on Science, Technology and Innovation
SWF	Sovereign Wealth Fund
TIWB	Tax Inspectors Without Borders
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNEP	United Nations Environment Programme
UN GA	United Nations General Assembly
UNTT	United Nations Task Team
VAT	Value-added tax
WBCSD	World Business Council for Sustainable Development

PREFACE

This report is the continuation of the *Sustainable Development Goals (SDGs) and Indicators for a Small Planet* initiative of the Asia-Europe Foundation (ASEF). Working under the mandate of the Asia-Europe Meeting (ASEM), the project aims to assist the development of a universal set of SDGs and their indicators. The SDGs are an ambitious set of objectives, seeking as they do, to end poverty and address almost all of the existing challenges related to sustainable development. Achieving these goals is not going to be easy and it is projected to be an expensive undertaking.

What should countries do in order to finance implementation? This paper is an attempt to answer this question. Post-2015 development financing should go beyond Overseas Development Assistance and Foreign Direct Investments and engage a variety of public and private international sources. This paper provides an overview of the post-2015 development financing landscape, explores the implications for ASEM countries, and provides ideas for reforms to national tax systems and for improving domestic development financing.

The key challenges are addressed in different thematic clusters:

- Chapter 2 provides an overview of international development financing mechanisms, showcasing a variety of sources and discussing expected future trends;
- Chapter 3 analyses the possible strategies for countries to prioritise and mobilize their national resources accordingly;
- Chapter 4 offers ideas and examples of the costs and benefits analysis for selected SDGs. In line with ASEM priorities, selected case studies and examples focus on the topics of food security, agriculture, climate change, energy and poverty and inequalities.

The findings of this research build on the Asia-Europe Environment Forum's (ENVforum) three-part "Small Planet" series on SDGs:

1) Sustainable Development Goals and Indicators for a Small Planet, Part I: Methodology and Goal Framework (Pintér et al., 2013);
2) Sustainable Development Goals and Indicators for a Small Planet, Part II: Measuring Sustainability (Pintér et al., 2014); and
3) Sustainable Development Goals and Indicators for a Small Planet – two national cases studies: Securing Means of Implementation in Viet Nam (Vu et. al., 2015) & Securing Means of Implementation in Poland (Kassenberg et al., 2015).

These studies built on existing policies and national strategic documents, such as sustainable development strategies and integrated development plans in 14 countries[1] from Asia and Europe. Their common underlying assumption is that while sustainable development progress over the last decades has been uneven and often unsatisfactory, in most cases countries seriously interested in launching a new generation of more effective sustainable development initiatives around the SDGs have a base they can build on.

To ensure that the selected goals, targets and indicators provided an overall direction for sustainable development governance, the Small Planet initiative concluded that the SDGs must fit into and be accompanied by other elements of a sustainable development governance and management framework. While such a means of implementation framework consist of a variety of elements, a well-designed and efficient financing framework will be one of the most important.

[1] Australia, Bangladesh, China, France, Germany, Hungary, India, Indonesia, Japan, Poland, Korea, Singapore, Sweden and Switzerland

KEY MESSAGES ABOUT TRANSFORMING THE FINANCING FRAMEWORK FOR THE POST-2015 DEVELOPMENT AGENDA

The 17 Sustainable Development Goals (SDGs) with 169 targets agreed during the UN Summit for the Adoption of the Post-2015 Development Agenda in September 2015 will shape the post-2015 development framework for the next 15 years. The SDGs are ambitious and set to build on the unfinished business of the Milennium Development Goals (MDGs) by transforming the world and moving it towards a sustainable path. However, if all the SDG targets are to be achieved, the world is facing a considerable investment requirement, followed by complex issues associated with the need for international agreements. The task is made especially challenging given the failure to reach a major agreement at the Third International Conference on Financing for Development held in the Ethiopian capital of Addis Ababa in July 2015.

Thus, to implement the new development agenda, the financing of the SDG implementation has to be transformative. Besides smarter and more efficient international development financing, governments need to mobilize domestic resources and attract private sources. Following the evaluation of various options for possible SDGs financing, this paper offers an overview of existing options for financing development that could be tailored to specific national contexts:

1: Given the high number of goals and targets, countries need to aim for a leaner set of SDGs focusing on selected priority parameters.

SDGs should be about setting priorities. Political leaders cannot be made accountable to manage, monitor and track 17 broad goals subdivided into 169 targets. In addition, based on sectoral assessments, the total investment cost of achieving the SDGs by 2030 ranges between USD 5 and USD 7 trillion per year at the global level and between a total of USD 3.3 and USD 4.5 trillion per year in developing countries. This implies a mid-range USD 2.5 trillion yearly SDG investment need in the latter. To have an improved understanding of the real financial demands of the SDGs, countries should prepare their own assessments at least for their priority targets.

2: Traditional OECD Development Assistance Committee (DAC) donors need to fulfil their Official Development Assistance (ODA) commitments and achieve a contribution of 0.7% of GNI in line with the Monterrey Consensus. The commitment should be gradually extended to all countries with a GNI per capita higher than USD 20,000. These two measures combined would raise an additional funding of USD 250 billion annually.

Official Development Assistance (ODA) will remain a crucial part of the post-2015 financing. Thus, traditional donors have to ensure the continuous provision of development assistance, improve the structure of provided aid, and ensure the effectiveness of aid. At the same time, emerging donor countries need to scale-up their ODA contribution up to the 0.7% level and further harmonise their activities with existing donors and development financing institutions. Both traditional and emerging donors from ASEM countries have a considerable share in providing donor assistance. The ASEM DAC donors provide more than 70% of the total net ODA, but so far, only five have fulfilled their Monterrey commitments.

3: ODA has to be “re-branded” as a catalyst to attract other sources of funding to developing countries.

Private funds for development include private loans, foreign direct investments, portfolio investments, private grants, and remittances; together with public domestic sources, they represent the bulk of development financing. Post-2015, ODA must continue to benefit the least developed and fragile economies but one of its main roles will also be to catalyse private and public sources towards these countries. Regional development financing institutions,

such as the New Development Bank and the Asian Infrastructure Investment Bank, will have an important role in promoting the latter and supporting countries in attracting private funds for development. For countries to mobilize domestic public resources for their development objectives, positive measures include better taxation, improved collection of revenues from natural resources, improved government spending, and greater efforts to tackle illicit financial flows.

4: Reduction of fuel and agricultural subsidies is one of the largest sources of additional funding for SDGs.

Reduction of fuel subsidies and the gradual elimination of harmful agricultural subsidies, are amongst the largest sources of additional funding for SDGs. For example, in low and low-middle income countries in Asia, energy subsidies can exceed up to 3% of the GDP. By cutting ineffective fuel and agricultural subsidies, by 50% and 25%, respectively, countries could mobilize a USD 395 billion fund annually. [2]

5: A tax system reform to incorporate all negative externalities would be the most efficient tool to ensure sustainable development.

As long as negative externalities are not fully valued and priced and have little impact on the budgets of public entities or the financial bottom-line of companies, all efforts towards sustainability will be dwarfed by market mechanisms. Experience has proven that realistic market pricing of natural capital assets encourages sustainable use of natural capital assets and results in decreased consumption. Environmental accounting initiatives can help promote the integration of the value of ecosystem services and natural resources into national accounts, tax systems and private sector activities.

6: Global and innovative taxes and contributions could raise development funds of USD 460–480 billion revenue annually.

Besides ODA, development taxes can offer innovative ways to raise additional revenues and at the same time address socially and environmentally harmful behaviors.

Suggestions include:[3]

- A USD 25/ton carbon pricing in OECD countries, which could raise USD 300 billion annually.
- Carbon pricing on aviation and shipping, which could raise USD 22 billion annually.
- A Financial Transaction Duty, solely imposed in the 28 member countries of the European Union, which could raise EUR 57 billion per year.
- A Currency Transaction Duty on the four major currencies, which could raise USD 40 billion yearly.
- A 1% Billionaire Tax imposed on individuals owning a minimum of 1 billion, which could raise USD 40–50 billlion annually.
- A Solidarity Air Ticket Levy of USD 6 per economy ticket and USD 62 per business/first class ticket, which could raise USD 1–10 billion annually.

7: Savings managed by Sovereign Investment Funds, Pension Funds, and Insurance companies are the largest potential pools of investment for SD. If 10% of total assets of such funds were invested toward SD activities, this would amount to an estimated investment of USD 6.43 trillion into sustainable activities.

It is estimated that primary institutional investors, such as pension funds, insurance companies, and Sovereign Wealth Funds (SWF) hold USD 64.3 trillion in total assets (UNTT, 2013). While this money is suitable for investment in long-term projects, they instead tend to be kept in liquid instruments and are rarely invested in sustainability objectives. To attract private resources, governments should ensure stable and predictable macroeconomic conditions and utilize blended financing mechanisms, beyond concessional loans. Such mechanisms may include public-private partnerships, risk/guarantee schemes, and performance-based instruments.

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[2] See Page 48 for details on the calculation.

[3] See Table 5 for details on the proposals.

8: Cost-benefit assessments can support countries in calculating the costs of different SDG targets, selecting the most cost-efficient measures and pairing the measures with necessary financing sources.

Cost-benefit analysis is a well-established method that can be used to quantify the costs and benefits of SDG targets and to compare the costs of different programmes and policy measures targeting goal implementation. However, as of today, very few evaluations exist. It makes determining a 'price' on goals challenging due to different realities of national economies that vary so widely between, and even within, countries. Existing national experience shows that the benefits of the SDG targets can exceed the costs, if the implementation measures are appropriately designed and realized. Case studies from ASEM countries, presented in Chapter 3, include experience with poverty alleviation in Viet Nam; alleviation of energy poverty in Ireland; organic farming in India and Italy; payment for ecosystem services in China; fossil fuel reforms in the Philippines and Indonesia; carbon taxation in Sweden and climate adaptation measures in the Philippines.

Once countries have a better understanding on real costs and potential benefits of implementating SDG targets, the identification of suitable financing sources (including attracting international public and private funds and mobilizing domestic resources) will also be more straightforward.

CHAPTER 1: INTERNATIONAL FINANCING FOR SDG IMPLEMENTATION

Key points of this Chapter

A transformative post-2015 international development financing framework should encompass:

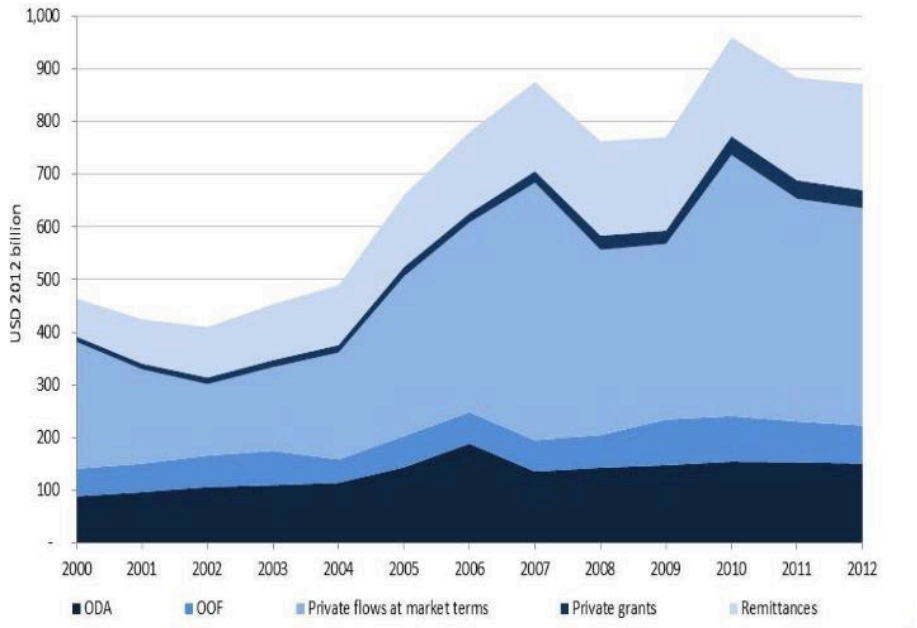
- **targeted ODA to support countries most-in-need and to mobilize non-ODA sources in middle-income countries;**
- **improved co-operation with new donor funds, such as the New Development Bank and the Asian Infrastructure Investment Bank;**
- **innovative mechanisms to better channel existing funds and raise additional public and private funds;**
- **valuation and realistic pricing of natural capital assets and ecosystem-services and their inclusion into the national accounts and private sector financial reporting.**

1.1 The landscape of international development financing

Over the last decade, the international development financing landscape has undergone major changes (UNTT, 2013; World Bank, 2013; ICESDF, 2014; Development Committee, 2015).

Development aid is no longer the main component of development financing and instead has become more diversified. Besides traditional grant financing, major types of development financing now include concessional loans (provided with favourable terms of repayment), private flows at market terms (such as non-concessional loans, Foreign Direct Investments (FDI) and Portfolio Investments), private grants and private remittances. See Figure 1.

Figure 1: Financial flows to developing countries



Source: *Development Committee, 2015*

To provide an overview of the changes in the international development financing landscape and their implications for the post-2015 financing framework, this Chapter reviews major international public financing sources, the existing flows of international private financing for development and their applicability for financing objectives in the post-2015 development agenda.

1.1.1. International Public Financing

The relative share of international public financing in overall development financing has decreased over the last decade (Development Committee, 2015). The landscape of donors and the type of provided funds have also been changing. Besides traditional donors, new donors, new ways of financing and fund distribution solutions have emerged.

1.1.1.1. Official Development Assistance

The member countries of the Development Assistance Committee of the Organisation of Economic Co-operation and Development (OECD-DAC) have provided Official Development Assistance (ODA) as a long-term, continuous financing support to low and middle-income countries since the 1970s.

Box 1: Defining Official Development Assistance

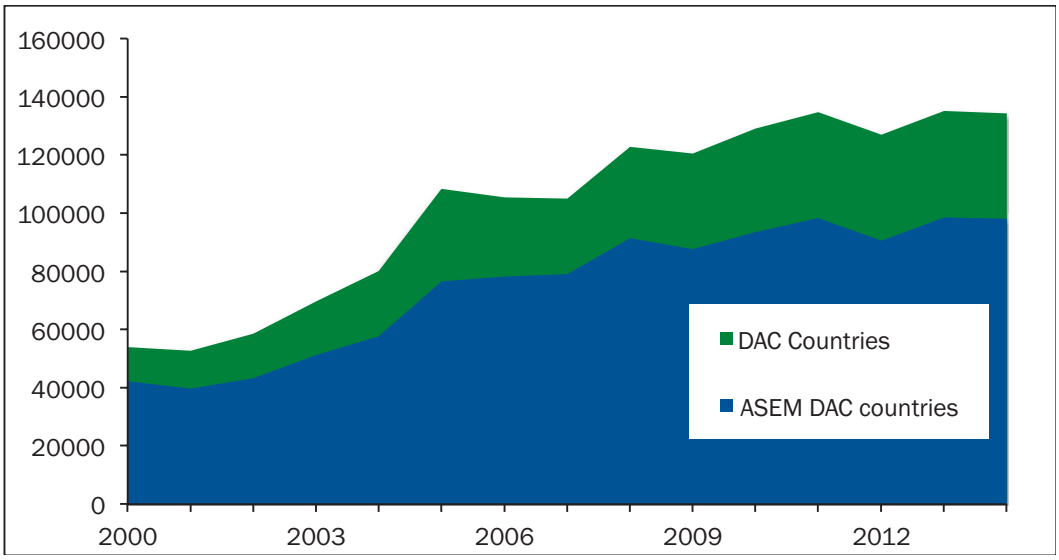
ODA in the form of grants or concessional loans aims to target poverty eradication, promote equity and tackle global challenges such as diseases and climate change. It also excludes aid provided for non-development purposes (i.e. military or peacekeeping). ODA grants and concessional loans are either provided as bilateral or multilateral contributions. Bilateral ODAs are general budget supports, core supports to national NGOs, investment projects, administrative costs and in-country expenditures, such as refugee support in donor countries. Multilateral ODAs are contributions to various multilateral institutions, including the UN, the European Union (EU), the International Development Association or Regional Development Banks.

Source: *UNTT, 2013 and OECD, 2013*

The Monterrey Consensus, signed in 2002, urged developed countries to earmark 0.7% of their Gross National Income (GNI) to developing countries (UN, 2003). The signatory countries aimed to liven up and strengthen similar commitments, which they made since the 1970s and renewed many times.

As a result, between 2000 and 2013, in absolute terms, total ODA reached the highest amount of all time in 2013 with a net USD 134.8 billion. DAC donors from ASEM countries have a considerable share in providing ODA with more than 70% of the total net ODA from ASEM-DAC donors.

Figure 2: ODA from DAC donors between 2004–2013: net disbursement at current prices, USD million



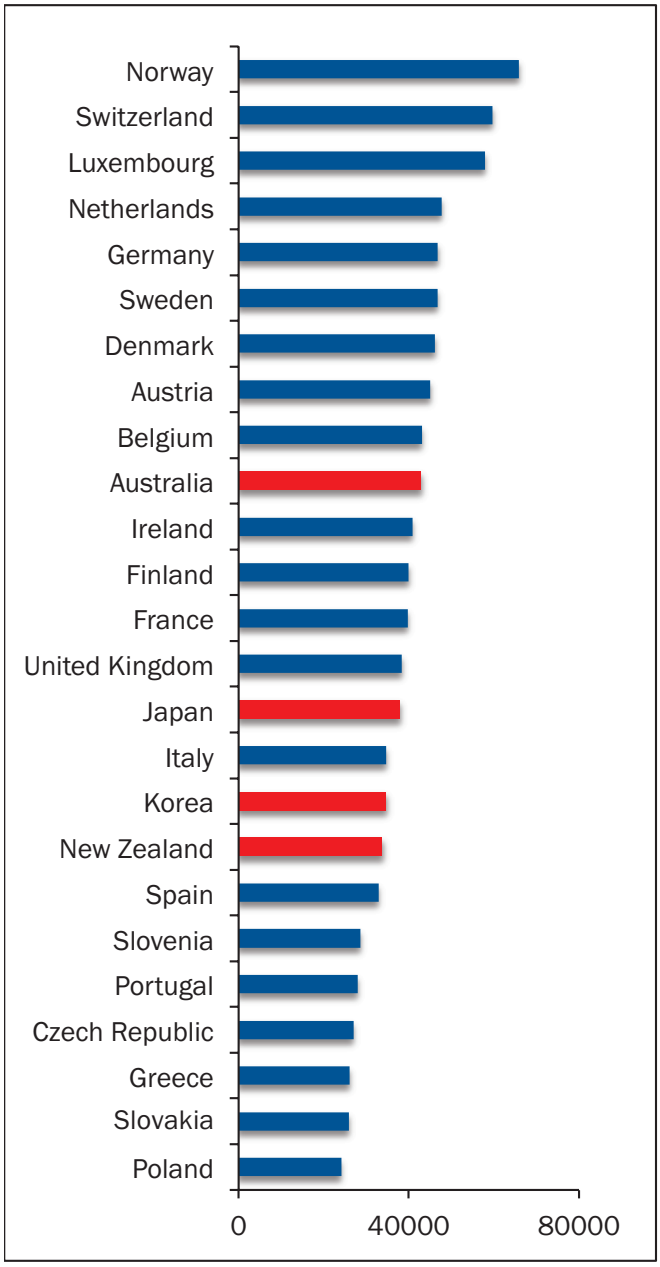
Source: *OECD DCD-DAC, 2015*[4]

In spite of the increase, most of the DAC countries have still not reached the 0.7% GNI target. In 2014, it reached an average of 0.29%, and it is expected to stagnate until 2016 (UNTT, 2013).

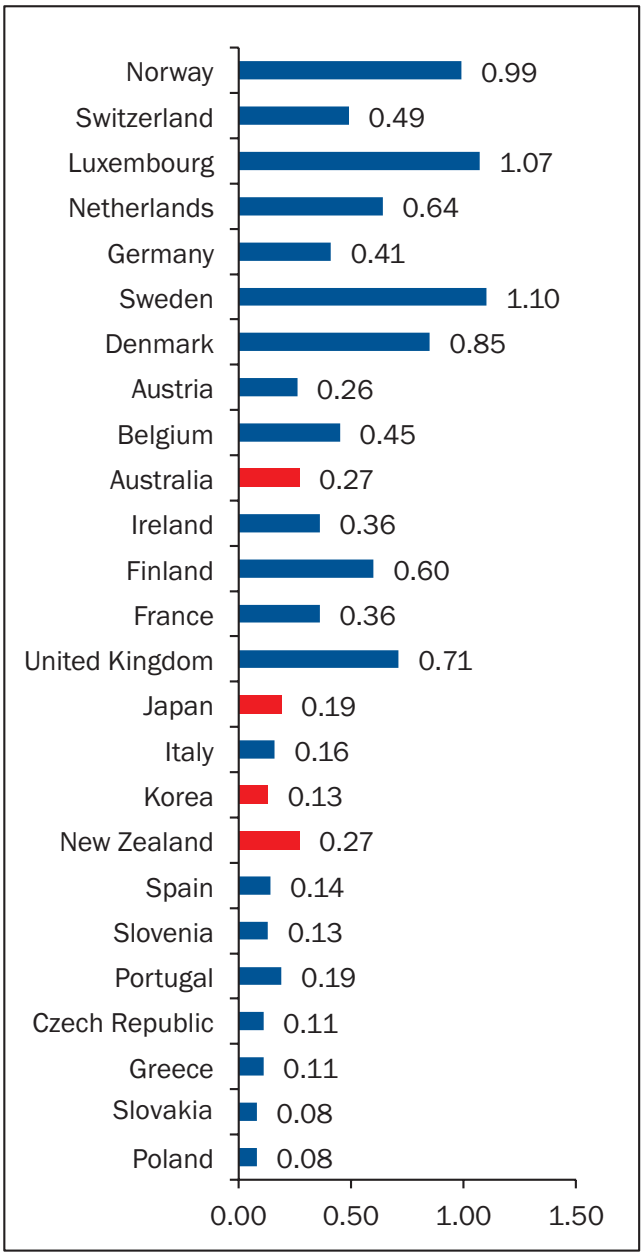
Among the ASEM-DAC countries, only five have fulfilled their commitment and some of the countries with the highest GDP per capita could do much more in terms of ODA.

