

Chapter 7:

Global-scale Action

Efforts at the global level can catalyze action at the national and regional scales and help promote widespread implementation of black carbon and methane mitigation measures. Global cooperation can also provide needed support to help achieve development goals, including the Millennium Development Goals. A global strategy to attain widespread mitigation of SLCFs could be based on common objectives, include priorities set at the regional level, and build upon existing instruments, initiatives and organisations. A systematic international approach would help ensure the efficient use of scarce resources and support integrated policy development at the global level. While the implementation of SLCF mitigation measures needs to occur primarily at the national level, the international community could have an important role in putting in place the enabling conditions for this to take place.

This chapter considers the following major global approaches for promoting the mitigation of SLCFs:

- i) building upon existing legal instruments;
- ii) promoting further efforts by international organisations and cooperative mechanisms, including partnerships and networks; and
- iii) putting enabling mechanisms in place at the global scale to facilitate the national implementation of black carbon and methane mitigation measures. These include: awareness raising; technical assistance, technology transfer and capacity building; and financing.

This chapter focuses on early opportunities rather than longer-term efforts, and therefore does not include negotiation of new multilateral environmental agreements or the amendment of existing ones, but also does not preclude such action.

7.1 Building upon existing legal instruments

Global strategies to mitigate SLCF emissions need to be based on action that can be implemented in the next couple of decades if their potential to improve public health, crop yields and slow the rate of climate change is to be realised in the near term. While there is currently no dedicated global regime to regulate SLCFs *per se*, rapid progress might be possible by building on existing instruments, initiatives and organisations as outlined in this and the previous chapter.

Considering the interconnected nature of environmental problems across the globe, it is important that a holistic and synergistic approach is taken to tackle these emissions. Benefits could therefore be realised by associating SLCF mitigation with other related issues, including climate and air pollution, and also through global agreements that address specific sectors and sources of emissions such as the MARPOL Convention (Box 7.1).

It may be beneficial to have some level of connection between SLCF mitigation and the global climate regime. Methane, one of the substances that is the subject of this report is in fact already covered by this regime and is one of the six greenhouse gases addressed by the Kyoto Protocol. It is also likely to be included in any successor agreement, although currently there is no specific emission reduction target for methane and the other gases covered in the Kyoto Protocol. Instead, the protocol requires that Annex I parties limit their aggregate greenhouse gas emissions in accordance with their respective commitments⁵⁴. Additional efforts to specifically address methane emissions could be helpful to achieve the full health, environmental and development benefits of its mitigation. These could include using existing vehicles or avenues within the climate regime.

54. Kyoto Protocol, Article 3(1). The relevant commitments are set out in Kyoto Protocol, Annex B. Gases controlled by the Kyoto Protocol are set out in Kyoto Protocol, Annex A. http://unfccc.int/kyoto_protocol/items/2830.php

Information exchange could be promoted under the framework of the climate regime, for example by building upon the work of subsidiary bodies of the UNFCCC, especially the Subsidiary Body for Science and Technological Advice (SBSTA) which has already discussed the results of the UNEP/WMO (2011) assessment, as well as the impact of SLCFs on sensitive areas such as the Arctic.

The Intergovernmental Panel on Climate Change (IPCC) will have an important role through its development of its Fifth Assessment Report (AR5) to further expand the scientific understanding of SLCF issues. The IPCC Task Force on National Greenhouse Gas Inventories could further consider developing guidelines on emissions reporting, initially voluntary, to encompass black carbon, possibly in conjunction with air quality experts in the Arctic Council and United Nations Economic Commission for Europe Convention on LRTAP.

However, notwithstanding the linkages between climate protection and the reduction of SLCF-related emissions, it is important that any strategy to mitigate the emissions of these SLCFs is treated as complementary to the primary efforts being undertaken to stabilize long-lived greenhouse gases under the global climate regime.

Benefits could also be realised by integrating SLCF mitigation into air pollution efforts taking place in the context of global agreements that address specific sectors and sources of emissions such as the MARPOL Convention (Box 7.1).

7.2 Promoting further efforts by international organisations and cooperative mechanisms

International organizations, such as FAO, ICAO, IMO, UNDP, UNEP, WHO, WMO and the World Bank among others, have institutional air-quality or climate mandates relevant to SLCFs. Several global networks, partnerships and associations also exist that are already active in the field of air quality, or that address sectors that can generate SLCFs.

Many of these organizations and cooperative mechanisms have already undertaken action to address SLCFs, and these could be enhanced and coordinated to promote much wider implementation of the identified black carbon and methane mitigation measures. This should be done in cooperation with relevant stakeholders, including national governments, regional bodies and civil society organisations.

International organizations and their partners could promote the generation and sharing of knowledge and awareness raising, design and implement technical assistance and capacity building programmes, and facilitate technology transfer. In addition, relevant international organizations could play a key role in facilitating financing. These enabling measures are discussed in section 7.3.