[4] ASEM OECD-DAC countries include: Australia, Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Korea, Luxembourg, Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, United Kingdom

Figure 3: GNI per capita and ODA contribution of ASEM DAC countries expressed as % of GNI countries (PPP, 2014) in order of highest GNI per capita



Source: *Asia-Europe Foundation, 2014*

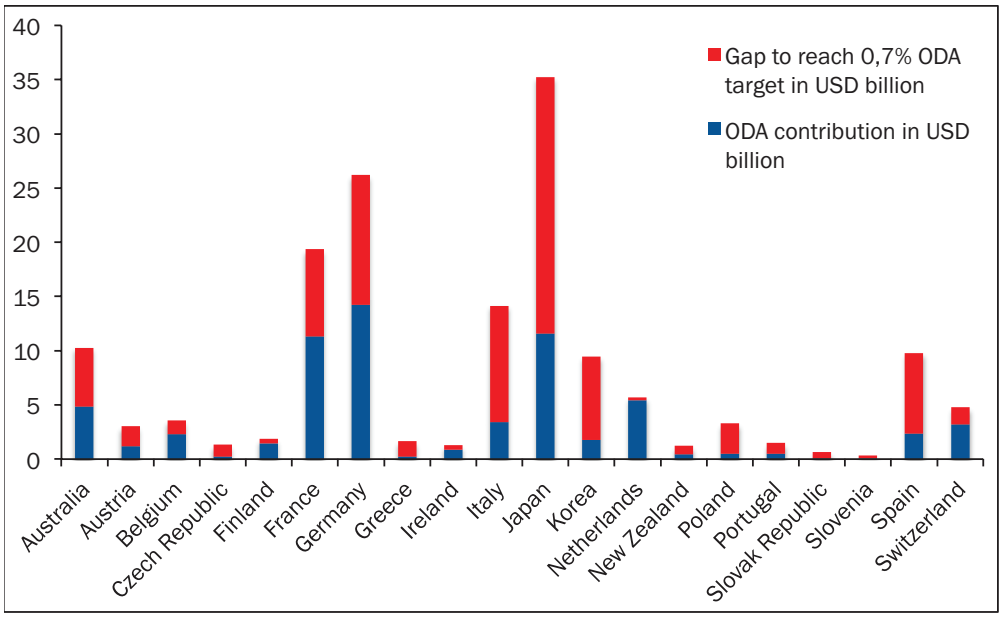


Source: *OECD DCD-DAC, 2015,*

If the fifteen highest GDP per capita ASEM DAC member countries — including Switzerland, Netherlands, Germany, Austria, Belgium, Australia, Ireland, Finland, France and Japan — scaled-up their contribution to 0,7%, they would have contributed an additional USD 59 billion to development financing in 2014. If all ASEM OECD-DAC members had fulfilled their 0.7% commitment, they would have contributed an additional USD 94.6 billion to development financing.[5]

[5] Authors' calculation, based on OECD-DCD DAC statistics for year 2014

Figure 4: Gap to reach 0.7% ODA contribution among ASEM DAC countries (USD billions)

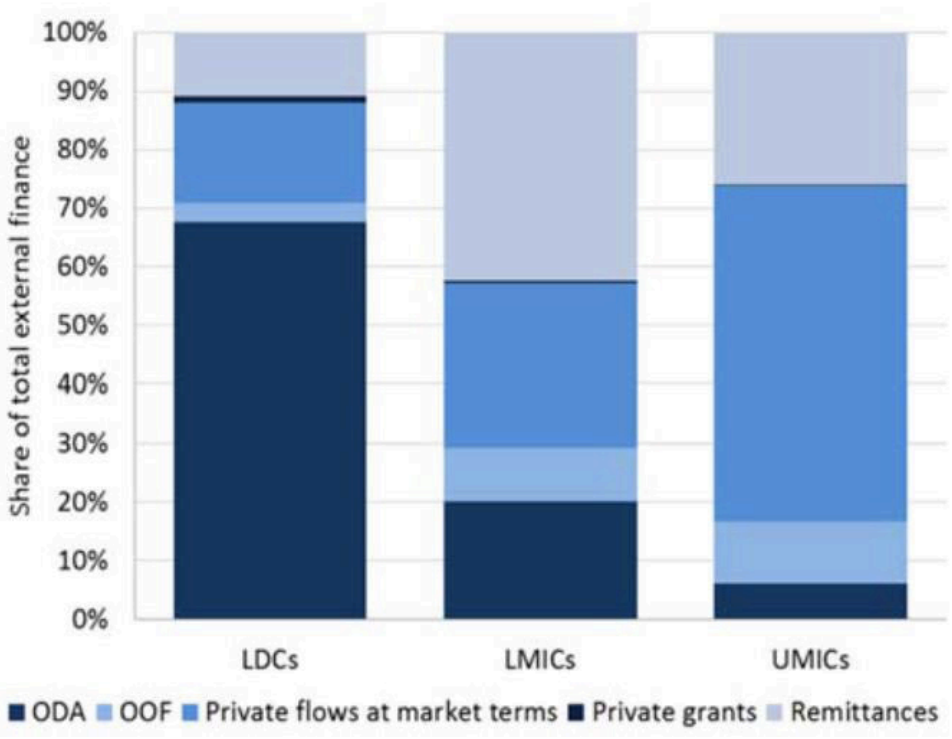


Box 2: Korea: from ODA recipient to an emerging ODA donor

An ODA recipient until 2000, the Republic of Korea became an official ODA donor in 2009 (Korea ODA, 2012). While the aid from South Korea remains below of the traditional DAC donors, it has been constantly increasing in recent years. It was 0.14% of Korea's GNI in 2012 and the country aims for 0.25% by 2015. At the same time, as an OECD-DAC member, Korea is also expected to harmonise its ODA with global development cooperation standards i.e. by increasing the grant ratio and the aid provision to LDCs (Chun, 2010). With the support of funds, Korea aims to transfer its development experiences in utilizing the ODA as a catalyst for development and for efficiently mobilizing domestic resources (OECD, 2014). For this purpose, it defined a set of priority partner countries and selected eight priority sectors for support (Korea ODA, 2012).

While the importance ODA has been gradually declining in developing countries with higher income levels, it remained crucial for Least Developed Countries (LDCs) with less than USD 500 yearly spending per person. In 2010, ODA share of low-income countries reached 25% of total available development financing, while in middle-income countries it was only 1% (EP, 2013). This signifies that in poor economies and vulnerable states, which have difficulties to ensure sufficient public domestic financing and attract private financial sources, ODA still represents a large share of total financial flows.

Figure 5: Composition of financial flows to developing countries in 2012



Source: *Development Committee, 2015*[6]

Box 3: Debt relief or debt cancelation

As part of the official ODA flows, debt relief or debt cancellation of LDCs has proven to positively impact national economic outputs, public investments and domestic revenues (EP, 2013) Two debt relief initiatives of the World Bank and the International Monetary Fund (IMF), the Heavily Indebted Poor Countries Initiative and the Multilateral Debt Relief Initiative established in 1996 and 2005 respectively, has so far supported 36 low-income countries with cancellation of over USD 110 billion in debt (World Bank, 2013). Thanks to these initiatives the overall external debt of developing countries has decreased to 22.6% of the GDP by 2013, compared to 33.5% in 2003 (UN GA, 2014) and the need for sovereign debt relief has been less and less pronounced in the last decade of development financing discourse. At the same time, to sustain these results, and address additional emerging problems, such as the 2008/2009 financial crisis situations in developed countries, the UN called for a new global initiative (EP, 2013 and UNTT, 2013b).

[6] OOFs stand for Other Financial Flows Transactions by the official sector with countries on the List of Aid Recipients, which do not meet the conditions for eligibility as Official Development Assistance or Official Aid, either because they are not primarily aimed at development, or because they have a Grant Element of less than 25%. Source Publication: Glossary of Key Terms and Concepts. From the "Development Co-operation Report: Efforts and Policies of Members of the Development Assistance Committee". http://www.oecd.org/dac/peer-reviews/35051857.pdf

1.1.1.2. Development assistance from other donors

Besides long-term OECD donors, development financial flows from other (non-DAC) donors have been on the rise in the last decade.

Box 4: Donor countries beyond DAC members

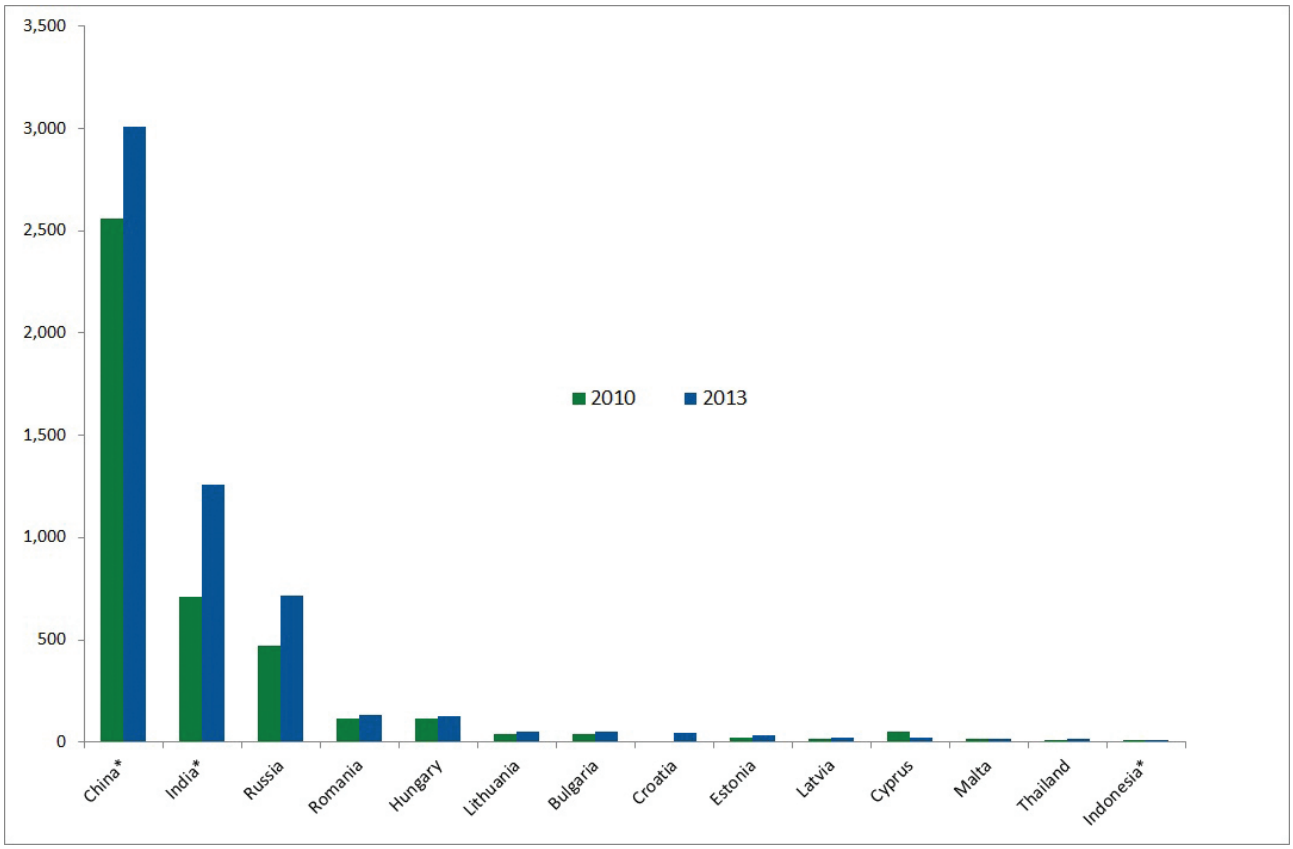
Non-DAC donors include:

- Emerging donors, such as new member states of the EU, Turkey, Chile and Mexico;
- Providers of the South-South co-operation, mainly the BRICS[1] countries but also Egypt and Thailand;
- Arab donors, including Saudi Arabia, Kuwait, and the United Arab Emirates.

Source: *OECD, 2015*

Estimates indicate that these flows have doubled between 2010 and 2013, reaching USD 23.5 billion and providing 13.4% of total development co-operation flows (OECD, 2015). Among the ASEM countries, the largest providers of concessional flows for development were China, India, and the Russian Federation.

Table 1: Concessional flows for development from non-DAC ASEM providers of development co-operation (Total Bilateral Aid to All Sectors) in 2010 and 2013



** Estimates for non-reporting countries*

Source: *OECD DCD-DAC, 2015*[7]

[7] ASEM OECD-DAC countries include: Australia, Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Korea, Luxembourg, Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, United Kingdom

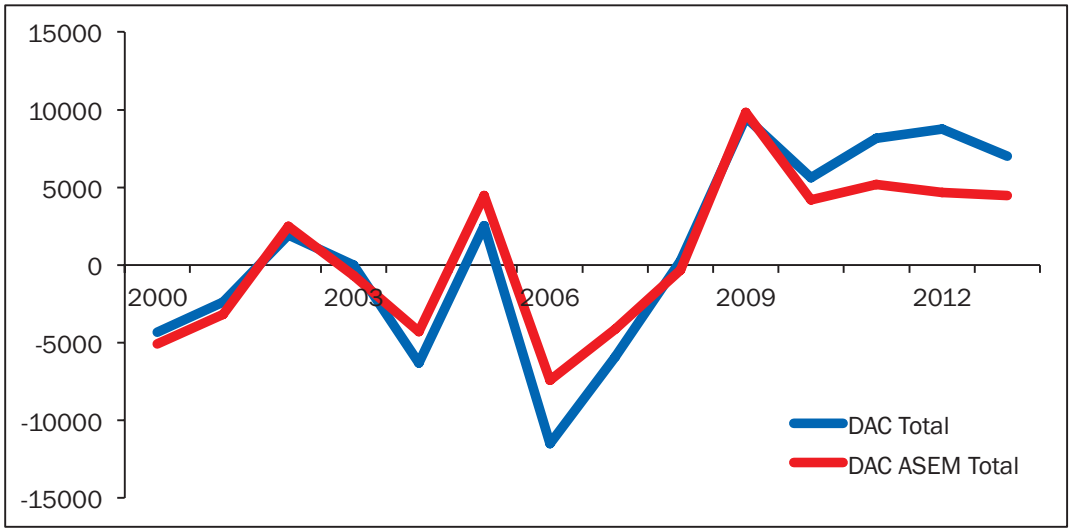
New donors, especially South-South co-operation providers, have not only brought additional financing sources for development initiatives, but also new approaches to development financing. While they also provided funds to the UN and other multilateral or regional organizations, a considerable share of financing was directed to large infrastructure projects with a return-on-investment expectation (UNTT, 2013). Examples of pioneering financing approaches include:

- New development banks, such as the New Development Bank BRICS (NDB BRICS) and the Asian Infrastructure Investment Bank (AIIB). These initiatives are of special significance as they offer using part of the accumulated reserves for development purposes, without using funding of international organizations and/or complying with traditional donor rules.
- The trilateral India, Brazil and South Africa Fund (IBSA), which supports hunger eradication and poverty reduction projects mostly in Africa. Within this fund, each donor provides an annual USD 1 million fund to various projects in LDCs.
- India's Duty Free Tariff Preference initiative for LDCs. Since 2008, it has offered preferential tariff rates on export products from LDCs. In 2014, this scheme was extended to 98% of all exported products and 29 LDCs joined the initiative.

1.1.1.3. Other official flows

Other Official Flows (OOFs) now constitute approximately one-third of all official financial flows from developed countries and international financial institutions (OECD, 2014). OOFs from DAC countries amounted to USD 7.3 billion in 2013 but have shown volatile patterns over the last decade. After a sharp increase between 2004 and 2010, they have decreased since 2010 (OECD, 2013).

Figure 6: Other official flows (OOFs) from DAC and ASEM DAC donors in Total, Million US dollars, 2000–2013

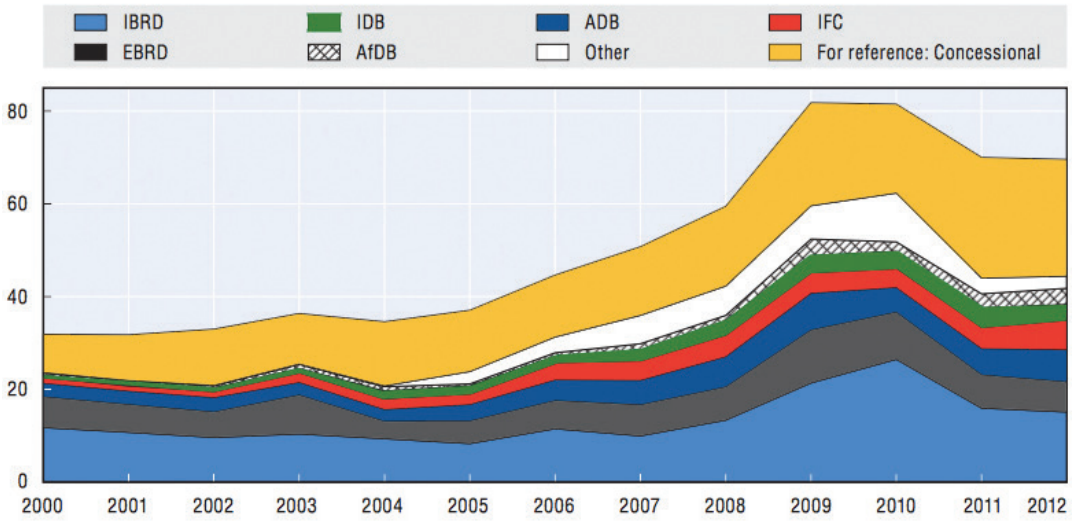


Source: *OECD DCD-DAC, 2015*[8]

[8] ASEM OECD-DAC countries include: Australia, Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Korea, Luxembourg, Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, United Kingdom

The largest providers of OOFs are not countries, however, but international financial institutions. In 2012, two thirds of their financing (USD 70 billion) was distributed in various non-concessional forms.

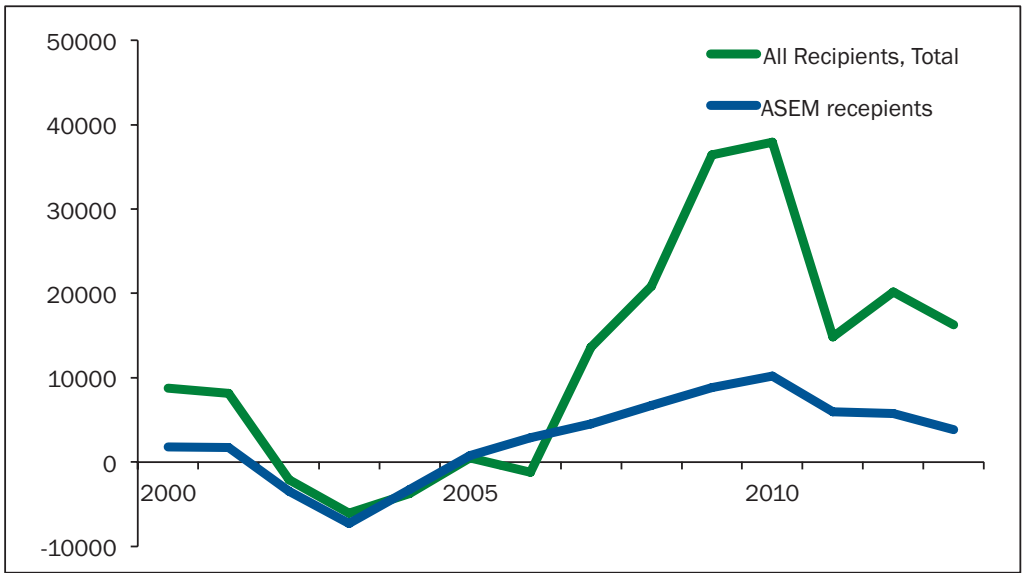
Figure 7: Share on non-concessional financing in international financial institutions total operations 2000–2012. Gross disbursement, USD billion constant 2012 prices



Source: *OECD, 2014*

OOFs are especially important for financing development in middle-income countries. According to estimations, middle-income countries received 95% of these funds (OECD, 2014). Moreover, almost 25% of these funds were provided to middle-income ASEM countries in Asia.

Figure 8: Other official flows (OOF) from multilateral agency donors to ASEM recipient countries in total, million US dollars, 2000 – 2013



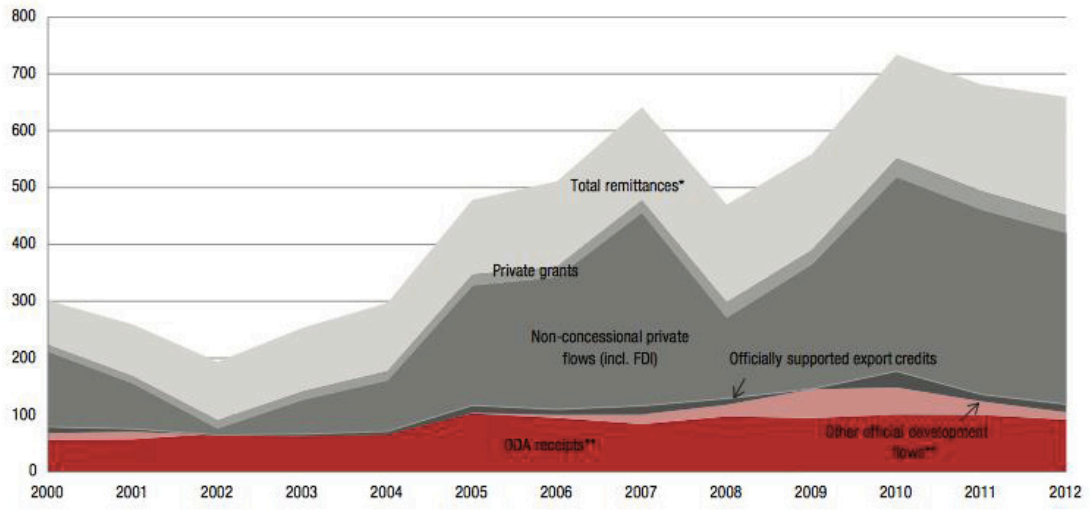
Source: *OECD DCD-DAC, 2015*[9]

1.1.2. Private international resources for development financing

Private flows to developing countries, such as various non-concessional flows, diaspora remittances and private donations from philanthropic organizations, have accelerated considerably since 2000.

[9] ASEM OECD-DAC countries include: Australia, Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Korea, Luxembourg, Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, United Kingdom

Figure 9: Developing countries' net resource receipts from DAC countries and multilateral organisations in 2000–2012, constant 2011 USD billion



Source: *OECD, 2013b*

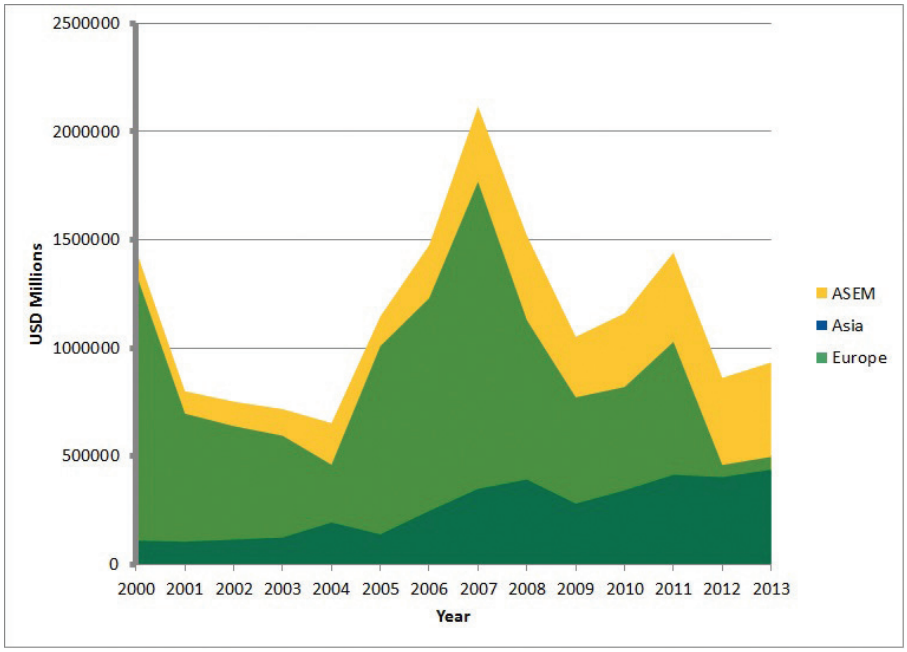
On the other hand, since development financing is traditionally beyond the 'for-profit' interest of private institutions, such flows have usually targeted higher income countries and larger market players (EP, 2014 and ICESDF, 2014). Moreover, non-concessional flows have shown volatile patterns, since infrastructure investors are very sensitive to sovereign risks, including transparency issues and political and regulatory problems.

1.1.2.1 Non-concessional private flows

Non-concessional international private flows consist of direct investment and portfolio investments as well as long and short-term loans.

Foreign Direct Investments (FDIs) are increasingly focused towards developing countries (52% of global FDI, approx. USD 390 billion in 2013). In most of these countries, FDI flows have also become the leading private financing source (UN GA, 2014 and World Bank, 2013). As shown in Figure 10, FDI flows to Asian ASEM members also show a relatively steadily increasing pattern.

Figure 10: FDI inflows to ASEM member countries between 2000–2013 in USD millions



Source: *UNCTAD, FDI/TNC database*

At the same time, FDI has several characteristics that should be noted when categorized as a development financing source:

- FDI flows are highly concentrated: 70% of FDI goes to only 10 developing countries, mostly in Asia (EP, 2014 and DI, 2013). Low-income countries had very little investment share, mostly targeting export-oriented extractive sectors (World Bank, 2013 and EP, 2014).
- The total FDI outflows from developing countries in the form of profits reached 90% of total FDI inflows to developing countries in 2011 (EP, 2014 and DI, 2013).
- In developing countries, only 8% of FDI was used for long-term infrastructure investments, primarily in the energy and transportation industries (World Bank, 2013 and UNTT, 2013).

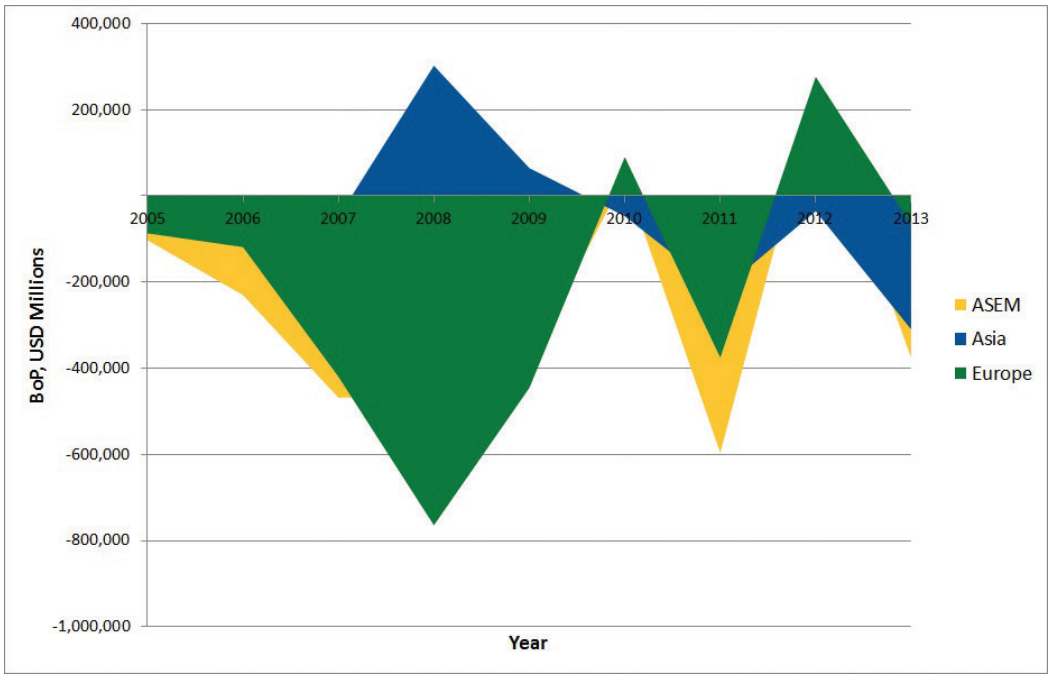
Foreign Portfolio Investments (FPI) — medium and long-term investments in stocks and bonds of another country — have increased but shown volatile patterns over the last decade. FPI inflows to middle-income countries emerged after 2009 but slowed down by 2013, as many of the major economies were affected by the economic crisis (UNTT, 2013 and World Bank, 2013). FPI in developing economies generally targets government bonds that are used to refinance sovereign debt. Corporate securities have a lower share, 5% of GDP in middle-income countries (UN GA 2014). While bond and stock markets in developing countries would be an adequate financing source for long-term development objectives, these continue to have considerable scope for expansion (ICESDF, 2014 and UNTT, 2013). In middle-income countries, bond trading has already appeared but is mostly publicly funded to address national debt issues (UNTT, 2013). Compared to developed countries, the share of stock markets is also relatively low both in middle and in low-income countries: 28% and 20% respectively versus 60% in developed economies.

Foreign loans provided to developing countries have been growing in the last decade. The net loan disbursement amounted to USD 340 billion in 2011 (EP, 2014 and DI, 2013). These loans originated mostly from commercial sources to the private sector and targeted middle-income countries including Brazil, Mexico, Turkey, and China. In 2011, South America, and East Asia received the highest percentage of long-term loans (EP, 2014 and DI, 2013).

1.1.2.2. Remittances

Developing country diaspora remittances are estimated to be around USD 583 billion in 2014. Since 2000, these flows have been on the rise, both in Europe and Asia. In 2014, 63% of such bilateral annual remittance inflows were in fact directed to ASEM countries.

Figure 11: Bilateral Annual Remittance Inflows to ASEM countries between 2000 and 2013 in current USD millions



Source: *World Bank, "Migration & Remittances World Factbook 2011."*

Considering various income-groups, many of the top-receiving countries were also ASEM members.

Figure 12: Top 10 Remittance receiving countries by income group in 2013 (billion USD)

High-income countries		Middle-income countries		Low-income countries	
France	21.6	India	71	Bangladesh	15.2
Germany	14.7	China	60.2	Nepal	5.4
Belgium	10.8	Philippines	26.1	Tajikistan	4.1
Spain	10	Mexico	22	Myanmar	2.5
Korea	9	Nigeria	21	Kyrgyzstan	2.3
Italy	7.7	Egypt	20	Haiti	1.7
Poland	7.3	Pakistan	14.9	Kenya	1.3
Russian Federation	6.4	Viet Nam	10.7	Uganda	1
United States	6.3	Ukraine	9.3	Ethiopia	0.6
Portugal	4	Indonesia	7.9	Afghanistan	0.5

Source: *Pew Research Center, 2014*

In 2013, six of the top-receiving countries were Asian. In descending order, these were India, China, the Philippines, Bangladesh, Pakistan, and Viet Nam.

Although remittances have indirectly contributed to poverty eradication and social development, they have not been extensively utilized for development financing in a systematic way. As the transfers are primarily based on social ties, they were mostly spent on consumption (EP, 2014 and ICESDF, 2014).

Moreover, the utilization of remittances for development objectives is hampered by the lack of information on the size, income and wealth characteristics of the diaspora groups of different countries as well as on their potential interest in the type of projects they would support (World Bank, 2013 and EP, 2014).

1.1.2.3 Philanthropic donors

The role of philanthropic organizations, including foundations and non-governmental organizations, in development financing, has also been increasing. Aid from such sources is around USD 60–70 billion annually, which is already half of the ODA provided by DAC countries (ICESDF, 2014).

Besides the additional resources that private donors can bring to development financing, they also bring novel elements to the collection and disbursement of funds.

Box 5: Examples of innovative ways in philanthropic financing in Asia

Approach	Example
Strategic approach: Vision and goal-oriented, value-based funding	Zuellig Family Foundation in the Philippines created a training program for mayors, health leaders, and frontline health workers to improve health outcomes in the country.
Venture approach: performance-oriented funding	SOW Asia is based in Hong Kong and supports entrepreneurs to achieve scalable social and/or environmental impacts.
Giving circles: engaging a group of donors for regular donations	New Day Asia was established to improve the lives of women and girls in crisis throughout Asia. It allows members to support selected projects and become more directly involved in implementation
Crowd-funding platforms	The StartSomeGood web-based platform is aimed to raise crowd-funding for various non-profits, social entrepreneurs, and change makers.

Source: *Based on ADB, 2015*

At the same time, knowledge about philanthropic flows is still limited. Better data could help in better assessing their impact, improve coordination and help to streamline financing, reduce overlap, and maximize their sustainable development impact (ICESDF, 2014).

1.2. Global partnership for improved development financing post-2015

International development financing is an important part of the post-2015 financing framework. It will be necessary:

- to complete the unfinished business of the MDGs;
- to realize sustainable development investments at the country level for infrastructure, rural development, and climate adaptation and thus reduce growing inequalities; and
- to safeguard public goods by tackling environmental and public health challenges (ICESDF, 2014).

Development financing sources will have to be better targeted, be more efficiently utilized, and mobilize further domestic and private resources (UN, 2015 and UN GA, 2014).

1.2.1. Fulfilling development commitment and providing more targeted development assistance

Post-2015, traditional DAC donors need to fulfil their ODA commitments and achieve 0.7% contribution of the GNI in line with the Monterrey Consensus. Since the average contribution of the OECD-DAC members was only 0.29% in 2013 and 2014, this would provide an additional USD 190 billion funding annually.[10] Additionally, if not only OECD-DAC countries would commit, but all high-income countries above USD 20,000/capita GNI would provide 0.7% of GNI for development purposes, an additional estimated USD 250–260 billion funding could be raised annually.[11]

However, even if developed countries scale-up their contribution, international development financing sources will remain scarce. Thus, resources should be more focused on the countries where resources designated for sustainable development are most needed (EP, 2014; ICESDF, 2014 and OECD, 2014). These include:

- ODA to Least Developed Countries and fragile states: The allocation of international public funding should be based on the level of economic development, and ODA should be primarily directed to poor and fragile economies. To ensure eradication of extreme poverty, in the least developed countries grant financing should continue (ICESDF, 2014).
- ODA to most underfinanced social and environmental objectives: Development assistance should also be directed towards those social and environmental goals that have the least access to other funding sources, such as climate change adaptation.
- ODA to support Middle-Income Countries in resource mobilization: ODA helps middle-income economies to leverage private funds, mobilize domestic resources, and undertake policy reforms for improved development.
- Besides ODA, part of other international financing flows can also be targeted towards development objectives:
- Utilizing Other Official Flows: Loans at close to market terms, equity investment or risk-mitigation instruments can be especially beneficial in middle-income countries for financing investments in selected sectors, such as water and energy.
- Trade as a development assistance mechanism: Trade and its impacts on development should also be carefully considered and the new development financing framework should take full advantage of it as a potential vehicle for achieving sound development objectives and technology transfer (Pinter et al. 2014). For better and further utilization of trade as a development financing mechanism in the post-2015 framework, there may be a need to differentiate trade based on its ability to advance the cause of sustainable development in general or SDGs in particular. See box 6.

[10] Authors' calculation based on OECD-DCD DAC statistics for year 2013 and 2014

[11] Authors' calculation based on World Bank statistics on Purchasing power parity gross national income for year 2013 and OECD-DCD DAC statistics. For elaborated calculation see Chapter 2.1.

Box 6: Aid for Trade initiative and the role of trade in the post-2015 development framework

Several countries (e.g. China and India) have already recognized the significance of trade in promoting sustainable development. In seeking new ways to provide development aid, the Aid for Trade initiative was launched in 2005 to support LDCs in scaling-up external trade activities. It provides grants for building trade-enabling infrastructure or for improving trade-related capacities. In 2011, the Aid for Trade initiative was valued at USD 41.5 billion and research confirmed that the assistance improved the trading capacities of recipient countries, especially in the field of food production, textile and tourism sectors.

Another example is the EU's Generalized System of Preferences trade scheme introduced in 2014. It focuses on helping developing countries most in need. It promotes sustainable development and good governance by allowing more countries to become eligible for GSP+, which provides additional preferences to vulnerable countries that ratify and effectively implement core international conventions on environment, labour, and human rights. The new GSP also maintains the Everything But Arms scheme, which provides duty-free and quota-free access to all products from all LDCs with the exception of arms and ammunition.

Source: *OECD-WTO, 2013 and Pinter et al., 2014, Trade and Development.*

1.2.2. Using development assistance more efficiently

In addition to changes to the aid structure, improvements are also necessary for the provision of the assistance:

- Redefining ODA: Revisions to what is accounted as ODA is under discussion. For example, currently in-kind contributions (e.g. consultancy services) and spending on global objectives (e.g. climate change) are accounted as ODA (UNTT, 2013). At the same time, concessional finance from non-DAC countries or guarantees, which can leverage private funds, are not included in the ODA statistics (UNTT, 2013 and OECD, 2014).
- Improving donor practices: Poor donor practices (including high transaction costs, lack of coordination) have further decreased the real value of ODA. Research has shown that better quality aid could improve the overall value of such transfers by 10–20% (EP, 2014 and UNTT, 2013). From a recipient point of view, aid predictability in the long-term is also crucial for development planning.

Box 7: Global initiatives for effective development co-operation

The Paris Declaration on Aid Effectiveness endorsed in 2005, and reaffirmed in 2008 with the Accra Agenda for Action and the Busan Partnership for Effective Development Co-Operation in 2011, laid down the principles of development financing. These principles included ownership, transparency, development results, and accountability, and have been enforced with partial success especially in the area of ownership and capacity development (EP, 2014 and UNTT, 2013). Most recently, the Global Partnership for Effective Development Cooperation (GPEDC) was established and held its first meeting in April 2014. The Partnership aims to connect various stakeholders in the field of development financing to increase aid effectiveness. By September 2014, 161 governments and 56 organisations had joined the partnership. Members of the partnership regularly share knowledge and monitor progress of development co-operation to support the implementation of the Busan commitments (GPEDC, 2014).

- Improving aid transparency: The effectiveness of development aid is also hampered by the decentralized and fragmented nature of international public financing. Thus, there is a need to reduce administrative, reporting, and compliance burdens of recipient countries and create facilitative platforms, which can improve the visibility and transparency of such flows (ICESDF, 2014).

Box 8: International Aid Transparency Initiative

The International Aid Transparency Initiative (IATI) was founded in 2008 and, in its registry, it publishes data about aid providers and users to improve the transparency of development flows. As a voluntary initiative, it brings together a variety of stakeholders, involved in development financing and goes beyond regular data collected by the OECD-DAC. Based on consultation with developing countries, the Initiative introduced the IATI standard format for reporting aid data via the IATI registry. So far almost 300 organizations have joined the reporting system.

Source: *IATI, 2014*

- Improving the effectiveness of South-South co-operation in development financing: Besides improving traditional ODA flows, further steps are necessary to strengthen cooperation among developing countries. To this end, triangular or trilateral co-operations between new and traditional donors can contribute effectively (ICESDF, 2014). Many countries in Asia have already launched such co-operations with international institutions and OECD-DAC members and other donors (OECD, 2014). See examples in Table 2.

Table 2: Examples of triangular co-operation targeting developing countries in Asia

Donor country	Pivotal country	Beneficiary countries	Project
Islamic Development Bank	Malaysia	Bangladesh	Capacity development for marine fisheries
Islamic Development Bank	Malaysia	Indonesia	Capacity development for small enterprises and microfinance schemes
Germany	Singapore	Afghanistan	Human resource capacity development and civil aviation safety
Germany	India	China	Clean Development Mechanism
Japan	China	ASEAN countries	Training courses in environmental protection
United Kingdom	China	Bangladesh, Nepal	Sharing of China's experience in preparing for and responding to natural disasters

Source: *OECD, 2012*

1.2.3. Building on regional financing mechanisms

In the post-2015 development framework, multilateral development banks (MDBs) can potentially play a key role in ensuring the increased effectiveness of development financing and support countries in mobilizing private and domestic resources.

The importance of regional financial institutions has been on the rise in the last two decades. The advantage of such organizations compared to global ones lies in their particular knowledge and sense of ownership for the region (UNTT, 2013). As such, they can support project preparation by reducing capacity and information gaps to bring together different partners to finance specific projects (World Bank, 2013).

Box 9: The BRICS or New Development Bank

The New (or formerly BRICS) Development Bank is a multilateral development bank, created in 2014 by the 5 BRICS countries. With a USD 50 billion initial capital fund, it aims to foster co-operation among the five participating countries and provide infrastructural loans. The BRICS countries will provide the necessary funds equally and none will have veto power over decisions. In addition, the participating countries have created a "Contingency Reserve Arrangement" of USD 100 billion to support developing nations in times of global financial crises.

Regional platforms can also promote more stabilized capital flows at the regional level (ICESDF, 2014). To ensure macroeconomic stability during a financial crisis, several regions including Latin America, the Gulf States, and South-East Asia have established a reserve pooling mechanism (UNTT, 2013). Taken one step further, with the establishment of regional payment systems, co-operating countries can strengthen regional trade and investment and promote SME involvement in these activities (UNTT, 2013)

Box 10: The Chang Mai Initiative

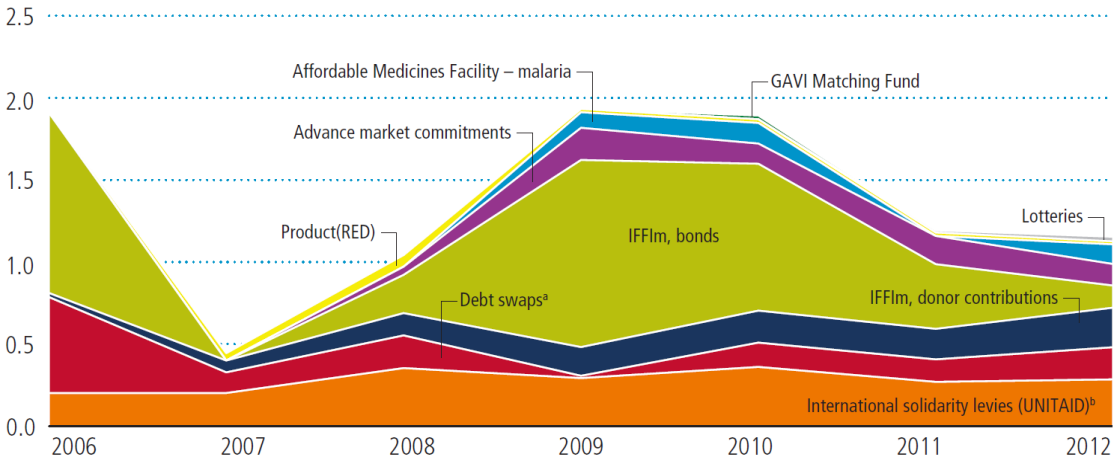
Following the 1997–98 financial crises, the ASEAN countries together with China, Japan and the Republic of Korea launched the Chang Mai Initiative, to reduce the impacts of similar financial crises in the future. In 2010, the Initiative was transformed into a reserve pooling mechanism with an initial USD 120 billion in capital. In 2012, this amount was doubled, reaching USD 240 billion. The initiative also boosted currency swap agreements among the Southeast Asian nations (OECD, 2014).

1.2.4. Working with innovative solutions to improve development assistance

Innovative financing mechanisms either raise new resources or disburse traditionally raised funds in innovative ways.

The cumulative donor contributions to innovative financing mechanisms reached a total amount of USD 5.7 billion in the period 2006–2012. However, it is important to note that 55% of these funds were accounted as part of the traditional ODA flows; therefore these were not additional resources into development financing (DI, 2013).

Figure 13: Cumulative donor contributions to innovative finance since 2006



Source: *Development Initiatives, 2013*

Examples of innovative financing mechanisms include:

- International Finance Facility for Immunization (IFFIm): The IFFm issues vaccine bonds to the capital markets, based on long-term government commitments and repays them through ODA of eight countries (UNTT, 2013 and EP, 2014). The collected revenue then provides upfront financing for the vaccination programme of the Global Alliance for Vaccines and Immunization (GAVI) and thus translates long-term governments for immediately available cash resources. This model could be applied for infrastructure investments, supporting environmental objectives or other objectives backed by ODA. (UNTT, 2013).
- Global funds: Vertical funds, such as the Gavi Alliance, the Global Fund to Fight AIDS, Tuberculosis, and Malaria or the Global Environment Fund, are multi-stakeholder global programs providing funding for projects with specific purposes in sectors that are traditionally underfunded (World Bank, 2013). Such funds, due to their specific purposes, proved to be successful as they were able to attract political support, stakeholder participation and the funds at the same time (UNTT, 2013). However, while these funds aimed to attract private investors, until now they have remained heavily ODA reliant (World Bank, 2013 and UNTT, 2013).

Box 11: Red products - Scaling-up private support for global funds

The RED product initiative was established in 2006 to support the Global Fund to Fight AIDS, Tuberculosis and Malaria. It engages large multinational companies, which then create an RED-logo product and donates a certain % of the revenue from these products to the Fund. By September 2014, USD 250 million were donated to the Global Fund.

- Debt swaps: This mechanism enables low-middle income countries to cancel their outstanding debts towards donor countries and use the liberated funds for social or environmental projects. Examples of debt swaps are presented below in Table 3.

Table 3: Debt swaps initiatives

Name of the initiative	Project funded	Donor and recipient countries	Total value of agreements
Debt-2-Health	Health projects	Australia/Indonesia, Germany/Indonesia, Pakistan and Ivory Coast	USD 102 million
Debt for nature	Environmental projects	USA/Peru, France/ Madagascar	USD 106 million
Contrat de Désendettement et de Développement (C2D)	National development projects	France/15 African countries, Bolivia and Honduras	USD 785 million

Development taxes have a considerable potential to raise funds. Examples of existing development taxes are presented in Table 4. These solutions have high transferability potential to other countries and can be easily replicated.

Table 4: Examples of national development taxes

Name of the tax	Countries of operation	Supported development objective	Funds raised
Solidarity Air ticket levy	Cameroon, Chile, Congo, France, Madagascar, Mali, Mauritius, Niger and Korea	UNITAID purchasing of drugs for communicable disease treatments	USD 251 million/year
1% water contribution from local communities' water and sanitation budget	France	Local water infrastructure development projects in developing countries	EUR 100 million since 2007
National lotteries revenue taxes	Belgium, Netherlands, United Kingdom	Support to various civil society or development funds	EUR 88 million

Sources: *UNTT, 2013; EP, 2014 and Leading Group on Innovative Financing for Development, 2014*

While such innovative mechanisms have raised only a limited amount of funding so far, if various global carbon pricing systems and financial transactions are introduced, new resources could reach up to USD 460–480 billion per year. Various proposals for global taxes and their potential to raise revenues are presented in Table 5.

Table 5: Proposals for global taxes

Name of the tax	Description	Potential revenue
Carbon pricing	A global pricing imposed on the carbon content of fossil fuels.	A USD 25/ton carbon price in OECD countries could raise USD 300 billion annually (OECD/IEA statistics).
Carbon pricing on aviation and bunker fuels	A global pricing on carbon emitted when using aviation and bunker fuels is in proposal stage.	USD 22 billion could be raised with a USD 25 price per ton of carbon (EP, 2013).
Financial Transaction Duty	The EU plans to impose a duty on derivatives and securities transactions within 11 of its Member States.	If implemented by all the 28 EU member states, the EU duty would generate an expected EUR57 billion fund per year (World Bank, 2013).
Currency Transaction Tax	A possible tax on currency transaction is in proposal stage in the EU.	If it gains support, a 0.005% tax on the four main currencies could raise USD 40 billion yearly (UNTT, 2013).
Billionaire tax	Imposed on individuals owning a minimum USD 1 billion of wealth.	USD 40–50 billion could be raised with a 1% tax (EP, 2014).
Solidarity Air Ticket Levies	The Solidarity Air Ticket levies have been already introduced in some countries and have considerable transfer potential.	If extended to other countries, they can raise up to USD 1–10 billion annually (UNTT, 2013 and EP 2014).
Levy on sports revenues	Mass-sport events, such as football matches, or the Olympic Games generate high revenue flows from commercial sources. FIFA and the five major football leagues together have revenue of USD 12 billion annually. The Olympic Games generated more than USD 8 billion in revenue in the period 2009–2012 from commercial revenues.	The Education for All Monitoring report calculated that approximately USD 45 million could be generated from a 0.4% levy on the commercial revenues of the five largest European football leagues.

Sources: *EC, 2013; EP, 2014, Leading Group on Innovation Financing for Development, 2010)*

As of today, the possibility that such taxes might be applied globally is rather low. They can potentially be introduced in a number of countries via regional initiatives, such as the European Union. It is unclear how the revenues raised from global taxes could be administered and distributed, or if collected individually by the participating countries, what percentage of these revenues could be utilized for development objectives in reality.

1.2.5. Integrating environmental considerations into the post-2015 development financing: emerging natural capital accounting initiatives

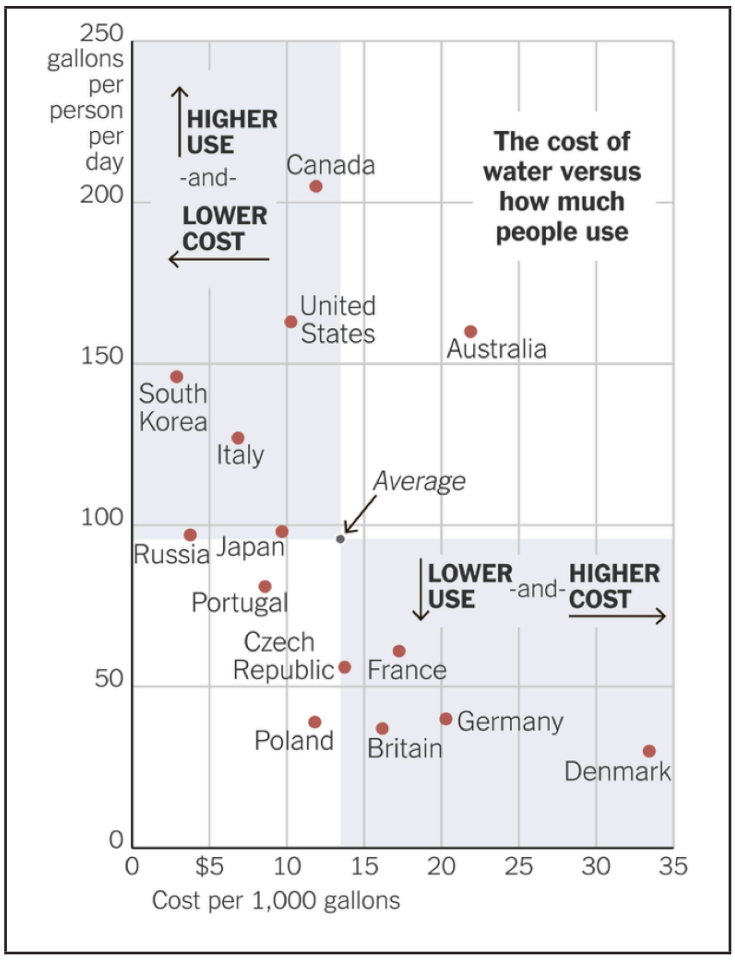
Environmental degradation and damages can result in high costs and thus considerably hinder development efforts. It is therefore important that environmental considerations are embedded more profoundly into the post-2015 development agenda. An important step in this process is to increase efforts to assess the "inclusive wealth" of a country and integrate the valuation of natural capital into the development-financing framework.[12] By setting a more realistic price on important ecosystem services, industries and consumers would be incentivised to value and use natural capital assets in a more sustainable manner.

Gradually, following increasing social demand and establishment of norms regarding sustainable development, the production cost of goods and services have factored in new elements that were previously not included. One example of this is the cost of employment security included in the price of products and services. As it is obligatory to ensure workplace safety and health regulations, companies have to cover costs of insurance for their employees. This adjustment has had many positive externalities. A similar model could be used to integrate the cost of natural assets or negative externalities into the price of final goods and services. This integration would result in new unexpected benefits as well as a cleaner and healthier environment, triggered by the resulting need to adjust to environmental regulations.

[12] Natural capital assets consist of both ecosystem services (i.e. biodiversity, soils, fresh water and landscapes) and natural resources (i.e. fossil fuels, minerals, fossil water stores, land) and are essential for human well-being and economic development (UNEP-WCMC, 2014).

Putting a real price on natural capital assets is not only crucial because it provides resources for restoration, but because it also encourages sustainable consumption patterns. In the case of fresh water resources, a direct correlation was shown to exist between the price of water and the amount of water used in developed countries (Figure 14). Lower prices of fresh water resources are correlated with higher levels of consumption. Meanwhile, in countries where water and wastewater are set at a higher price, therefore accounting more realistically for underlying economic and environmental costs, lower consumption patterns were observed.

Figure 14: Cost of water per 1000 gallons versus daily consumption of water in selected developed countries



Source: *Global Water Intelligence, via Standard & Poor's*

Recognizing the importance of accounting for the value of natural capital in promoting long term environmental sustainability, efforts have been undertaken in the last two decades by various international organizations and countries to measure the real value of ecosystem services. There have also been significant efforts to measure the flow and the stock of available natural resources with various natural capital accounting methodologies.

1.2.5.1. UN System of Environmental-Economic Accounting

The UN introduced the first version of its System of Environmental-Economic Accounting (SEEA) in 1993 and updated it in 2003 (UN, 2014). The methodology aimed to provide countries with a systematic framework for organizing environmental statistics and producing environmental-economic accounts. As a result, the SEEA framework quantifies natural resource flows and stocks (physical assessment) and assigns economic value to them (monetary assessment).

Taking a step further, in 2012 the United Nations introduced a Central Framework System of Environmental-Economic Accounting (SEEA), as an international statistical standard for the valuation of renewable and non-renewable natural resources and land (UN, 2014). Complementing the Central Framework, the UN (2014) also published recommendations for application of the SEEA, for water, energy and ecosystem accounting. Although the SEEA primarily focuses on traditional natural resources, recently it has also introduced an experimental ecosystem accounting methodology.

The application of the SEEA can support policymakers in various ways:

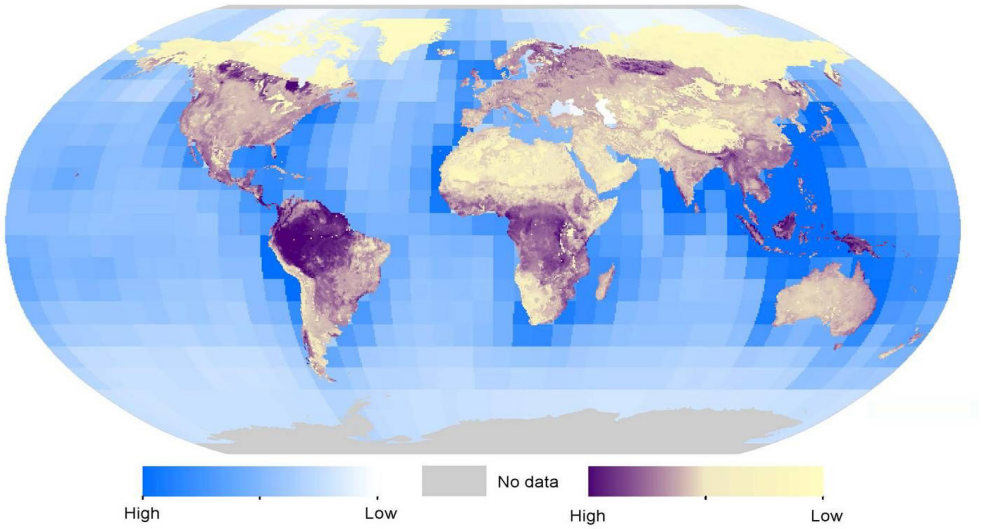
- In improving access to basic resources (i.e. water and energy) by providing information on their overall availability;
- In better allocation of resources, by providing information on supply and demand;
- In improving the state of the environment;
- In mitigating risks and adapting to extreme events by measuring related emissions and expenditures.

1.2.5.2 Initiatives for Valuation of Ecosystem Services

The concept of valuation of ecosystem services, which goes beyond natural capital accounting, has also been gaining importance in recent years. This methodology aims to extend national resource accounts to cover eco-system services and aims to assign a commodity value to such services. Initiatives include:

- Millennium Ecosystem Assessment: Launched in 2001 and published in 2005, the Millennium Ecosystem Assessment was prepared by more than one thousand scientists to provide an overall review of the status and the prospects of Earth eco-system services.
- WAVES partnership: Taking forward the idea, the World Bank launched the partnership in 2010 to promote the adoption of natural capital accounting approaches. The partnership aims to build on the UN SEEA framework, but aims to assess the value of eco-system services as well. It involves various partners, including core implementing developing countries and contributing donor countries or international organizations. The core implementing countries, Botswana, Columbia, Costa Rica, Guatemala, Indonesia, Madagascar, the Philippines, and Rwanda are in the process of developing their national Natural Capital Accounting framework.
- UNEP assessment: Building on the UN SEEA accounts and its pilot ecosystem accounts, the UNEP-WCMC (2014) prepared a global overview of natural assets. As shown in the map below, the assessment identified global natural assets including global fresh water resources, soil quality for plant growth, terrestrial organic carbon, terrestrial biodiversity, marine biodiversity and marine fish stocks assets. The assessment also highlighted important environmental hot-spots at the global level, e.g. tropical forests, but further work is needed to analyse changes in natural ecosystems over time and to identify local environmental hotspots (GLOBE, 2014).

Figure 15: Composite map of global eco-system assets



Source: *UNEP-WCMC, 2014*

Many countries have started to introduce such methodologies. Specific application examples of these practices are presented in Chapter 2.1.5.

1.2.5.3. Innovative business accounting initiatives

Besides national governments, companies have also started introducing environmental accounting in the last two decades to track their environmental impacts (such as the utilized natural resources and the discharges to the environment) and to better manage underlying environmental costs. As costumer concerns continue to increase about the sustainability aspects of business operations, companies are expected to be more involved in such initiatives.

Examples of initiatives promoting good practices and encouraging businesses to undertake natural resource assessments include:

- Global Reporting Initiative (GRI): The Global Reporting Initiative (GRI) is the most comprehensive voluntary initiative that engages companies in disclosing sustainability information. By 2014, 3600 companies (mostly large enterprises) joined the initiatives worldwide and more than 40% of these companies were from ASEM countries: 549 from the Asia-Pacific and 1,033 from European ASEM member countries (Fogelberg, 2014). The GRI requires companies to report on their economic, environmental, social, and governance performance according to standardized GRI reporting guidelines. Moreover, it also requires companies to disclose natural capital information, in case their activities impact such resources. Related to this latter, most recently the GRI also developed reporting guidelines about the utilization of ecosystem services (ACCA, 2013).

- Natural Capital Coalition: Created by various international organizations, including the WWF, WBCSD and GRI, the Natural Capital Coalition (formerly TEEB for Business Coalition) is a multi-stakeholder, global platform to support businesses in the adoption of valuation methods for natural and social capital (NCC, 2014). The initiative aims to map existing methodologies and to introduce a harmonized natural capital measuring, monitoring and reporting framework for businesses (NCC, 2014). In 2014, the Coalition selected two global consortia managed by the World Business Council for Sustainable Development (WBCSD) and the International Union for Conservation of Nature (IUCN) to develop a Natural Capital Protocol to measure and value nature in business activities. As a first step in the preparation of the Protocol, the two consortia prepared and published a stocktaking report on existing initiatives that can inform the development of the Protocol (NCC, 2014).

- Natural Capital Declaration: The initiative was created by CEOs of the financial sector to promote integration of natural capital considerations into the provision of financial products. The initiative works together with the UNEP Financing Initiative and the Global Canopy Program to develop methodologies and tools for assessment, integration, accounting and reporting natural capital data (NCD, 2014). The initiative was launched in 2012 and since then 41 financial institutions have endorsed it and committed to integrate natural capital considerations into their operations, to support the development of relevant methodologies and to contribute to relevant international efforts (NCD, 2014).

- Eco4Biz - Ecosystem services and biodiversity tools to support business decision-making: WBCSD introduced the Eco4Biz initiative to support businesses in integrating natural capital accounting into decision-making processes (WBSCD, 2014). It collects a variety of tools that can be used by companies for valuation of ecosystem services or biodiversity and support them in the selection of the right tool with the help of a decision tree. At the same time, it also aims to engage companies to test the tools and provide feedback on the outcomes of the utilization of the tools (WBCSD, 2014).

To move forward with the valuation of the natural capital assets, further work is necessary to develop consistent valuation methodologies for resources without consistent market prices. These include techniques to compile accounts and statistics to measure the effects of natural hazards and climate change and to assess natural biological resources, soil and water resources, and environmentally friendly goods and technologies (UN, 2014).

Moreover and more importantly, further efforts are needed to integrate environmental accounts with national government accounts and the financial accounts of businesses, which can directly showcase the financial implications of the use of natural resources and ecosystem services. These initiatives can only bring real change in the valuation of natural capital assets if the monetary value and financing consequences of ecosystem services are integrated in the financial framework of governments and businesses. It is important to achieve this in order to impact the production model of businesses and therefore, the consumption behaviour of consumers.

1.2.6 Outcomes of the Third International Conference on Financing for Development: Addis Ababa Action Agenda

From 13–16 July 2015, the United Nations convened its third international conference on Financing for Development (FfD) to discuss the global framework for financing the post-2015 development agenda. Gathering high-level representatives from UN member states, as well as stakeholders from civil society and the business sector, the conference assessed the progress made in the previous two FfD conferences; addressed new and emerging issues in multilateral efforts to promote international development; and reinvigorated the financing for development follow-up process (UN DESA, 2015).

The conference was considered to be an opportunity to set a global agenda for development. However, the produced outcome document, the Addis Ababa Action Agenda ("Addis Agenda"), which outlines the agreements that were reached between the participating Heads of State and Government, got a mixed reception among stakeholders (FfD3, 2015a).

The Addis Agenda brought new commitment on financial resources and resulted in agreeing to establish a Technology Facilitation Mechanism launched at the Sustainable Development Summit in September 2015 to boost collaboration among governments, civil society, the private sector, the scientific community, United Nations entities, and other stakeholders to support the SDGs.

The inter-agency task team on Science, Technology and Innovation (STI) for the SDGs consists of UNEP, UN-DESA, UNIDO, the UN Educational, Scientific and Cultural Organization (UNESCO), the UN Conference on Trade and Development (UNCTAD), the International Telecommunication Union (ITU), the World Intellectual Property Organization (WIPO), and the World Bank. The task team will established an online platform serving as a gateway for information on existing STI initiatives, mechanisms and programmes. The online platform will be used to map information on existing science, technology and innovation initiatives, mechanisms, and programmes. It will facilitate access to information, knowledge and experience, as well as best practices and lessons learned, on science, technology, and innovation facilitation initiatives and policies. (Technology Facilitation Mechanism, 2015)

However, since the release of the Addis Agenda, civil society has been quick to note that a number of key aspects in development financing were omitted, such as leadership on how and when the 0.7% target for ODA will be reached by developed countries; meaningful reform of the multilateral trading system; or evidence-based guidance on successfully engaging the private sector to achieve social and environmental goals (ACG, 2015).

A point of particular disappointment was that a global tax body under the UN was not created. Such body was perceived useful in catalysing global tax reform, and in setting up an inclusive decision-making process for the global taxes as listed in Table 5 above (ACG, 2015). Outside of the formal text, a partnership of around 30 countries established the Addis Tax Initiative (FfD3, 2015b). Under this platform, developed countries have committed to double their support in helping developing countries to reform their Domestic Resource Mobilisation (DRM) mechanisms. However, it is yet to be seen whether such a body will be able to attract a sufficient number of partner countries to adequately promote an inclusive form of international tax cooperation.

At the FfD conference the OECD and UNDP launched the 'Tax Inspectors Without Borders' (TIWB) initiative. By strengthening national tax audit capacities, the TIWB aims to support developing countries to increase domestic resource mobilization. The idea behind TIWB is to use a learning-by-doing approach. They plan to involve current and retired tax officials to work directly with developing country tax officials on audits and related issues and to share general audit practices.

OECD and UNDP piloted TIWB in Albania, Colombia, Ghana, and Senegal. Evidence collected during the project in Colombia indicated a significant increase in tax revenue, from USD 3.3 million in 2011 to USD 33.2 million in 2014, thanks to tax audit advice and guidance. (Tax Inspectors Without Borders, 2015)

With the conclusion of the FfD3 conference and the limited number of time-bound, actionable commitments in the Addis Agenda, it is difficult to accurately depict the landscape of a global partnership for development financing post-2015. While the conference indeed revitalised countries' commitments to a global partnership for sustainable development, these commitments remain voluntary and unclearly defined.

CHAPTER 2: MOBILIZING DOMESTIC FINANCIAL RESOURCES FOR SDG IMPLEMENTATION

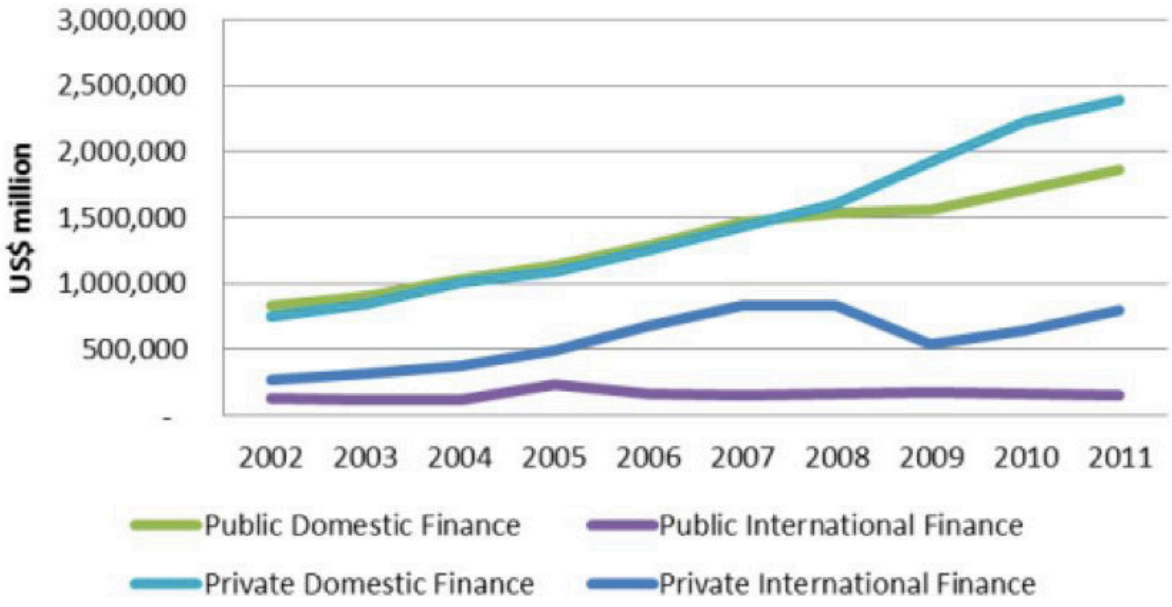
Key points of this Chapter

To ensure the SDGs implementation countries should:

- focus primarily on domestic resources and use international sources as catalysts to these processes;
- move towards a more development-oriented and environment-based tax system;
- consider the introduction of natural accounting systems and apply real price on the use of natural ecosystems;
- improve government spending and reform public procurement and subsidy systems;
- promote access of SMEs, microenterprises and other marginalized groups to development financing sources.

With the relative share of international public financing in developing countries decreasing over the last decade, domestic financing has become more important. In absolute terms, international public financing remained constant over the years, while financing from domestic sources, have been increasing since 2002 in both low and middle income countries (ICESDF, 2014). See Figure 16.

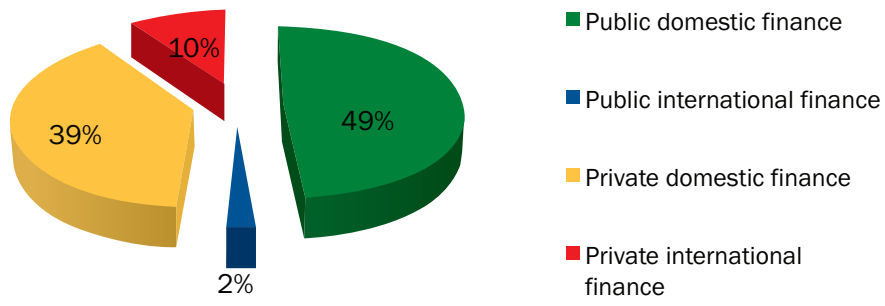
Figure 16: Development finance in developing countries



Source: *ICESDF, 2014*

It is estimated that the total amount of potential development financing was around USD 8 trillion in 2010. The financing was mostly from public domestic and private sources (EC, 2013b).

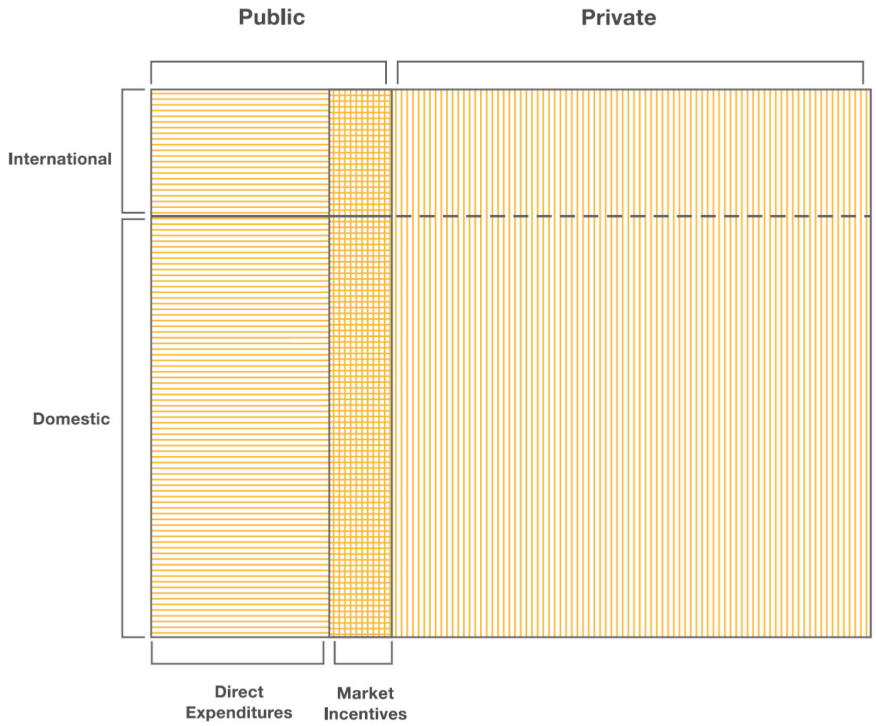
Figure 17: Financing available for developing countries in 2010 from various sources



Source: *ASEF calculations based on EC, 2013b*

Considering the above trends, the implementation process of the SDGs is expected to involve a mixture of sources, including private and public, international and domestic resources (Arakawa et al, 2014). See Figure 18. The ratio of various sources is expected to vary from country to country, depending on the level of economic development or specific financing circumstances. However, all countries need to explore these various financing sources and to rely primarily on domestic resources.

Figure 18: Components of Post-2015 Sustainable Development Finance



Source: *Arakawa et al., 2014*

This section provides an overview of options to improve the utilization and the effectiveness of available domestic funds and reviews innovative public and private funding sources.

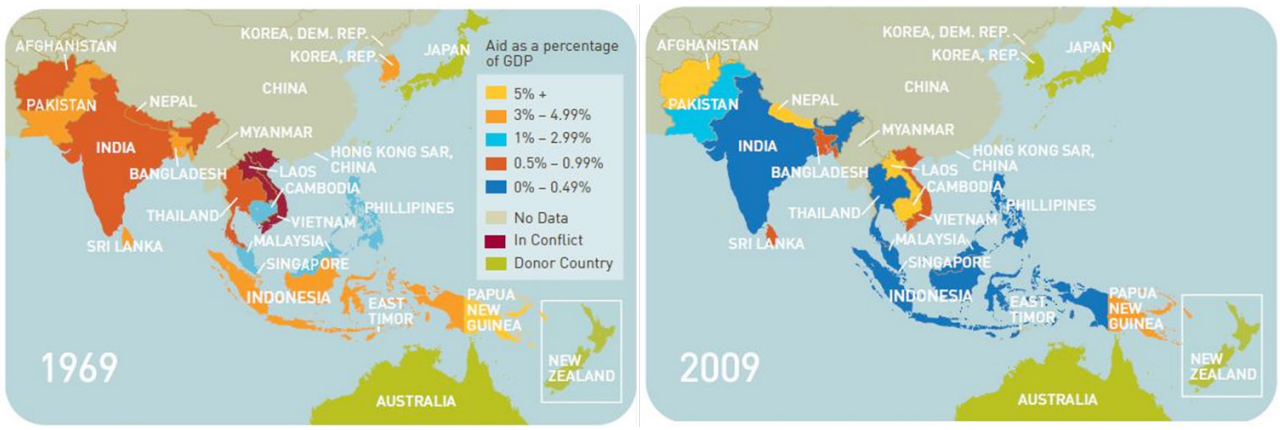
2.1. Improving Domestic Public Financing

Domestic public financing has an equity function to redistribute wealth and an allocation function to ensure long-term provision of public goods; as such, it focuses on promoting progress towards economic, social, and environmental goals (UNTT, 2013). In this section we review major trends of public domestic financing in developing countries and their implications for the post-2015 financing framework.

In developing countries, public domestic financing increased from USD 838 billion in 2002 to USD 1.86 trillion in 2011. Public domestic sources have an increasingly prominent role in development financing. In 2011, such funds provided 48% and 28% of total available financing in middle and low-income countries respectively (ICESDF, 2014 and EP, 2014).

This implies that over time, developing countries, such as those in South and South-East Asia, can increasingly rely on their own domestic resources for development financing.

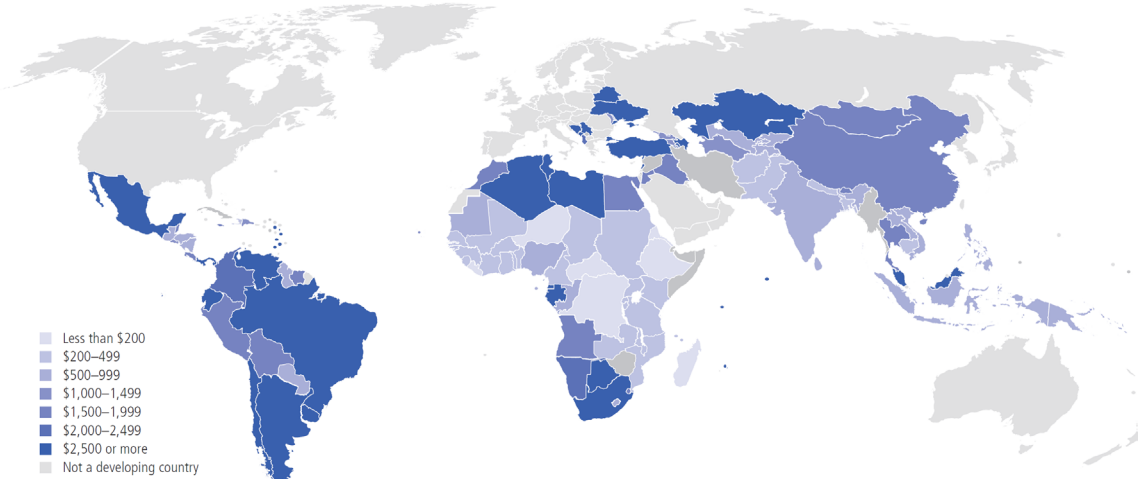
Figure 19: Over time, countries become less dependent on aid



Source: *OECD, n.d*

However, in spite of the increasing availability of public domestic resources, in many countries the annual government spending per person still remains at the lowest level. (EP, 2014). See Figure 20.

Figure 20: Annual government spending per person in USD per capita in 2011



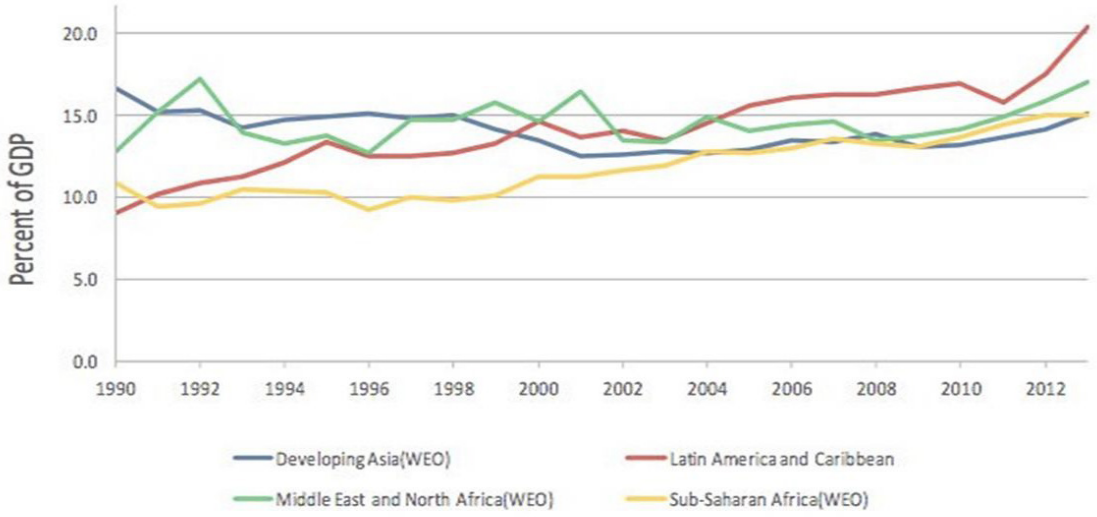
Source: *Development Initiative, 2013*

Post-2015, it is expected that domestic resources will drive development as they considerably outweigh external sources (DI, 2013). Meanwhile, projections show that countries with lowest government spending will continue to face resource constraints due to small overall tax base, low capacity to collect taxes, high share of informal economy and major illicit flows (EP, 2014). Thus, mobilizing domestic resources will be crucial. These measures include better taxation, more efficient public expenditures and investments, improved collection of revenues from natural resources, and improved government expenditure efficiency (World Bank, 2013).

2.1.1. Improving taxation

Tax revenues provide 10–14% of GDP in low income and 20–30% of GDP in middle-income countries (DI, 2013 and ICESDF, 2014). As the main source of government resources in many countries, tax revenues are an important source for financing the implementation of sustainable development objectives (OECD, 2014).

Figure 21: Trends in Tax Ratios in Developing Countries



Source: *Development Committee, 2014*

An OECD calculation show that improved tax collection systems would generate an additional USD 5 billion in Low-Income and Low-Middle Income countries (EP, 2014). The challenges to be addressed include an extensive informality in various sectors, weak tax administration and lower intentions for taxpaying, high corruption rates, tax evasion by multinational enterprises or tax avoidance by state-owned ones, a weak financial sector and pressures from trade liberalization, and international tax competition (UNTT, 2013 and OECD, 2014).

Table 6: Challenges of major tax revenues in developing countries

Tax type	Share in national taxation	Challenges to collection
Value added tax	25% of tax revenues at an average level (in 150 developing countries)	Challenges include low taxation thresholds, extensive exemptions, insufficient awareness; ineffective implementation and negative effect on other taxes i.e. trade taxes.
Income taxes from corporations	Average 17% of total tax in developing countries	In the long-term these revenues may not be secured, since in many countries they originate from extractive industries.
Personal income taxes	Relatively low share (compared to developed countries)	Mostly originating from public sector and employees of multinational companies. Considerable losses from tax avoidance by the very rich.

Source: *UNTT, 2013*

Tax revenue collection can be improved in various ways:

- Broadening the tax base and increasing the number of tax payers: via elimination of exemptions and improved compliance for personal income taxes or introduction of VAT with higher thresholds;
- Improving the administration and collection of taxes: by better information sharing and transparency and incentivizing tax officials;
- Increasing voluntary tax compliance and reducing informal activities: with the introduction of better taxpayer segmentation and paying more attention to large tax payers (World Bank, 2013 and UNTT, 2013).

To raise additional revenues, innovative tax types can be considered:

- Greening the tax system: Tax is a way to achieve sustainable development as it makes unsustainable practices more expensive. Since tax systems are less advanced in many developing countries, there is a window of opportunity to introduce innovative, green taxation elements into tax systems, i.e. put an adequate price and underlying tax on the utilization of various eco-system services (ENVforum conference, 2014). Such green taxation elements have already been introduced in many European countries and are being considered in China and many other Asia-Pacific countries. Among ASEM, several countries introduced a tax on the carbon content of fossil fuels, including Denmark, Finland, France, Iceland, Ireland, Norway, Slovenia, Sweden, Switzerland, Spain, and Japan.

Box 12: More efficient use of aggregates in construction in the UK

The UK Landfill Tax was introduced in 1996, with the aim of internalising the environmental costs associated with landfill; minimising waste; promoting recycling; and bringing UK landfill costs in line with neighbouring countries. The Aggregates Levy was introduced in 2002 to ensure that the environmental impact of aggregates extraction was more fully reflected in prices, and to encourage a shift in demand away from primary aggregates towards alternatives such as recycled construction and demolition waste, and china clay waste.

Before 1995 aggregates consumption and construction output was closely correlated. Analysis implies that over the period 1995–2010 an absolute decoupling was achieved with an overall increase in construction output and an overall decrease in aggregates consumption. The trend in absolute decoupling of aggregates consumption from construction output is consistent with the introduction of policy mix elements related to the Landfill Tax and the Aggregates Levy. The corresponding substitution of primary aggregates with secondary and recycled aggregates has contributed to a reduction in the environmental externalities associated within the aggregates industry. The Aggregates Levy acted as a stimulus towards environmental improvements, and the combination of the Aggregates Levy and the Landfill Tax are credited with giving a signal to producers of the need to change production methods and practices. The policy mix managed to better internalise externalities of aggregates production, as well as those related to landfilling.

Source: *Based on Bicket, M. and R. Salmons (2013) & Mazza L. et al. (2013)*

- Raising tobacco taxes: The harmful health effects of tobacco consumption are especially severe in developing countries. An increase in tobacco taxes could help poor households protect their health and increase their income by avoiding spending on tobacco products. It was estimated that in China, tobacco consumption represented a cost of USD 28.9 billion to the economy in 2008 and in India 25% of all healthcare expenses were spent on tobacco-related diseases (Savedoff and Alwang 2015). WHO estimations suggest that each 10% increase in the real price of tobacco products results in a 4% decrease in consumption. Besides its positive impacts on households' health and income, tobacco taxes also generate additional revenues, i.e. a 51% increase in retail prices would result in additional USD 10.4 billion in tax revenue in China (Savedoff and Alwang 2015).

2.1.2. Enhancing collection of revenues from natural resources

In resource rich countries a considerable share of government revenue originates from natural resource extraction. This implies that in the long-term these countries may face risks associated with volatile commodity prices and the finite nature of their resources (EP, 2014). To tackle these challenges, governments need to improve their capacity to manage their national resource wealth, to negotiate the contracts, collect the revenues and monitor project implementation (UNTT, 2013 and World Bank, 2013).

To improve revenue collection, countries can join international initiatives, such as the Extractive Industries Transparency Initiative (EITI) and environmental accounting initiatives, which provide guidelines for the management and accounting of natural resources. Some ASEM countries have already joined the EITI. Kazakhstan and Mongolia are complying members, while Myanmar, the Philippines and the United Kingdom are candidate countries.

Governments should also consider innovative financing solutions. Through the establishment of Sovereign Wealth Funds (SWFs), countries can save income from natural resources for future generations or create commodity stabilization funds to balance volatile revenues from commodity prices. Other mechanisms, such as resources for infrastructure contracts can ensure that the income from natural resources is directly utilized for the development objectives of the country.

Box 13: The resource for infrastructure financing model (RfI)

With RfI agreements, governments can exchange natural resource extraction rights with private companies for building key transport, telecommunication, energy, and water infrastructure. These agreements have been mostly applied in African states, with a value of commitments at least USD 28 billion. Such mechanisms can help low-income countries overcome domestic capital constraints for financing infrastructure investments. At the same time, these investments can represent a high risk both for the governments and the investors. It is therefore important that such contracts are tendered, implemented on a competitive basis and in compliance with transparency and accountability rules.

Source: *World Bank, 2013*

2.1.3. Rationalizing government spending

To mobilize further resources for development objectives, governments should also improve their budget management practices, reform public procurement and subsidy provision (World Bank, 2013).

Improved budget management practices: For efficient budget management in general, good planning, proper spending, and thorough audit are all essential. The spending should be precisely linked to development objectives, be transparent and accountable, promote participatory principles (e.g. by decentralization of funds), and take social and environmental impacts into consideration (ICESDF, 2014). Additional savings can be achieved by improving the efficiency of public administration, state-owned enterprises, and social services (World Bank, 2013).

Improved management of public debts: Countries have been progressively financing development from issuing debts on international market in national currencies (ICESDF, 2014). While this solution may boost progress in the shorter-term, especially in smaller, low-income states, it poses further risks in ensuring macroeconomic stability in the long-term. Since repayment of sovereign loans can impose a considerable burden on national budgets, countries with high debt levels may spend a large percentage of their resources to service debt and will be forced to direct resources away from financing sustainable development objectives (UNTT, 2013).

Box 14: Effective management of public debts

To effectively manage their public debts, governments can regularly assess alternative borrowing options, better manage the liabilities, and increase long-term bonds to domestic investors. The World Bank–IMF Debt Sustainability Framework (DSF) was created to support low-income developing countries in tackling such challenges (ICESDF, 2014).

Reform to public procurement: Reforms to public procurement can ensure savings, better provision of services, improve environmental performance, and increase support to domestic industries (World Bank, 2013). The ICESDF (2014) also suggests that public procurement practices should be further aligned with sustainable development objectives. Since many developing countries face capacity and technology limitations, e-procurement is a promising solution to tackle such challenges (World Bank, 2013).

Box 15: Environmental reform to public procurement

To enable low-carbon development and a further reduction in the GHG emissions of Poland, the country introduced various measures to modernise the public sector. Reforms also concerned greening of the public procurement with the introduction of obligatory environmental criteria in all procedures.

Source: *Kassenberg et al., 2015*

Reform to agricultural and fuel subsidies: While subsidies often support social development objectives, it is widely recognized that excessive agricultural and/or fuel subsidies often cause economic and environmental damages to countries by promoting inefficiency or overexploitation (ICESDF, 2014 and UNTT, 2013b). The Worldwatch Institute (2014) estimated that in 2012, agricultural subsidies in the top 21 food-producing countries were responsible for almost 80% of global agricultural value added, totalling USD 486 billion. Globally, the International Energy Agency (IEA) estimates that fossil-fuel consumer subsidies exceeded USD 548 billion in 2013 (IEA, 2013). More recent estimations also suggest than these subsidies were dramatically underestimated and in fact reached USD 4.9 trillion in 2013, and are projected to reach USD 5.3 trillion in 2015 (Coady et al., 2015). Elimination of harmful subsidies could liberate considerable revenues for financing sustainable development objectives (ICESDF, 2014). By cutting ineffective fuel subsidies by 50% and agricultural subsidies by 25%, countries could mobilize USD 395 billion funds annually.

Box 16: Energy subsidies in Asia

In low and low-middle income countries in Asia, a considerable share of government spending is utilized on energy subsidies. For example, subsidies on fuel alone reached nearly 2% of GDP in the fiscal year 2011/2012 in India and energy subsidies exceeded 3% of GDP in Bangladesh, Indonesia, and Pakistan in 2011.

Rationalizing subsidies is therefore a key reform to raise public resources for financing sustainable development investment in the region. According to estimates from the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), savings from these subsidies would be sufficient to finance a comprehensive policy package comprising income security for the entire elderly population and all those with disabilities. In India and Bangladesh, the money would be sufficient to provide universal access to health and education.

Some of the countries in the region have already launched reforms to fossil fuel subsidies. China adopted a progressive three-tiered electricity pricing system for households that mostly affect the largest consumers. Viet Nam also took initial steps towards fossil fuel fiscal reform, by setting energy intensity reduction targets, by committing to a roadmap for fossil fuel phase-out via a Green Growth Strategy and Action Plan as well as by creating electricity markets. In 2015, Indonesia introduced a massive reform on fossil fuel subsidies, by removing or maximizing subsidies and allowing fluctuation of prices according to market conditions. In parallel, it took steps to mitigate the negative impacts of the measures on poor households.[2]

Previous experience in the region has shown that addressing vulnerable groups during fossil fuel subsidy reforms can be a key to the success. Protest broke out in Myanmar in 2007, when the government decided to fully remove fossil fuel subsidies, resulting in steep increases in diesel and gas prices.[3]

Source: *Gavigan et al, 2014; Bárány & Grigonytė 2015; UNDP, 2014*

Payments for eco-system services: Direct cash transfers, if made conditional, should be considered as a more efficient way of redistributing wealth and reducing income inequality and promoting sustainable development. Payment schemes for eco-system services, which are mechanisms aimed to encourage conservation of landscapes through cash transfers to poor farmers, provide additional financial resources to farmers and directly results in improved social and environmental outcomes.

Box 17: Payments for ecosystem services in Viet Nam

Viet Nam is a pioneer in exploring payment schemes for eco-system services for watershed conservation and forest management. The Ministry of Agriculture and Rural Development introduced a Pilot Policy for Payment for Forest Environmental Services in 2008 and applied it in two pilot areas. The policy requires hydropower plants; water supply and tourism companies to pay a small amount for environmental services provided by the forest. The payments are then distributed to local farmers in respective watershed areas, who in exchange maintain and improve the state of the forests and soil, i.e. by preventing forest fires. Research suggests that these measures had positive impacts on poverty and deforestation.

Source: *Suhardiman, 2013 and Xuan and Santiago, 2010*

As showcased above, a variety of ways exist in which governments can reform and improve government spending. If such reforms are to have a chance of being adopted and of being successful, initiatives that promote capacity-building of governments and civil society, as well as improvements to spending transparency and accountability, will also have an very important role to play.

2.1.4. Tackling illicit financial flows

Improvements in transparency and accountability are crucial elements in developing more effective government in this domain.

As expressed by sub-goal 11.5 in the Small Planet the reduction of illicit flows of money and goods, tax evasion, bribery, and corruption should be an essential element of the overall SDG implementation (Pinter et al., 2014) because in many countries tax avoidance and evasion and illicit financial outflows can remove significant resources from development (EP, 2014 and ICESDF, 2014).

Box 18: Key facts about illicit financial flows

Illicit flows have risen over the last two decades. Illicit financial outflows are estimated to have reached USD 808 billion in 2010 including USD 150 billion in losses due to tax evasion and avoidance (EC, 2013). Global Financial Integrity estimated that illicit financial outflows from developing countries have further increased since then and totalled USD 991 billion in 2012.

In those countries where such flows are monitored, they typically reach or exceed 5% of GDP (EP, 2014 and UNTT, 2013).

The problem is especially severe in the Asia-Pacific region. It is estimated that in 2001–2010, the region accounted for 60% of the total of illicit flows from developing countries (Kar and Freitas, 2012).

In many LDCs, illicit flows can outpace the total amount of ODA flows (UNTT, 2013).

If half of the illicit financial outflows from developing countries were cut, an additional USD 400–500 billion could be safeguarded and invested in development objectives. To curb illicit flows, both stronger political will and improved technical capacity are necessary. Governments should accelerate and strengthen actions to fight against money-laundering and corruption, improve asset recovery initiatives, as well as improve exchange of country information on related matters (ICESDF, 2014 and OECD, 2014).

In developed economies, attempts must be made to reduce illicit flows in extractive industries. These countries currently require investor companies to make a public disclosure if payments to national governments are in excess of EUR100,000 (UNTT, 2013). At the same time, more efforts are needed from developed countries to improve regulation to prevent capital flight to tax heavens (e.g. in Europe and overseas territories of European countries).

In developing countries, there is growing awareness of the risks posed by transfer pricing. To address trade mispricing practices of multinational companies, which represent a major share of illicit outflows in low-income countries, governments should improve national legislation and audit practices (UNTT, 2013). While the capacity and the technology is still largely missing to effectively combat it, already, about 20 Asian countries have adopted transfer-pricing rules in their tax laws, mostly based on OECD guidelines.

Many developing countries also face challenges in administering and collecting tax revenues. Tax evasion, tax avoidance and revenues from illegal activities, are as well considered as major barriers in domestic resource mobilization. To support developing countries in efforts to pursue more efficient taxation, development financing can be used to tackle tax competition and reduce illicit financial flows, to implement tax reforms, and to improve tax collection capacities (ICESDF, 2014 and OECD, 2014).

Besides national actions, strong and effective international co-operation among countries is also required to effectively address challenges related to tax avoidance and to illegal trafficking of natural resources (ICESDF, 2014).

2.1.5. Introducing national environmental accounting initiatives

Transparency is needed in terms of financial propriety but also in terms of environmental concerns. Costs of natural resources should be brought upfront and eco-system valuations should be integrated into the financial system. By considering ecosystem services as an element of the economic system, developing countries could be supported to reform their tax system with environmental considerations at its core (ENVforum conference, 2014).

Based on the SEEA framework, many countries have started preparations of environmental accounts. Experience also shows that even developing countries, with less advanced statistical systems, such as Indonesia and the Philippines, were able to launch a SEEA framework and introduce natural resource, material flow and discharge accounts into their national accounting framework (UN, n.a.). Examples from Europe and Asia include:

- European Union: The EU launched its first strategy for environmental accounting in 2008 and has required its member states to prepare environmental accounts since 2011. These accounts include data on environmental taxes, air emissions, and material flows. Such statistics enable the EU to calculate and compare a variety of innovative measures across all member states, including resource productivity and domestic material consumption indicators. In 2011, the European Environment Agency also introduced an Experimental Framework for Ecosystem Capital Accounting in Europe (EEA, 2011). In the future, the EU also plans to introduce measures to collect information on energy flows, environmental expenditures and environmental goods and services (GLOBE, 2014).

- United Kingdom: The UK has published natural resource accounts since the 1990s according to the SEEA framework and it utilizes them as extensions to the national economic accounts (GLOBE, 2014). Between 2009 and 2011, a National Ecosystem Assessment was carried with an integrated model to assess both the drivers and consequences of land use change (UK NEA, 2014). In addition to the valuation of the natural capital, this initiative also provided an overview of existing information on ecosystem, identified knowledge gaps, and developed a decision-support system for policy-makers to integrate environmental considerations into regulations, strategies, and action plans. In 2011, as a follow-up to the Assessment, a Natural Capital Committee was established to advise the government of UK on the state of the country's natural capital (UK NEA, 2014).

- Indonesia: The country has abundant natural resources and more than one quarter of its wealth originates from these resources (WAVES, 2014). Collection of natural resource statistics and preparation of natural accounts started in the 1990s for the nine most prominent natural resources of the country: crude oil, natural gas, coal, bauxite, tin, gold, silver, nickel ore, and timber wood (CLOBE, 2014). Within the framework of the WAVES partnership, Indonesia is currently working on updating its natural accounts and developing new accounts on land and water (WAVES, 2014).

- Philippines: The country launched the SEEA initiative in 1998 and started collecting data for accounts on forests, fisheries, water, mineral and energy, and land and soil. To co-ordinate the preparation and integration of environmental statistics, an Inter-Agency Committee on Environment and Natural Resources Statistics was established, and in 2012, the SEEA was adopted to support preparation of policies (UN, n.d). The Philippines has been successful in integrating outcomes of natural accounting processes into various strategies and policies, such as the 2011–2016 Philippine Development Plan and the National Climate Change Action Plan (Philippines WAVES Steering Committee, 2014). In addition, the government monitors its natural capital assets during its budget reviews and collects and reviews budget elements related to climate change. The Philippines also joined the WAVES partnership with the aim of supporting government efforts to effectively manage the country's natural resources. The initiative in the Philippines focuses on four strategic area: minerals, mangrove, ecosystems at two sites, and on the development of an Adjusted Net Savings indicator which includes the value of natural capitals (WAVES, 2014 and GLOBE, 2014). The project started in 2013 with extensive stakeholder consultation and with the preparation of feasibility studies to discover the major policy challenges related to the assessment of strategic natural resources. (WAVES Philippines Steering Committee, 2014). The preparation of natural capital accounts is currently on-going.

2.2. Better utilization of private resources for development financing

Private resources are not typical sources of development financing, and thus represent an untapped potential for financing the SDGs. Countries should consider the utilization of various traditional private resources for development financing:

- FDI: As discussed in Chapter 1, more than half of all FDI is now targeting developing countries. These flows tend to be concentrated in middle-income countries and are rarely utilized for long-term development objectives. To address these challenges, governments could strengthen and make co-operation more sustainable between multinational enterprises and local production (ICESDF, 2014). In this regard, promoting initiatives, such as the Global Compact and the ILO labour standards, have important roles to establish basic principles for future investments.

- Bond-financing: This mechanism has strong potential in supporting long-term infrastructure investments. The expansion of local currency bond markets is especially promising, as they have remained stable during internationally volatile periods and performed strongly during the last five years (World Bank, 2013). Upon creation of the necessary institutional and regulatory system, local-bond markets can also support investments in sustainable development objectives (ICESDF, 2014 and UNTT, 2013). The World Bank (2013) foresees a rapid growth in international and local bond financing of development objectives in the coming years.

Box 19: World Bank Green Bonds

By issuing triple-A rated fixed income bonds, the World Bank raises funds from fixed income investors. The income from the bonds then provides financing to climate change mitigation and adaptation projects. Launched in 2008, the Green Bonds have raised USD 6.4 billion via 68 transactions. Project examples include renewable energy and energy efficiency projects, waste management and agriculture, forestry development, and water management infrastructure.

Source: *World Bank Treasury, 2014*

- Remittances: Remittances targeted towards development objectives can be matched with ODA funding. Diaspora bonds, or remittance bonds, can also be issued to co-finance transport, education, healthcare, or energy infrastructure projects (OECD, 2014; EC, 2013 and World Bank 2013). In addition, reductions in remittance transfer costs would result in considerable savings. The G20 have already launched efforts to keep these costs below 5% and as a result, the average costs have fallen in recent years. In the future, these costs could be further lowered by increasing transparency and competition and by improving technology of transfer services (World Bank, 2013 and ICESDF, 2014).

2.2.1 Attracting institutional investments

It is estimated that institutional investors, hold approximately USD 75–85 trillion in assets. Primary investors, such as pension funds, insurance companies and SWFs hold USD 64.3 trillion of the total assets (UNTT, 2013). At the same time, only a small share of these funds is invested into long-term infrastructural development: i.e. less than 1% of these assets target low-carbon investments (UN GA, 2014 and World Bank, 2013). If governments introduce the necessary policy reforms that can support institutional investors in investing into long-term infrastructure investments, these sources could become an important source for financing the implementation of certain SDGs. Moreover, since a considerable share of funds are owned by developing countries, in some cases, they can self-finance certain development objectives and become the source of their own financing needs.

Table 7: Future potentials and good practices of institutional investors

	Description	Future potentials	Good practices
Sovereign Wealth Funds	Country-owned investment funds established for preserving wealth for future generations, thus especially well-suited for long-term infrastructure investments (UNTT, 2013). In 2013, more than USD 6 trillion was managed by such funds (OECD, 2014).	Rapidly growing in developing countries and some of the largest funds are owned by emerging economies. SWFs can provide a long-term self-financing option for future investments (World Bank, 2013).	Countries with the largest SWFs are in Asia, the Middle-East and Europe: China (three funds): USD 1303 billion Norway: USD 737 billion UAE Abu Dhabi (three funds): USD 740 billion Singapore (two funds): USD 420 billion Kuwait: USD 386 billion Hong Kong: USD 326 billion
Pension funds	In 2013, pension funds were estimated to total USD 33.9 trillion. They traditionally keep their assets in liquid instruments but could invest 40% of their funds into 10 year liabilities and 60% into 20 year liabilities (UNTT, 2013).	Developing countries are in the process of reforming their pension system and a tenfold increase is expected in their value by 2050 from USD 2.5 trillion (ICESDF, 2014 and World Bank, 2013). Although these funds are primarily used to cover sovereign debts they can increasingly be used for infrastructure development.	In the United Kingdom, a Pension Infrastructure Platform was established to boost financing of infrastructure projects from pension funds (ICESDF, 2014).
Insurance companies	Insurance companies held USD 24.4 trillion in assets in 2012.	Life insurance companies are especially suited to invest in long-term bonds (UNTT, 2013).	Within the ClimateWise group, which was launched in 2006, 40 insurance companies pledged to focus on the risks of climate change risk (UNTT, 2013).

Although institutional investors increasingly consider socially and environmentally responsible investments, there is a lack of appropriate investment projects, limited knowledge of investors, and a lack of stable policy and regulatory regimes. These factors all hamper the growth of this investment opportunity (ICESDF, 2014 and World Bank, 2013). Despite this, a variety of sustainable finance initiatives have been launched. However the take-up of has been slow and most of these funds are still in liquid assets (UNTT, 2013 and ICESDF, 2014). To address such challenges, governments could promote concessions, establish public-private partnerships, and provide initial funds to attract institutional investors to invest in development and environmental objectives (World Bank, 2013).

Box 20: United Kingdom: Green Investment Bank

By using public funds, the Government of the United Kingdom created the Green Investment Bank with GBP 3.8 billion in capital to finance energy efficiency, waste, bioenergy, and offshore wind investments in the UK and thus support the country's transition to a low-carbon economy. In addition to financing exclusively green investments, the bank operates according to traditional market-principles thus it does not provide concessional loans or grants, but instead requires commercially viable return on investments. The bank also aims to mobilize additional private sources by strengthening the country's green investment market.

Source: *Green Investment Bank, 2014*

2.2.2. Catalysing private financing for development objectives

To further catalyse private financing, countries should consider using international public finance provided by different donors to leverage private resources (ICESDF, 2014).

More traditional blended finance instruments include loans with favourable interest rates or public-private partnerships. In addition, blended financing to stimulate private financing for development objectives can also be utilized in various innovative ways, such as guarantee and risk insurance mechanisms or performance-based initiatives.

- Guarantees and Risk Insurance: Provided by public lenders or MDBs, guarantees and risk insurance schemes can reduce the risk for investors in investing in long-term infrastructure development projects (World Bank, 2013). For instance, the Multilateral Investment Guarantee Agency supports development-focused initiatives by providing political risk insurance guarantees to private sector investors and lenders (MIGA, 2014). Such guarantee instruments are also being developed for other types of risks i.e. natural catastrophes (World Bank, 2013).

Box 21: The Caribbean Catastrophe Risk Insurance Facility (CCRIF)

The Facility is a catastrophe insurance pool for 16 Caribbean countries. It was established by the World Bank and the government of Japan and was funded through various donor countries and membership fees from the partner countries. The Facility aims to provide financial support to Caribbean countries after natural disasters by offering earthquake and hurricane catastrophe insurances at below market prices. Since its establishment, the Facility has provided eight payments to seven countries of a value of USD 32 billion.

Source: *CCRIF, 2014*

- Performance-based instruments: To incentivize private sector involvement in development financing, governments can commit to provide payments to the private sector in case of fulfilment of certain tasks or objectives (ICESDF, 2014). Examples of such instruments are presented in Table 8.

Table 8: Examples of performance-based instruments for development financing

Name of mechanism	Description	Example
Pull mechanisms for innovation	To support innovation the instrument links payments to specified innovation. Such mechanisms can overcome market failures resulting from underestimation of real social value and imperfect information (World Bank, 2013).	The AgResults Initiative uses public funds to promote innovations for sustainable agriculture practices in developing countries. The mechanism offers results-based economic incentives to competing private actors for the adoption of new agricultural technologies. In Viet Nam, a pilot project was launched to support agricultural producers to implement GHG mitigation measures. During a competition period, producers will compete for prices by working towards reducing their emissions compared to their baseline.
Advance Market Commitments	Donors commit to purchase vaccines to incentivise manufacturers to develop and produce vaccines. Similar initiatives are under consideration to incentivize small-scale energy generation, to address land, water or climate change adaptation challenges. The mechanism could also be applied in other areas with high innovation potentials and upfront investment needs (UNTT, 2013)	The first pilot was launched in 2009 by six donors to incentivize pharmaceutical companies to produce and deliver pneumococcal vaccines to developing countries. By 2012, 6.9 million vaccines were delivered to 9 countries.
Social impact bond	Returns for private investors are linked to the achievement of certain social outcomes.	The mechanism was first tested in 2010 in the UK in the criminal justice sector. Currently the methodology is being piloted to introduce development impact bonds, which can be applied for development objectives (Leading Group of Experts, 2014)

2.2.3. Building on local private domestic private resources

Private domestic resources can also contribute to development objectives. If domestic financing is more diversified and made more easily and widely available to SMEs, microenterprises and other vulnerable groups, long-term domestic development financing can be secured.

The financial markets in developing countries are less developed and diversified and thus often dominated primarily by banks. Development financing from private domestic resources is not extensive, since banks are in general more suitable for shorter-term financing, e.g. for loan provision, and less to invest in longer-term development projects (ICESDF, 2014 and UNTT, 2013).

In the context of domestic development financing, it is crucial that access to financial services is provided to all entities with limited resources, such as SMEs, microenterprises as well as households and individuals from marginalized groups (ICESDF, 2014):

- Improved access of SMEs to financing: In developing countries, SMEs are one of the main economic drivers, but many of them lack access to even basic financial services, i.e. to credit. Since the financial markets function with limited capacity in many countries, national development banks should introduce low-interest government loans or other support mechanisms (guarantees, interest-rate subsidies) to encourage commercial banks to offer financial services to SMEs (ICESDF, 2014).
- Improved access to marginalized groups to financing: Currently half of the working age population does not have access to banking services, including, savings, credit and insurance. Their needs can be addressed through microfinance institutions, cooperatives, postal or savings banks, as well as commercial banks. In addition, the improvement of ICT technologies, specifically mobile banking, can further lower transaction costs. Education can also improve financial literacy of people, while strong regulation can ensure consumer protection (ICESDF, 2014).

To ensure a fair and equity based domestic financial market and to limit volatilities, strong regulatory frameworks will be essential. For example, the European Union issued the Capital Requirement Directive IV to ensure that SMEs can access credit with reduced capital costs (ICESDF, 2014).

Besides a strong regulatory framework, governments should also create and maintain a favourable political and economic environment to encourage private investments into infrastructure and social development objectives. Furthermore, it will be important that governments promote the integration of sustainability principles into the economic system.

3. COSTS AND BENEFITS OF IMPLEMENTING SDGS IN SELECTED SECTORS

"Financing needs for sustainable development are high, but the challenges are surmountable"

UN Secretary-General Ban Ki-moon at the opening of the Financing for Development Conference.

Key points of this Chapter

- Realization of the SDGs will not be cheap with estimates projecting a cost range between USD 5–7 trillion. Developing countries are projected to require and annual investment need of USD 2.5 trillion.
- Countries should prioritize and implement the most cost-efficient SDGs targets.
- Bottom-up, country-level cost assessments will need to be conducted to support financial planning for implementation.
- Existing cost-benefit analysis in Europe and Asia have shown that:
- complex programs that focus on inequality reduction can better tackle poverty;
- food security can be increased by adopting sustainable agriculture approaches;
- carbon taxes can successfully lower GHG emissions while providing stable government revenues;
- prevention measures for natural disasters are more effective than disaster management.

In this Chapter a brief overview of existing cost-benefit analysis assessing SDGs implementation is presented. This includes a review of the potential costs and benefits of selected SDG-related targets of poverty reduction, food security and agriculture, as well as energy and climate change. Also outlined are case studies showcasing how country-level analysis of development goals have been carried out in the field of poverty reduction.

3.1 The need for cost-benefit analysis of SDGs

Besides understanding and mapping the landscape of development financing, governments, donors, and other actors, who are integral to the implementation of SDGs, will need to be able to adequately plan and allocate development financing resources. This effort will require having the estimation of costs for implementing SDGs from early on to ensure appropriate implementation mechanisms.

To address this challenge, cost-benefit analysis (CBA) can provide a useful guidance for better understanding of the costs that it will take to achieve certain SDGs and the potential benefits they can bring to specific countries. With this, they can help prioritizing those targets and implementation measures that can result in the highest benefits with the lowest investments and support governments, donors and other actors, who are integral to implementing budget planning.

3.2 Existing SDG cost assessments

To calculate what the SDGs will cost to implement, various international and non-governmental organizations (NGOs) have launched efforts to conduct global level cost assessments and prepared disaggregated cost assessments on different topics (See UNTT, 2014; Greenhill et al, 2014; UNCTAD, 2014; UN SDSN, 2015). With regard to sectoral needs of SDG implementation, these reviews provide various estimation ranges, depending on the specific targets and the relevant implementation costs taken into consideration.

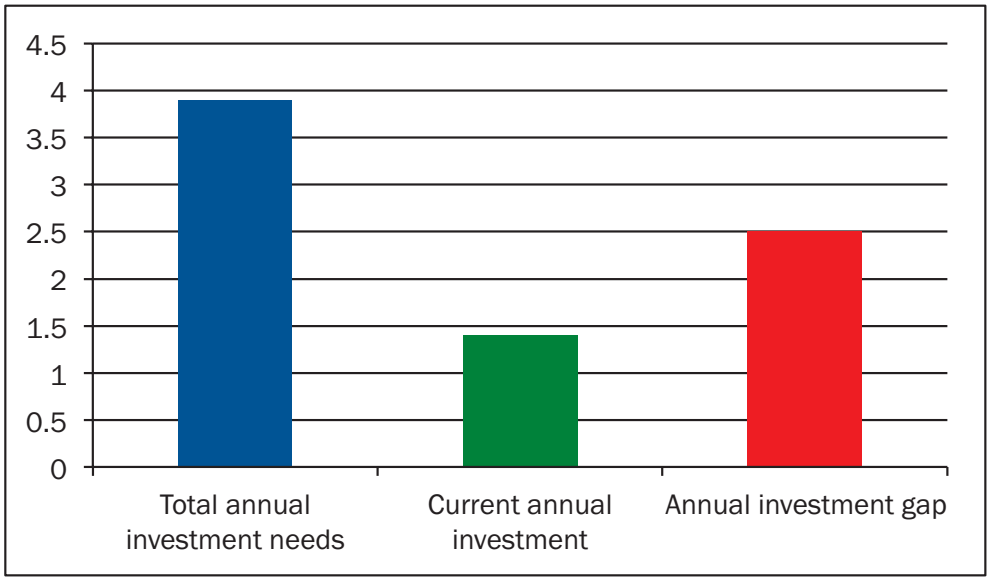
Table 9: SDG annual investment requirements in various sectors according to recent cost assessment reviews (billion USD)

	Greenhill & Ali - ODI (2014)	UNCTAD (2014)	UN SDSN (2015)
Food security and agriculture	50.2*	260	248
Health	37	140	51–80
Education	38	250	22
Access to water and sanitation	26.8	260	27
Climate change and energy	434–934	810–1,470	474–814

**Food security only*

Based on sectoral assessments, the UNCTAD (2014) estimated that the total investments needs to achieve the SDGs by 2030 would range between USD 5–USD 7 trillion per year at the global level and between a total of USD 3.3–4.5 trillion per year in developing countries. With a current level of investment estimated at USD 1.4 trillion in these sectors, developing countries face a mid-range USD 2.5 trillion yearly SDG investment need.

Figure 22: Total annual SDG investment needs in developing countries (mid-range) versus current annual investments.



Source: *UNCTAD, 2014*

These figures indicate enormous financing needs. It would require 3.33% of worldwide GDP to fill the annual investment gap.

While these estimates can help to provide barometers of scale, all reviews and studies they are based upon, highlight that these estimations are imperfect:

- Studies have only been conducted for certain targets — e.g. reducing poverty, but not inequality. Consequently, even the ranges of cost per goal area provided above, do not adequately reflect the full range of targets for the SDGs, and thereby cannot encompass the full costs of each goal area.
- Several estimations are based on country- or region-level data, then up-scaled to create international estimates. For the most part, while based on existing databases, the estimations are little more than 'back of the envelope' calculations.
- The cost estimations available are a useful tool for comparison, but are themselves not fully comparable. Existing cost analyses tend to have different timeframes, with not all data for 2015–2030, and even annual figures needing adjustment depending on the timeframe used.

- With regards to overall estimates of SDG investment needs, the estimates for different sectors cannot simply be 'added up' to come to a total for the SDGs overall, as many interventions and goal areas are interrelated with a large amount of potential crossover.

Due to these limitations, estimations based on international studies should be treated with caution, and only as a non-exact, guiding tool. Given that each country and region within a country have very different characteristics and starting points, in reality, the costs of implementation will undoubtedly vary widely. As a UNESCAP (2013) assessment for the Asia-Pacific region showed, each country has vastly different starting points that will affect the amount of effort and financing needed to achieve different goals. At the global level, achieving renewable energy goals may be in the upper cost range, but at a country level the picture may be very different. To be truly useful, therefore, country-level cost estimations are the most relevant, and should be conducted in order to see where and how resources should be utilized to achieve national priorities.

To conclude, while at this stage such country-level sectoral assessments are largely missing, the ideal method for assessing the costs of implementing SDGs (as a whole, or individually) would be through bottom-up country assessments (McArthur 2014).

3.3 Sectoral reviews of for selected SDGs

Based on the priorities of the Asia-Europe Meeting (ASEM), the goal areas to be covered by this section are: poverty eradication, food security and agriculture, and energy and climate change. For each of these sectorial analyses, the primary reference points are ASEF's set of proposed goals and indicators (Pintér et al., 2013), and the Outcome Document of the Post-2015 Summit (Transforming our world, 2015).

This study draws on global reviews presented in Chapter 3.1 and on several other sources of data, as not all topics for the ASEM region have been comprehensively covered to date. The aim of this section is to:

1. Provide an overview of existing assessments with an indication of the costs of implementing the SDGs at the global scale;
2. Present available specific data relevant to the Asia-Europe Meeting (ASEM) member countries;
3. Offer national case study examples to showcase the cost and benefits of associated with different SDG targets at the national level.

Note that conducting new cost analyses is beyond the scope of the paper; with the aim instead to outline a foundation upon which specific country/sector cost analyses of goal implementation may be carried out for ASEM member countries.

3.3.1. Poverty eradication

Eradication of poverty has been one of the pioneering aims of the international development agenda, and it is now a core element of the sustainable development agenda.

3.3.1.1. Global goals and targets related to poverty eradication

What is meant by poverty eradication is not fully agreed upon (Barder 2009). In order to streamline efforts and adopt a common metric at the global and national levels, one of the main indicators used to assess poverty reduction efforts are mutually agreed-upon poverty lines.[13] The current global metric for "extreme poverty" stands at USD 1.25 per day, per capita. This figure is based on an average of the world's 15 poorest countries' poverty lines in 2005, adjusted for purchasing power parity (PPP) (USAID 2013). However, more recent studies have suggested that based on current data, this line should be moved up to USD 1.55 per day (Chandy and Kharas 2014).

For the post-2015 period, a wider approach towards poverty reduction has advanced. This new approach includes reference to national poverty lines but extending targets to the reduction of inequality between groups by the provision of social protection systems, access to economic resources, and building resilience for the poor.

[13] While the 'poverty line' metric has been criticized for failing to capture many forms and manifestations of poverty – which is inherently multidimensional, and cannot be calculated via income levels alone (Barder 2009, USAID 2013) – given current data availabilities it is the only existing common metric that can be used to compare global levels of poverty. In reality, national poverty lines differ widely between countries

Box 22: SDGs' targets and ASEF Small Planet targets related to poverty reduction

UN SDG 1: End poverty in all its forms everywhere
1.1 By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than USD 1.25 a day. 1.2 By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions. 1.3 Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable. 1.4 By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance. 1.5 By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters.
ASEF Small Planet Goal 1: Poverty and inequality are reduced.
1.1 Intra- and intergenerational social equity for all groups (e.g., women, youth, elderly, indigenous, minorities) is improved. 1.2 Everybody is above the national poverty line in 2015 by 2030. 1.3 Income inequality and risk of poverty has been significantly reduced with social security system in place.

Source: *Transforming our world (2015) and Pinter et al. (2014a)*

3.3.1.2. Overview of global cost-benefit analysis related to poverty eradication

The breadth, depth, and temporal dimensions of poverty reduction efforts can differ widely, therefore so do the means of implementation, and related costs.

Given current data availability and cost estimates, only the targets related to the eradication of extreme poverty can reasonably be assessed. To calculate this, the starting point is to estimate:

1. How many people are currently below the USD 1.25 per day line: Current projections range from 3% to 18% of the world's total population by 2030 (USAID 2013). Therefore, the achievability and subsequent cost of achieving this target varies greatly.

2. How much it would cost to lift and keep that number of people above the global poverty line. Existing estimations consider the costs of lifting people out of poverty, providing them with essential services and a basic social protection. See Table 10.

Table 10: Calculations for how much it would cost to lift and keep people out of poverty (target 1.1.-1.3)

Target	Theme	Methodology	Additional investment requirement
Target 1.1 concerning people living in extreme poverty	Dollar value of the extreme poverty gap (*Chandy et al, 2013)*	Calculating the dollar transfers required to bridge the gap between those living under the poverty line to USD 1.25 per day	Ranging from USD 62 billion per year in 2012 to USD 26 billion per year in 2030*
Target 1.2 concerning people living below the global poverty line	Essential services budget gap (McArthur, 2014) Global social compact (Greenhill et al, 2015)	Calculating the amount of public funds needed to provide essential services, such as education and health infrastructure.	Ranging from USD 200 billion per year in 2012 to USD 125 billion per year in 2030** (McArthur, 2014) USD 106 billion per year (Greenhill et al, 2014)
Target 1.3 concerning people living below the global poverty line	Global social compact (Greenhill et al, 2015)	Calculating the amount of international funding for a basic national social protection programmes in countries that lack resources for self-funding	USD 42 billion per year

**This number drops as the number of extreme poor is reduced each year.*
***Other calculations suggest that the annual cost of ending extreme poverty based on 'poverty gap estimates' would be USD 66 billion (Chandy and Gertz 2011)*

Source: *McArthur, 2014, Chandy et al, 2013 and Greenhill & Ali, 2015*

Box 23: The last mile problem in eradicating extreme poverty

Despite the calls for 'eradication' of extreme poverty, even some 'best case' scenarios show that many people will still remain behind the global poverty line in 2030 (Chandy et al. 2013). Research found that the more successful poverty reduction efforts are, the more difficult it becomes to maintain these successes. This reflects the fact that as each group of people crosses the USD 1.25 poverty line, those further behind the line must be moved forward in order to cross this line (Chandy et al. 2013). Increasingly, it will be the 'poorest of the poor' that must be lifted out of poverty — and such demographics are much more likely to reside in fragile states and/or conditions and in areas of the world where non-inclusive growth is the norm. This will make the task of lifting the poorest out of extreme poverty even more difficult, and by extension even more costly (USAID 2013).

In addition to the raw cost values of eradicating extreme poverty, the multidimensional aspects of poverty eradication should be considered. Poverty reduction efforts are undoubtedly more successful in more equitable societies while extreme inequality is both counterproductive and inefficient — increasing the chances of conflict and environmental destruction, among other issues (Oxfam 2013, Chandy et al. 2013). Yet recent data shows that global inequality has been steadily rising over the past decades:

- The last 20 years have seen the incomes of the top 1% of the global population increase by 60% (Oxfam 2013). In fact, the individual wealth of the top 100 billionaires in 2012 equates to USD 240 billion — more than the estimated cost of ending extreme poverty.
- Besides general income inequality, gender inequality also constitutes a serious problem. ActionAid research (2015) found that in low-income countries the number of unemployed women with secondary education was double the number of unemployed men with same education level. Furthermore there is an estimated USD 17 trillion annual employment participation and wage gap between men and women globally, out of which USD 4.3 trillion annually is in Asia.
- Extreme poverty is also more likely in rural areas and among vulnerable groups, such as children, old people, minorities, and people with disabilities or people affected by climate change (Greenhill et al, 2015).

To conclude, without a conscious consideration of both equality, and the sustainability of such equality measures, in the means of implementing poverty reduction measures, countries will struggle to achieve long-term sustainable poverty eradication. Therefore, tackling inequality and poverty reduction should be part and parcel of the same effort, as reflected in the ASEF's goal suggestions.

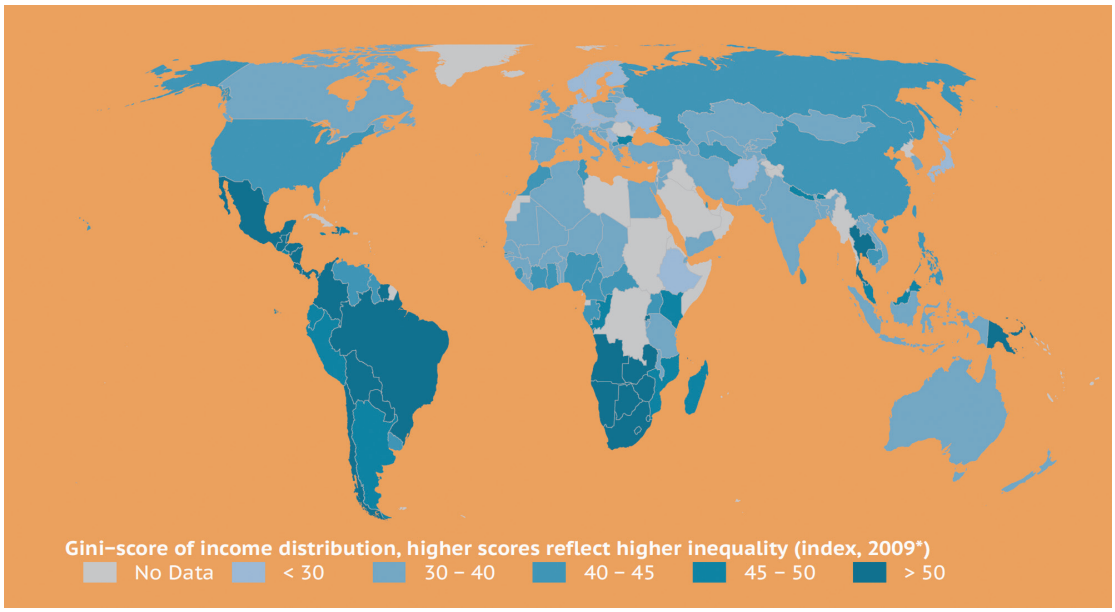
3.3.1.3 Costs and benefits of selected aspects of poverty eradication in ASEM member states

Despite progress, 800 million people still live in absolute poverty in Asia and this number is growing. In the European Union, 80 million people live below the poverty threshold, and that number has been increasing rapidly since the 2008 financial crisis. (Schwarz and Le Thu; 2014).

What is notable from the perspective of ASEM member states is that regardless of the population estimations of exactly how many people are living below the line, the majority of the world's population who still live in extreme poverty are in Asia — especially in China and in India (Chandy et al. 2013 and USAID 2013). Therefore, progress in achieving poverty reduction/eradication targets in the ASEM region will be crucial to achieve poverty goals at the global level.

Moreover, income inequality in the ASEM region has also been increasing and thus the gap between Asia's and Europe's rich and poor has widened in the past two decades. Due to various factors, developing Asia's Gini-coefficient has increased from 39 to 46 while the overall EU figure increased from 29 in 2000 to 30.6 in 2013 (Schwarz and Le Thu; 2014).

Figure 23: Income inequality prevalent throughout the world



Source: *FAO, 2012*

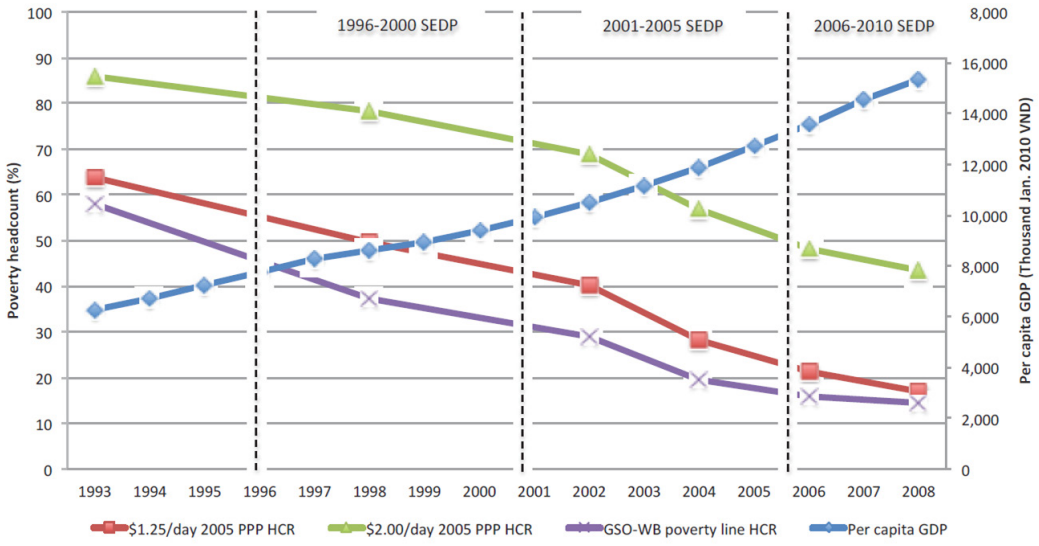
Measures that can contribute to poverty and inequality reduction efforts in the region include investments in social protection programs for the poorest, universal health coverage, and universal primary and secondary education, as well as improved and more transparent taxation (Greenhill and Ali, 2015; Schwarz and Le Thu; 2014).

The cost of these measures will vary according to many factors, including the economic growth model pursued and the extent and types of safety nets accorded to their populations in general, but especially the poor. The costs will also be dependent on the levels chosen for each individual national poverty line.

Case study: How Viet Nam significantly reduced extreme poverty?

In Asia, Viet Nam is among the most successful countries in reducing extreme poverty. With an average economic growth of 7.3% between 1990 and 2010, it reduced its population living below the poverty line from almost 60% to less than 10% (Schwarz and Le Thu; 2014). Viet Nam was also successful in targeting other MDGs addressing non-income dimensions of poverty and related to health, education, and infrastructure-access, and improving composite indicators of well-being such as the UNDP Human Development Index (Vu et al., 2015 and World Bank in Viet Nam, 2012).

Figure 24: Economic growth and poverty reduction in Viet Nam.



Source: *World Bank in Hanoi, 2012*

According to the literature, the success of poverty reduction in Viet Nam lays in a set of coordinated policy measures, focusing on health, education, social security, and micro-credit programmes. There are typically two types of poverty-related policies: general policies for the poor and poor households across countries and specific policies for the poor and poor households in the poor districts, coastal areas and exceptional, difficulty-stricken communes (Pinter et al, 2015).

Viet Nam's most recently completed poverty reduction initiative, the National Target Program on Poverty Reduction, covered the period 2006–2010. While the overall impact assessment of the poverty reduction strategy is not available, several scientific papers exist for the evaluation of cost-benefits for some of these programmes. Studied programs include social protection and health insurance programs, micro-credits provided to the poor, and rural infrastructure development projects. The below table summarizes various findings of these impact assessment studies.

Table 11: Impacts of various poverty reduction programmes in Viet Nam

Type of intervention	Impacts
Social protection programmes	Social insurance and subsidies did not reach the poor effectively but social transfers reduced the incidence of poverty by 2.8%. Another study found that low impacts of public transfers were a result of low coverage and low transfer amounts.
Health insurance	Increased the incidences of contacting health services. Decreased out-of-pocket expenditures by around 36–45%.
Household credit to the poor in the peri-urban areas	17% of the loans were spent on education but the average loan size for education purposes is much smaller than the average loan size.
Micro-credit programme for the poor	Households that lived far from a bank and that were in poor villages were less likely to borrow. The programme had positive impacts on borrowers' income and helped reduce poverty and helped increase household expenditure.
Rural Enterprises Finance project	94.8% of respondents indicated that the project had significantly improved their annual income. Additionally, it contributed to employment creation and expanded the beneficiaries' production or business.
Rural infrastructure and road improvement	Increased production and sales opportunities; boosted non-farm employment; more opportunities for non-farm employment; diversification of products; and increased income and consumption.
Rural grid electrification investment projects	Investments can significantly increase income of households and as a result, expenses on education (Khandker et al., 2009)
Resettlement and migration programme	Half the households thought that their living standards had improved because of the programme

Source: *Nguyen, 2014, Nguyen, 2011, Khandaker et al 2009, Doan et al. 2011.*

Although poverty reduction in Viet Nam has been remarkable, multidimensional poverty challenges may threaten its sustainability. Such challenges include chronic poverty for the most vulnerable groups, resilience of the near poor, urban poverty, and low participation rate in secondary education (Vu et al., 2015).

Case study: Alleviating energy poverty in Ireland with well-designed energy subsidies

In recent years, poor households in Ireland have increasingly faced the problem of energy poverty, which is the inability of households to afford adequate energy for various purposes (DCNER, 2011). In order to alleviate fuel poverty, the Irish Government provided households with EUR 2.5 billion energy subsidies between 2004 and 2011. In 2011 only, it has distributed EUR 465 million among 600,000 households (Scheer, 2011).

It is suggested that energy poverty is influenced by three elements: the income of the households, the price of the energy, and the energy efficiency of the dwellings. These considerations should be included when designing efficient energy subsidies. In Ireland, however, only a fraction of the total energy subsidies (EUR 20 million per year) has been spent on energy efficiency improvement of dwellings (Scheer, 2011). Moreover, the payments to alleviate energy-poverty were not linked directly to the energy efficiency of the buildings (EU Fuel Poverty, 2012).

To support the above consideration with evidence, the potential cost and benefits of various subsidy allocation scenarios was calculated by the Sustainable Energy Authority of Ireland.

Table 12: Cumulative subsidy and upgrade spend (million EUR undiscounted)

	Cumulative spend to year 15	Savings to year 15	Cumulative spend to year 35	Savings to year 35
Business as usual scenario with existing fuel subsidies	6,600	0	15,000	0
Subsidy reallocation, in combination with the existing level of investment in dwelling upgrades	6,473	127	14,556	444
Business as usual scenario with existing fuel subsidies (without supply-side constraint on dwelling upgrades)	8,448	0	16,868	0
Subsidy reallocation, in combination with the existing level of investment in dwelling upgrades (without supply-side constraint on dwelling upgrades)	7,506	942	13,918	2,930

Source: *Scheer, 2011*

The CBA shows that the reallocation of the funds based on income and energy-efficiency improvement needs would make the use of funds more efficient. It would decrease overall energy poverty and result in lifting 11.5% (27,054) of households from energy poverty. The benefit-cost ratios were estimated between 1.9 and 2.9. In the case of an extensive retrofitting program, the study estimated a total cumulative subsidy saving of EUR 2.9 billion over a 35 year period (Scheer, 2011). Moreover, it was also suggested that each EUR 1 million invested in retrofitting programs would create an addition 22.5 jobs.

3.3.2 Sectoral reviews: Food security and agriculture

In recent years, it has been increasingly recognized that hunger on its own cannot be addressed without also considering wider structural constraints, including nutrition, agricultural and land use practices, and access/ distribution issues.

3.3.2.1. Global goals and targets related to food security and agriculture

The food security goal in the MDGs was to halve, between 1990 and 2015, the proportion of people who suffer from hunger. But recognizing the complexity of achieving 'food security', the goal has expanded beyond the aim of ending hunger.

A wider perception is reflected in the current SDGs (Transforming our world, 2015), including a target to end hunger and malnutrition by 2030, and improvements in agricultural productivity and food production by 2030. Moreover, the ASEF Small Planet goals also outline the importance of targeting access to nutritious and sufficient food (including hunger, obesity, and food waste), and conversion to sustainable agriculture.

Box 24: SDGs targets and ASEF Small Planet targets related to food security and agriculture

UN SDG 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture
2.1 By 2030 end hunger and ensure access by all people, in particular the poor and people in vulnerable situations including infants, to safe, nutritious and sufficient food all year round
2.2 By 2030 end all forms of malnutrition
2.3 By 2030 double the agricultural productivity and the incomes of small-scale food producers including through secure and equal access to land
2.4 By 2030 ensure sustainable food production systems and implement resilient agricultural practices that help maintain ecosystems
ASEF Small Planet Goal for Sustainable agriculture, food security and universal nutrition are achieved
7.1. Access to affordable, nutritious and healthy foods at sufficiency levels (tackling hunger and obesity and avoiding food waste) is ensured
7.2. Productivity is increased via accelerated conversion to sustainable agriculture, fisheries and forestry
7.3. Effective land-use planning and management are in place and assure equitable access to land
7.4. The quantity and quality of agro-ecosystems are maintained without destroying natural ecosystems

Source: *Transforming our world, 2015 and Pinter et al., 2014*

3.3.2.2. Overview of global cost-benefit analysis related to food security and agriculture

Finding metrics that can reflect such a diversity of targets is difficult, and consequently so are their cost estimations. Moreover, given the fact that food security and agriculture are themselves highly dependent on external factors — from trade laws to climate change — the costs of achieving such goals will undoubtedly also need to take into consideration costs in other sectors.

At its simplest, calculating the cost of 'ending hunger' has been attempted by several methodologies by calculating the amount of investment needed to improve agricultural yields, through infrastructure and basic services investments. The level of 'zero' hunger has been defined as a point where less than 3% of a country's population is undernourished — implying that beyond this level, undernourishment is a matter of the public health system to intervene, and can no longer be addressed through the agricultural sector alone (Schmidhuber et al., 2011).

Table 13: Overview of methodologies for calculating the cost of hunger eradication

Target	Method	Methodology	Additional investment requirement
Target 1.1	Costs of eliminating world hunger by 2050 (FAO, 2009)	Considers cost of food production, accompanied by poverty eradication policies, particularly in rural areas, and complemented by public safety net programs.	Annually USD 83 billion in addition to existing levels of USD 142 billion on average in developing countries, including both public and private investments (FAO 2009).
Target 1.1	Total financial investments needed to eliminate hunger by 2025 (Schmidhuber et al., 2011)	Calculate the necessary costs for supporting investment in rural agriculture, natural resource conservation, research and development and extension, and rural institutions and safety nets for the hungry	USD 50.2 billion annually by 2025: - USD 42.7 billion for investing in agricultural and rural areas; - USD 7.5 billion for direct expenditure on expanding safety nets
Target 1.1 (and Target 1.3)	Increasing global agricultural yields to ensure basic food supply for all (PBL, 2009).	The amount of investment needed to increase global agricultural yields to a level that could provide all humans with a basic food supply, without increased expansion of agricultural lands.	Less than USD 50 billion per year.

Source: *FAO, 2009; Schmidhuber et al., 2011 and PBL, 2009*

Besides the global prevalence rate of hunger, additional measures should be considered to address various forms of malnutrition (SDG Target 2.2). Additionally, the economic implications of obesity have also been increasing. In this regard, cost-estimations should include investment required to ensure adequate micro-nutrition intake. Annual economic losses resulting from undernutrition in Africa and Asia could reach 11% of GNP (UN System, 2014). Moreover, the estimated economic losses due to obesity could reach 8% of national GNP annually in emerging economies (UN System, 2014).

Apart from investment needs related to hunger eradication, recent assessments considered the costs of additional agricultural improvements to achieve higher productivity and sustainability (UN SDSN, 2015 and UNCTAD, 2014).

Table 14: Overview of methodologies for calculating the overall investment requirement for food security and agriculture measures

Target	Theme	Methodology	Additional investment requirement
Target 1.1 and Target 1.3	Investment requirements for food security and agriculture (UNCTAD, 2014)	Calculate the investment needs in relevant agriculture areas, such as agriculture-specific infrastructure, natural resource development, research, and food safety net.	USD 260 billion over the current level of USD 220 billion.
Target 1.1 and Target 1.3	Food and agriculture (UN SDSN, 2015)	Costs of safety nets, public R&D, extension systems, rural institutions, conserving natural resources, and general agriculture measures.	USD 256 billion annually by 2030: - Food security: USD 46 billion; - Other agriculture: USD 210 billion.

While the majority (over 75% in developing countries) of the agricultural investments originate from private sources, limited opportunities exist for pooling private financing for food security objectives (UNCTAD, 2014 and UN SDSN, 2015). Thus, measures for eradicating hunger will require further mobilization of public financing resources. The majority of these resources (62%) would need to be allocated to Sub-Saharan Africa and South Asia, with countries in South Asia requiring disproportionately higher public investment expenditures to improve its agriculture base due to high population levels. In addition, about 40% of public investment in South Asia would be required to improve infrastructure facilities, particularly those for storage of agricultural produce (Schmidhuber et al., 2011; Greenhill et al, 2014).

3.3.2.3. Costs and benefits of food security and agriculture challenges in ASEM member states

Food security is a major concern for Asia. While the prevalence of undernourishment was decreasing in the last two decades from 23.7% to 13.9% between 1990 and 2010, the Food and Agriculture Organization of the United Nations (FAO) (2012) estimated that 65% of the global undernourished population lives in Asia. Moreover, growing demand for land and the impacts of climate change place additional pressures on agricultural production in the region (Warr, 2013).

The European Union spends a considerable amount of its budget on the implementation of the Common Agricultural Policy (CAP) and its underlying subsidy system. In the 2014–2020 period 40% of its total budget is planned for the CAP. While the EU itself is self-sufficient in food production, increasing concerns have been raised regarding the sustainability of production and consumption and the efficiency of its agricultural subsidy system.

Case study: Costs and benefits of organic farming in Asia and Europe: cases of Pakistan, India and Italy

In 2012, the total organic agricultural land area in Asia was 3.2 million hectares and 11.2 million hectares in Europe. Asia had 9% of the global organic agricultural lands, while Europe's allocation was 30%. Demand for organic products has been increasing in both regions (Willer & Lernoud, 2014).

According to a FAO review (Nemes, 2009), organic farming has various benefits compared to non-organic farming. These include higher economic benefits due to higher pricing, similar production costs (for example Mehmood et al., 2011) and higher resistance to environmental stress. To account for differences between organic and non-organic agricultural practices, various CBAs were carried out in Asia and Europe.

A CBA conducted in the district of Sheikhupura in Pakistan found that the cost and the costs-to-benefits ratio of organic wheat production was lesser compared to non-organic production. Thus, in spite of lower annual yields from organic farming, its benefit-cost ratio was more favourable (Mehmood et al., 2011).

Table 15: Per acre cost of production of organic and inorganic wheat crop

	Organic wheat	Inorganic wheat
Total cost of production (Rs.)	13,274	16,650
Gross margin (Rs.)	14,442	16,936
Benefit-cost ratio	1.08	1.01

Source: Mehmood et al., 2011

An assessment of organic crop production in Dehradun and Udhamsingh Nagar in India (Alam and Verma, 2006) found that organic basmati rice cultivation is more profitable. At the same time, farmers reported various problems including market-related problems as well as challenges related with pests and diseases.

Table 16: Costs and benefits or organic basmati cultivation in Dehradun and Udhamsingh Nagar

	Dehradun	Udhamsingh Nagar
Cost of production (Rs.)	10,347/acre	6,280/acre
Average yields	8.46 quintal per acre	6.91 quintal per acre
Average profits per acre	Rs. 5,700 per acre	Rs. 6,842 per acre
Profits from organic farming compared to non-organic	Rs. 4,243 per acre	Rs. 1,377 per acre

Source: Alam and Verma, 2006

A similar analysis conducted for organic lemon orchards in Sicily also found that organic production is more profitable. In spite of lower yields, it was concluded that the higher market prices of certified organic lemons provide sufficient compensation for the lower production results (Tholkappian, 2011).

	Organic	Conventional
Cost of production (EUR/ha)	6525.39	7268.42
NPV (EUR/ha)	52,675.57	34,960.60
IRR (%)	28.5%	19.0%

Source: *Sgroi et al. (2011)*

Case study: Payment for ecosystem services programme in China

Payment for ecosystem services (PES) are considered pioneering and effective market-based instruments. Ex-post assessments suggest that the outcomes of PES initiatives depend highly both on the design and implementation and on specific local circumstances.

For forest conservation, China has launched two major PES programmes: the Natural Forest Conservation Program (NFCP) in 1998 and the Grain for Green Program (GTGP) in 1999 to maintain and increase the land surface area covered with forest. The NFCP aimed at conserving forest with logging bans and afforestation initiatives. The GTGP provided grain and direct cash transfer to farmers for converting low-quality croplands to forests and grasslands.

While both the Natural Forest Conservation and the Grain for Green programmes had various environmental benefits, it was concluded that the socio-economic impacts of the Grain for Green were considerably higher. For example, in Zhangjiajie (Hunan Province), the estimated value of improved ecosystem services as a result of program are 11 times higher than the direct incomes before 2000 (Liu et al., 2008).

Another PES program was launched in China to protect the surface water reservoir serving Beijing. Within the framework of the Paddy Land-to-Dry Land (PLDL) Program, downstream water users pay upstream landholders for improving water quality by converting rice lands to dry lands.

Table 17: Costs and benefits of major PES programmes in China

	NFCP	GTGP	PLDL
Objective	Afforest 31 million ha. of forest by 2010.	Increase vegetative cover by 32 million ha. until 2010.	Increasing water yield and reducing nutrient pollution.
Payment	Yuan 96.2 billion from 2000 to 2010.	The planned total investment was Yuan220 billion until 2010.	The program's costs (the opportunity costs of the upstream farmers plus transaction cost) are Yuan 8,154 per ha.
Socio-economic benefits	Cut off income from timber harvesting for many forest workers. Directly affected hundreds of state-owned forest enterprises and indirectly impacted numerous households.	Helped alleviate poverty by benefiting 120 million farmers in >30 million households nationwide.	Overall benefit–cost ratio of 1.5. Both the upstream providers and the downstream beneficiaries gained from the program implementation.

Source: *Liu et al. (2008) and Zheng, et al. (2013)*

Nevertheless, payment schemes need to meet various conditions in order to be efficient. Having an institutional framework for PES could ensure that the positive environmental and social impacts are long-lasting and minimize negative ones at the same time (Zheng et al, 2013).

Regarding negative impacts, concerns were raised that once the subsidies are discontinued, illegal logging will return and farmers would turn converted forest lands back to croplands.

3.3.3. Sectoral reviews: Climate change and energy

Energy and climate change represent an integrated goal, recognizing the close coupling of meeting the needs of human society for energy with the effects of the fossil fuel energy sector on the climate system (Pinter et al. 2014).

3.3.3.1. Global goals and targets related to climate change and energy

For climate change, the United Nations Framework Convention on Climate Change (UNFCCC) is the key body for goal-setting and implementation. For energy issues, efforts have most recently been guided by the SE4All (Sustainable Energy for All) initiative (SE4All 2014). The initiative, coordinated by the UN, is a joint partnership between governments, businesses, and civil society.

With regards to climate change objectives, in 2010 at COP16, governments adopted the Copenhagen accord and agreed to limit global temperature increases below 2°C, by reducing global GHG emissions. Furthermore, the upcoming COP21 of the UNFCCC in Paris is expected to set further and more concrete goals and targets. The role of UNFCCC for setting the post-2015 climate goal is specifically referenced in the proposed SDG on climate change. (Transforming Our World, 2015).

The SE4All has three objectives for 2030, including ensuring universal access to modern energy services, doubling the global rate of improvement in energy efficiency, and doubling the share of renewable energy in the global energy mix. While these goals are focused on energy, they also have the sub-objectives of tackling climate change, through the reduction of greenhouse gas emissions by catalysing a shift towards a more sustainable energy system. The SDGs' targets for energy reflect almost word-by-word the SE4All objectives. (Transforming Our World, 2015).

Within the framework of the SDGs, a separate goal is dedicated for energy and climate change targets. The ASEF goal proposal is again quite similar to those reflected in the 17 SDGs (Transforming Our World, 2015), although in this case both energy and climate change have been consolidated — including references to universal energy access, renewables, efficiency, and GHG reductions.

Box 25: SDGs' targets and ASEF Small Planet targets related to climate change and energy

UN SDG 7 on Energy and UN SDG 13 on Climate Change	
7.1	By 2030 ensure universal access to affordable, reliable, and modern energy services
7.2	Increase substantially the share of renewable energy in the global energy mix by 2030
7.3	Double the global rate of improvement in energy efficiency by 2030
13.1	Strengthen resilience and adaptive capacity to climate related hazards and natural disasters in all countries
13.2	Integrate climate change measures into national policies, strategies, and planning
13.3	Improve education, awareness raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction, and early warning
ASEF Small Planet Goal for Energy and climate change	
8.1	Everyone has access to sufficient energy and consumption is efficient and sustainable
8.2	The generation of clean and sustainable renewables has increased
8.3	The rate of the concentration increase of Greenhouse Gases (GHG) in the atmosphere has been reduced

Source: *Transforming our World (2015) and Pinter et al. (2014a)*

There is no specific reference to a figure for GHG reductions under the SDGs' and ASEF climate change targets. Therefore, while costs estimations for energy tend to follow the SE4All objectives and specific targets, those related to climate change are less pronounced and differ depending on which scenarios has been chosen.

3.3.3.2 Overview of global cost and benefits of energy and climate actions

The mammoth tasks of altering energy patterns and tackling climate change at the global scale, with significant implications for our socio-economic system as we know it, means that this is one of the areas that has been most studied to date, with various cost estimations available for Target 7.1–7.3.

For the 7.1 energy target, universal access, few studies have been conducted on costing (GEA, 2012 and IEA, 2011). The estimation of the IEA (2011) have been quoted by various other assessments and considered as a reference point (UN SDSN, 2015; UNCTAD, 2014). To fulfil these needs, it was suggested (UN SDSN, 2015) that the supporting investment framework could be developed under the SE4All initiative. Target 7.2 on increasing renewables is sometimes calculated separately, but in some studies it is combined with GHG reduction costing. The IEA has also calculated the additional investment needs to meet energy efficiency targets (IEA 2011), but other studies have included this in their carbon reduction estimations.

Table 18: Overview of methodologies for calculating the cost of various targets under SDG 7 on energy

Target	Theme	Methodology	Additional investment requirements
Target 7.1	Achieve universal access to electricity by 2030 (GEA, 2012)	Connect 1.6 billion of the world's population with the lowest income, with electricity access.	Total range of USD 66 to 141 billion per year.
Target 7.1	Ensure universal access to modern energy services IEA (2011)	Universal electricity access and access to clean cooking fuels until 2030.	Total of USD 49 billion per year: - - USD 45 billion for electricity access; - - USD 4.4 billion for cooking fuels.
Target 7.2	The cost to "avoid dangerous climate change" by the period 2050–2100 GEA (2012)	Investments needed for low-carbon technology and efficiency improvements	More than USD 465 billion per year.
Target 7.2	Meet the target on renewables to limit warming to 2°C, through maintaining GHG concentrations at 450 ppm IEA (2011)	450 Scenario sets out an energy pathway consistent with the goal of limiting the global increase in temperature to 2°C by limiting concentration of greenhouse gases in the atmosphere to around 450 ppm of CO2.	USD 500 billion per year in the power sector and additional USD 150 billion needed to meet the 450 ppm climate scenario
Target 7.2	Estimations for the 2011–2020 or 2021–2030 time frames Fideschik et al. (2010)	Different costing estimates for renewables, which are dependent on the climate scenario chosen	USD 139 to USD 149 billion per year, for the baseline climate scenario (i.e. no significant policy changes); USD 510 to USD 718 billion per year, for the 450 ppm scenario.
Target 7.2. and Target 7.3	Climate change mitigation UNCTAD (2014)	Investment in relevant infrastructure, renewable energy generation, research and deployment of climate-friendly technologies, etc.	USD 380–680 billion annually
Target 7.3	Cost of meeting the 2030 goal on energy efficiency IEA (2011)	n/a	USD 250–400 billion per year

Source: *Fideschik et al. (2010) IEA, 2011; GEA, 2012; UNCTAD, 2014*

According to the UN System Task Team (UNTT) (2013), the major reason why the cost estimations for the energy and climate goals are so high, is that the key tool through which these goals will be achieved is through investments in renewables. Given the disproportionate reliance of the global energy and economic systems on fossil fuels, in order to achieve this shift in the energy system, the huge investments and change in policy frameworks necessary to achieve the goals will rely to a large extent on public investments and subsidies. While the cost of renewables is expected to decrease over time, such subsidies will still be necessary — similar to how fossil fuel subsidies are still necessary today (UNTT 2013). IEA (2012) estimates that by 2035, investments in renewable energy subsidies will need to increase to USD 240 billion per year, if a 'mild' climate scenario is to be achieved. While in simple cost accounting, these subsidies could be redirected from those of fossil fuels, which currently receive annual subsidies of USD 450 to USD 500 billion per year, the question of political acceptability still remains the major barrier to achieving this shift (UNTT 2013, IEA 2012). Additionally, as public subsidies are a national cost, savings from subsidies cannot simply be transferred between nations.

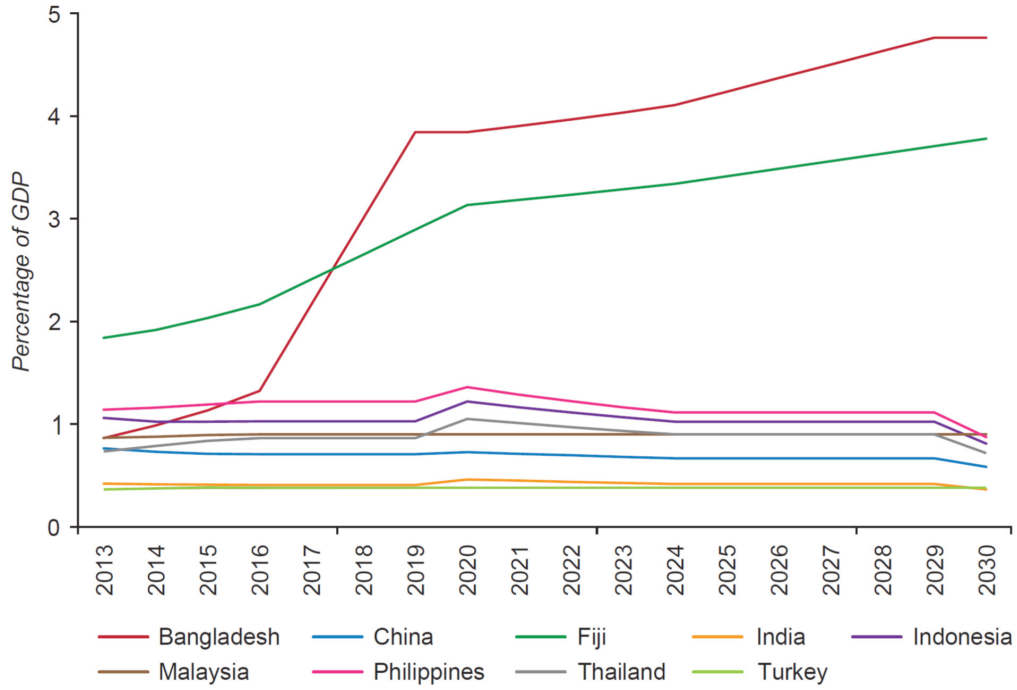
With regards to climate change adaptation, the United Nations Conference on Trade and Development (UNCTAD) (2014) estimated that the annual total investment needed to cope with the impact of climate change in agriculture, infrastructure, water management, and coastal zones is in the range of USD 80–120 billion annually. The estimated investment gap in developing countries is USD 20 billion annually.

3.3.3.3. Costs and benefits of selected aspects of energy and climate change in ASEM member states

Given the large stakes involved in the energy and climate sector, region- and country-level cost assessments are also available, relevant to the ASEM countries.

For the Asia-Pacific region, cost estimations are based largely on the SE4All initiative. It estimates that a total investment of almost USD 1 trillion — representing 3% of total global energy-related infrastructure investment — will be needed to achieve universal energy access from 2011 to 2030 (UN ESCAP 2013). To calculate the costs of implementation at the country level, the Asia-Pacific study uses a 'human needs' approach, i.e. estimating the cost of universal access to energy, which includes access to electricity for lighting, health, education, communication and communication services, as well as modern fuels and technology for cooking and heating (UN ESCAP 2013). Given the very different starting points of each country, again for the energy sector, the costs differ quite widely — with annual investment needs to achieve universal energy access ranging from 3% of GDP in Bangladesh, to only about 0.4% of GDP in India (see Figure 25 below).

Figure 25: Investment Required for Energy Access to All



Source: *UN ESCAP 2013*

For Europe, the picture is quite different. Instead of assessments based on the SE4All initiative, European cost assessments have tended to focus on the 20-20-20[14] targets of the European Commission (EC), and most recently on the new EU 2030 energy targets that aim to reduce GHG emissions by 40%, increase the share of renewables by at least 27%, and Improve energy efficiency by 30% (EC 2014).

A recent study estimated the cost of achieving these new goals, on the EU level (Enerdata 2014). The total cost of reaching all 2030 targets would be 0.6% of the EU GDP. However, while outlining these costs, the same study proposes that the overall benefits of achieving these new energy targets would outweigh the costs. This would be achieved through amongst other things, a reduced dependence on fossil fuel imports (0.4% of GDP), and reduced health impacts (0.1% of GDP). The study also found that the costs of achieving these different targets vary widely between EU member states (Enerdata, 2014).

[14] The 20-20-20 targets of the EU, aim to achieve the following by 2020: "a 20% reduction in EU greenhouse gas emissions from 1990 levels; raising the share of EU energy consumption produced from renewable resources to 20%; and a 20% improvement in the EU's energy efficiency." http://ec.europa.eu/clima/policies/package/index_en.htm

Table 19: Cost of the EU 2030 targets

In 2030	40% GHG	% GDP	40% GHG+ 30% REC	% GDP	50% GHG+	% GDP	50% GHG+
Total cost vs. Ref. (EUR billion)	30	0.2	41	94	0.6	67	0.4
Average health cost vs. Ref. (EUR billion) *	-18	0.1	-18	-27	0.2	-19	0.1
Energy import bill vs Ref. (EUR billion) – Fossil fuels **	-72	0.4	-78	-111	0.7	-58	0.4
Energy import bill vs Ref. (EUR billion) – Biomass **	4	0.0	5	6	0.0	3	0.067

Source: *Enerdata, 2014*
**not captured in total cost; ** captured in total cost*

Case study: Financing the SDGs through fossil-fuel subsidy reform in selected SEA countries (Merril, 2014)

Fossil-fuel subsidy reform is an opportunity for the SEA region. Potential savings from reform, revenues from the taxation of fossil fuels, and targeted social welfare systems to manage fuel price rises, have the potential to provide governments with the resources and impetus to build sustainable development programs, and deliver the SDGs in the longer term.

Fossil-fuel subsidies remain significant in the region. Within emerging and developing Asia, consumer fossil-fuel subsidies totalled USD 104 billion in 2011, a figure close to that of the OECD Development Assistance Committee's 2013 aid budget of USD 134 billion to the whole world.

The IMF (2013) estimates that the emerging and developing Asia region is "responsible for over 20% of global energy subsidies"; with subsidies representing 4% total government revenues or 1% of regional GDP. The table below outlines the size of fossil-fuel subsidies for various Asian economies.

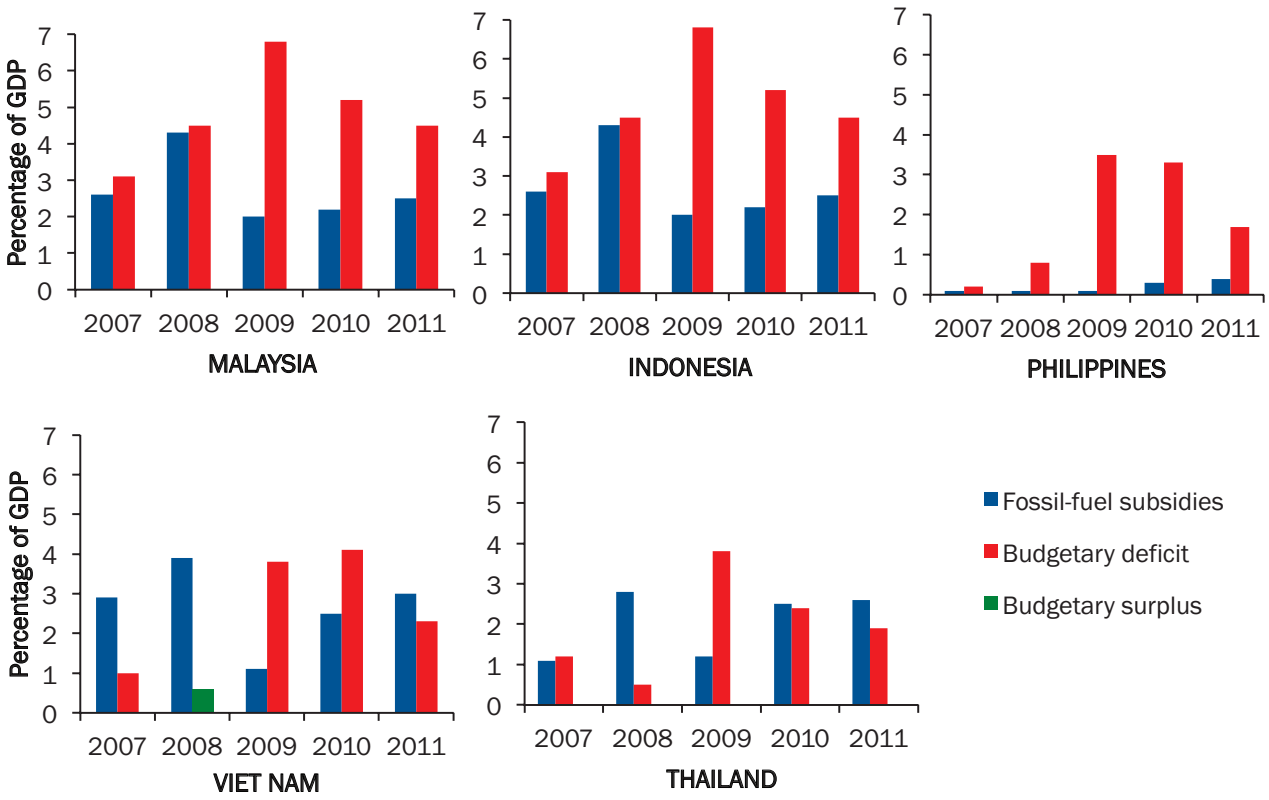
Table 20: Fossil fuel subsidises (% GDP), 2011

	IEA Estimates	IMF Estimates	
		Pre-tax	Post-tax
Indonesia	2.5%	3.2%	5.4%
Malaysia	2.5%	1.9%	7.2%
Philippines	0.7%	0.0%	0.7%
Thailand	3.0%	2.2%	3.2%
Viet Nam	3.1%	0.0%	0.0%

Source: *Merril, 2014*

Fossil-fuel subsidy reform is an important step towards sustainable development as it creates greater fiscal space through a reduction of the national budget deficit. Figure 26 shows fossil-fuel subsidies to budget deficits for a number of Southeast Asian countries.

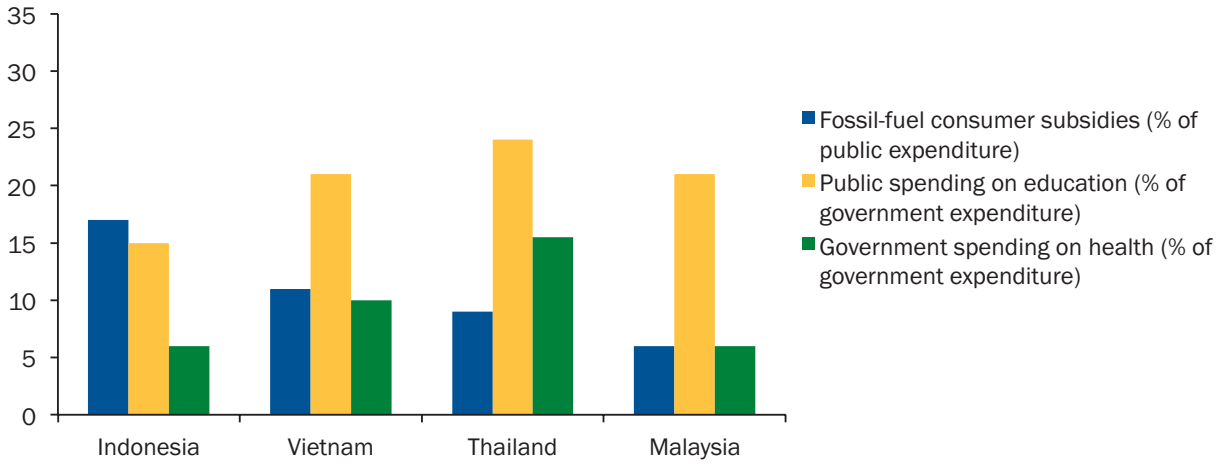
Figure 26: Energy subsidy and budgetary deficit/surplus (% of GDP) 2007–2011



Source: *Merril, 2014*

In the region, government expenditure on fossil fuel subsidies represents huge lost opportunities to development in terms of social spending. Many Southeast Asian countries spend far greater on consumer fossil-fuel subsidies than on health or education.

Figure 27: Fossil-fuel subsidies, health and education (% of expenditure), 2011



Source: *Merril, 2014*

Recognizing the links between the need for fossil-fuel subsidy reform and social assistance, the Philippines and Indonesia have introduced various measures in the last decade.

The Philippines
The Philippines removed various fossil-fuel subsidies between 1996 and 2001 and experienced fuel price increases. It has since invested more in safety nets and renewable sources of energy, and can now tax fuels to collect ongoing revenues. Measures included:

- A transition period of monthly-adjusted prices before market prices set in.
- A lifeline rate (100% discount) for marginalised and low-income electricity users, and subsidies for senior citizens.
- A one-off cash transfer to marginalised electricity users funded from a value-added tax (VAT) levied on oil, benefiting 6.8 million households at the cost of USD 82 million.
- A Public Transport Assistance Programme targeted at motorized tricycle operators.
- Moreover, the government has targeted policies and subsidies towards expanding electricity networks and renewable energy development:
- A major reform of VAT, which raised the rate on gasoline to 12% and added an excise tax, set VAT at 0% for renewables, and maintained a flat rate of 12% on fossil fuels.
- An expanded Rural Electrification Programme.
- The Renewable Energy Act of 2008 offered incentives for renewable energy projects, including tax breaks and 0% VAT on the sale of power from renewable generation.

Throughout this reform period (2000–2009), energy efficiency in the Philippines improved. Energy use per capita decreased whilst GDP per unit of energy use has increased.

Indonesia
The Indonesian government has complemented fuel subsidy reform with social welfare programmes targeting low-income households. In the past, energy subsidies were used to stabilise prices, and this helped Indonesia to achieve significant poverty reduction. However, as Indonesia's economy developed, the benefits of subsidies have been captured by fewer higher-income populations at increased fiscal cost. As a result, energy subsidies consume around one fifth to one quarter of government expenditure.

In order to manage a growing current account deficit, the government has cut fuel subsidies several times since 1998. The social protection measures that the government introduced or expanded to help households cope with price rises represent the first signs of a comprehensive welfare system. Three clusters of such programmes have been introduced:

- Raskin – A subsidised rice programme launched in 1998 that distributes 15 kg of rice at 20–30% discount of the market price once a month targeting 15 million poor households.
- Jamkesmas – A public health insurance system that waives healthcare fees for the poor and provides free healthcare services.
- Bantuan Siswa Misking – A cash assistance programme targeted at 15.4 million students from poor households to cover school-related expenses other than tuition
- The government accompanied these with the following cash transfer programmes:
- Program Keluarga Harapan (PKH) – A conditional cash transfer covering poor households comprising of pregnant mothers and school children providing assistance with health and education.
- Bantuan Langsung Sementara Masyarakat (BSLM) – An unconditional cash transfer scheme launched in 2013 to mitigate increased fuel costs for 19 million poor families.

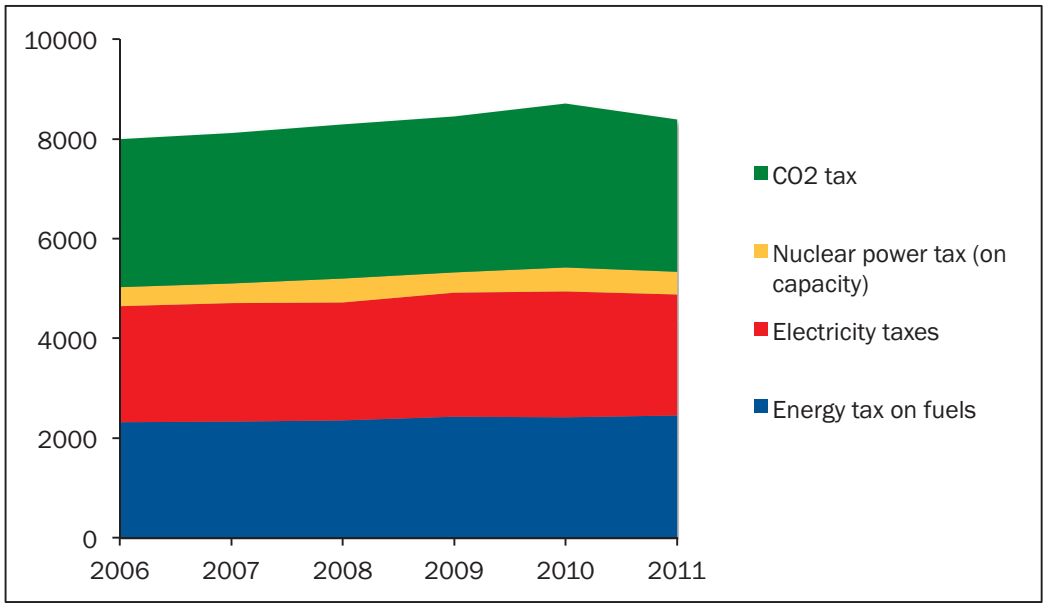
In 2013, the total compensation package to mitigate the impact of rising fuel prices amounted to USD 2.9 billion.

Case study: The Swedish experience with carbon taxation and other climate mitigation measures

Since the 1990s, Sweden has gathered a considerable experience with carbon taxation. It was among the first countries to put a price on carbon in 1991. In fact, the introduction of the carbon tax was part of green tax reform package, where labour taxes were reduced and related budget revenues were partly replaced with carbon tax revenues.

Starting from its introduction, the rate of the carbon tax increased from EUR 27/t CO_2 in 1991 to EUR 118/t CO_2 in 2012. Revenues between 2006 and 2011 from carbon and energy taxes have remained stable and constituted 4.6–4.9% of total revenues. As a result of a simple calculation system, the administrative costs of the carbon tax (together with those of the energy taxes) constituted around 0.1 % of total tax revenues (Hammar and Åkerfeldt, 2011).

Figure 28: Revenues from energy and CO2 taxes in Sweden in EUR million



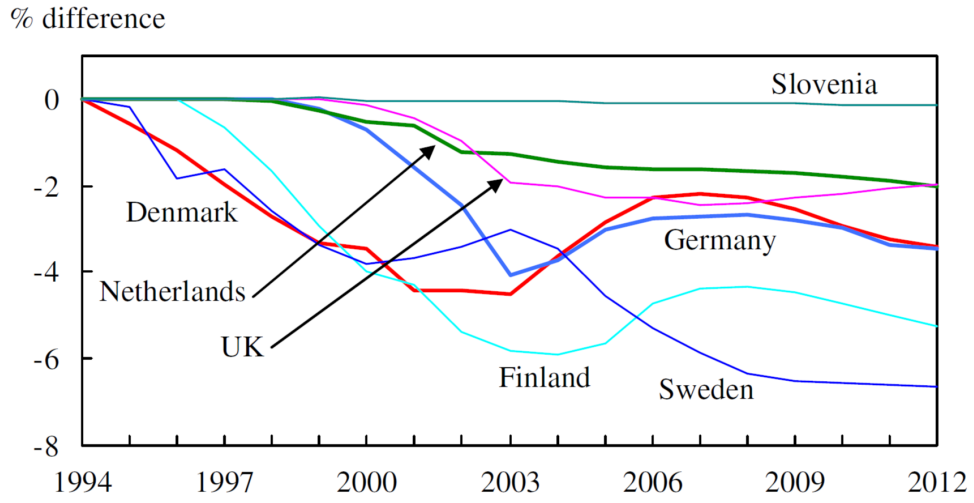
Source: *Based on Withana et al. 2014.*

Originally, to address the risk of carbon leakage, the carbon tax on industrial fossil fuel use had been lower to ensure the international competitiveness of Swedish industries. However, after an additional carbon tax reform in 2009, Sweden took further steps to place a uniform national price on fossil fuels and account for differences between carbon taxation of EU-ETS and non-ETS sectors.

Besides carbon tax, other climate mitigation measures have also proven successful in Sweden. Within the framework of the Swedish Programme for improving energy efficiency in energy-intensive industries, companies were offered to sign voluntary agreement. They agreed to undertake various energy efficiency measures and in exchange be exempted from the minimum-level EU tax on electricity. The ex-post assessment of the first round of 5-year agreements concluded that the programme had higher positive impact — as a result of energy saving measures — compared to base-level electricity taxes (Stenqvist C, and LJ Nilsson, 2012).

Ex-post assessment of early application of the emissions trading system in Sweden also concluded that the ETR had positive effects on the total fuel demand in Sweden. See Figure 29. It was suggested that a well-designed ETR could support employment growth in Sweden by up to 0.5%.

Figure 29: The effect of ETR on GHG emissions



Note(s) : % difference is the difference between the base case and the counterfactual reference case.

Source: *Ekins. P, 2007*

In combination with various climate measures, the carbon tax has been proven an effective economic instrument to decouple economic growth from GHG emissions. Sweden experienced over 30% economic growth from 1990 to 2012, while its total GHG emissions were reduced by 15.5%. In the household and service sector in particular, where the full carbon tax was applied, GHG emissions decreased considerably while the use of biofuels skyrocketed.

Case study: Costs and benefits of flood risk reduction in the Philippines

The Southeast Asian region is one of the most climate risk-prone and it is heavily affected by various climate events. According to the Germanwatch global climate risk index, the Philippines was the 7th most affected country by extreme weather events between 1993 and 2012.

Aiming to estimate the costs and the benefits of flood prevention measures undertaken in the Philippines, various research projects were conducted.

Dedeurwaerdere (1998) concluded that the benefit-cost ratios of various climate-change related Disaster Risk Reduction (DRR) investments range from 3.5 to 30 times. The study calculated the difference between potential economic losses in the agriculture, infrastructure, industrial, and residential sector with and without DRR investments. Potential economic losses (PELs) were based on the economic values of the existing investment per sector, e.g. Agriculture (mainly crops); Properties (industry and private investments); Infrastructure (roads, bridges and the like). Benefits of the natural disaster management are then measured as the difference between PELs without and with the project (Shreve and Kelman, 2014). The assessment found that various investments under various timeframes can bring an overall positive result. See Table 21.

Another study estimated the economic impacts of additional DRR projects that were implemented by the Red Cross in the Philippines and compared it to the cost of disaster management activities that would have been undertaken after disasters (Shreve and Kelman, 2014). Evaluated risk reduction investment included the investment cost of constructing hanging footbridges, sea walls and dykes for a selected small-scale study area. It was found that the construction of hanging footbridges and sea walls had a positive benefit ratio (Burton and Venton, 2009). See Table 21.

Table 21: Costs and benefits of various Disaster Risk Reduction of activities in the Philippines

	Investment	Timeframe of evaluation	Benefit-cost ratio
Dedeurwaerdere (1998)	Rain forest plantation	15/30 years	30
	Bamboo plantation	4 years	14.74
	River channel improvements	3 years	3.5
Burton and Venton, 2009	Hanging footbridge	15 years	24
	Sea wall	15 years	4.9
	Dyke	15 years	0.67

Overall, it can be concluded that cost-benefit analysis of various flood prevention measures indicate positive return in most cases compared to disaster response or management activities.

3.3.3.4. Overview of global climate financing mechanisms

Climate financing, as a mean to tackle the global climate challenge, is becoming an important element of the development-financing framework. This is especially the case in developing countries with increased adaptation needs as climate hazards can hamper or undermine previous development efforts in other areas. At the same time, climate financing has also become extensive in developed countries. Utilized both in developing and developed countries, its structure can serve as an example for financing SDGs.

3.3.3.4.1. Climate financing as a development financing mechanism

The UNFCCC and its Parties have recognized the importance of providing financial assistance to developing countries, with fewer resources and channel financing support via a variety of funding sources and mechanisms.

First, various financial mechanisms and funds operate directly under the Convention. These include the Global

Environment Facility (GEF), the Least Developed Countries Fund, the Special Climate Fund, and the Adaptation fund. In addition, the Green Climate Fund was established at the UNFCCC COP16 in 2010. This fund serves as an operating body of the Convention's financial mechanism and will disburse most of the USD 100 billion funding that developed countries pledged to provide by 2020 (UNFCCC, 2009 and GCF, 2014). To support developing countries in addressing the impacts of climate change, the Warsaw International Mechanism for Loss and Damage associated with climate change impacts, was established at COP19 in Warsaw. This mechanism aims to promote integrated approaches to address loss and damages resulting from climate change impacts in developing countries (UNFCCC, 2014).

Besides the UNFCCC financing mechanisms, multi- and bi-lateral donors also provide funds to developing countries for climate objectives. Examples of multilateral donor sources include various funds operated by the World Bank, the UNDP and the European Commission. Major bilateral donors for climate objectives are the UK, Germany, Norway, Australia, and Japan. Using these funds, some developing countries, such as Indonesia, are now establishing their national climate funds to up-scale and better prioritize climate investments at the national level.

3.3.3.4.2. Climate financing as a means to safeguard global public goods

While development assistance is available for climate financing, the overall characterization of climate flows is more comprehensive and thus considerably differs from traditional development financing. The following summary provides an overview of the overall characteristics of the global climate financing landscape.

Table 22: Major characteristics of climate financing

Direction of investments	In the investors home country	76%	Abroad	24%
Target countries	Developing regions	51%	Developed regions	49%
Investor type	Public investors	38% (USD 135 million)	Private	62% (USD 224 million)
Investment purpose	Mitigation purposes	90%	Adaptation purposes	10%
Form of investment	Mitigation purposes	Mainly equity mechanisms or loans	Adaptation purposes	Grants and concessional loans from development financing institutions

Source: *Adapted from Buchner et al, 2013*

The experience with climate financing highlights some important lessons learnt that can be considered for the financing of other SDGs (Almassy, 2014):

- Development objectives do not necessarily need to rely on international financing sources. If the objectives are properly promoted and supported with appropriate legislative and policy frameworks, they can be easily linked to domestic reserves. In the case of climate financing, in 2013, 76% of the funding was invested in the home country of the founding organization.
- Certain financing mechanisms will be more suited to some SDGs than others, depending on the focus and the nature of the goal. Climate mitigation objectives were mostly financed by equity mechanisms and loans. For adaptation purposes, grants or concessional loans were primarily used. Therefore, the characteristics of the development should be taken into consideration when designing the financial framework for implementation.
- The success of SDG financing is extensively dependent on the existence of appropriate national legislative and strategic frameworks and strong political will. The highest percentage of climate investments were implemented in Europe, excluding Eastern Europe (32%), and in East Asia and Pacific, including China (29%), regions that have been forerunners in committing and implementing climate objectives.

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