International organizations and cooperative mechanisms are also well placed, especially if they work in a coordinated manner, to undertake or strengthen existing initiatives to:

Box 7.1: Opportunities to build on the International Convention for the Prevention of Marine Pollution from Ships (MARPOL)

The International Maritime Organization's (IMO) MARPOL Convention regulates air pollution from ships in its Annex VI, which entered into force in 2005 and limits the main air pollutants contained in ships' exhaust gas and prohibits deliberate emissions of ozone-depleting substances. It also regulates shipboard incineration and the emissions of volatile organic compounds from tankers. A revised Annex VI, containing a progressive reduction globally in emissions of sulphur dioxide, nitrogen oxides and particulate matter and introducing Emission Control Areas (ECAs), was recently adopted and entered into force in 2010. International maritime shipping is not one of the sectors addressed by the 16 measures identified in Chapter 3, but probably emits significant quantities of black carbon close to sensitive regions. Shipping traffic in

the Arctic is anticipated to grow substantially as the area of summer sea ice diminishes and new major sea lanes open up in the region, thereby increasing the impact of black carbon from shipping on the Arctic environment (IMO, 2010). In 2011, the IMO's Marine Environment Protection Committee (MEPC) agreed to address the impact of black carbon emissions in the Arctic, investigate appropriate control measures to reduce the impacts of such emissions in the Arctic and establish mandatory energy efficiency standards for international shipping (IMO, 2011). These are expected to help reduce emissions from the projected increase under a "business as usual" scenario. These developments underscore the way in which national and regional efforts on SLCFs can also lead to action on a global scale.

- convene stakeholders around a shared vision and global strategy to mitigate SLCFs;
- develop common standards and guidelines;
- promote policy integration through existing inter-agency coordination mechanisms; and
- encourage joint actions amongst and between the private sector, civil society and governments, including the promotion of best practices and improvement of technology.

7.2.1 Facilitating a shared SLCF vision and global strategy

Convening different international organizations around common near-term climate protection objectives could be a powerful way of integrating various initiatives, reducing duplication, and inefficient use of resources, and leading to more effective implementation of SLCFs mitigation measures in different sectors worldwide. A variety of organizations have already begun initiatives that directly or indirectly affect SLCFs, such as the World Bank on gas flaring, ICAO on air pollution, UNEP on the Atmospheric Brown Cloud and other initiatives discussed in the following sections.

7.2.2 Developing common standards and guidelines for SLCFs

Sector-specific emission standards could be modified to more clearly and comprehensively include SLCFs. Examples, which range from mandatory to voluntary standards and guidelines, applied to emissions, products and concentrations, are given here from the oil and gas, aviation, road transport and cookstoves sectors.

Current research points to gas flaring possibly being a large source of black carbon emissions; gas venting and inefficient seals on pipelines are also known to be a large source of methane emissions. The World Bank Global Gas Flaring Reduction Partnership (GGFR)⁵⁵ is a public-private partnership launched at the World Summit on Sustainable Development in Johannesburg in 2002. It supports the efforts of oil producing countries and companies to reduce flaring and venting and increase the use of associated natural gas. Global Gas Flaring Reduction partners have established a collaborative global standard for gas flaring reduction, which provides a framework for governments, companies, and other key stakeholders to consult with

each other, take collaborative actions, expand project boundaries, and reduce barriers associated with gas utilization.

The International Civil Aviation Organization (ICAO) has issued standards and recommended practices on aircraft engine emissions⁵⁶. The standards regulate, *inter alia*, particulate matter and the tropospheric ozone precursor carbon monoxide (UNEP/WMO, 2011). Although the initial focus was on improving air quality in the vicinity of airports by regulating emissions during landing and take-off, ICAO is considering developing the standards further to regulate emissions during the cruise phase of flights (ICAO, 2010).

The Global Alliance for Clean Cookstoves (GACC)⁵⁷, a public-private partnership initiated by the UN Foundation in 2010, is currently working with several governments and organizations to develop international cookstove standards and guidelines that will incorporate standards for black carbon.

The development of other SLCF-focused guidelines in other sectors could be spearheaded by relevant international organizations to address all major sources of SLCF emissions that require international regulation (World Bank, 2011), and could constitute a reference in the development of national standards.

WHO's air quality guidelines for particulate matter, ozone, nitrogen dioxide and sulphur dioxide, are intended to provide guidance to policy makers in developing measures to reduce impacts of air pollutants on human health and ecosystems (WHO, 2006). Furthermore, WHO is preparing new indoor air quality guidelines for household fuel combustion, which are also relevant to SLCF reduction⁵⁸.

International organizations, individually or jointly, could also initiate the development of guidelines to assist policy makers in developing national action plans to address SLCFs (see Chapter 5).

7.2.3 Promoting policy integration through existing inter-agency coordination mechanisms

Cooperation mechanisms have been established to promote integrated policy making within the United Nations system to ensure enhanced coherence in global policy-making, linking together the environment, development and other areas of international

55. Global Gas Flaring Reduction Partnership. <http://go.worldbank.org/NEBP6PEHS0>

56. International Civil Aviation Organization. Environment Branch: Air Emissions. <http://www.icao.int/icao/en/Env2010/Aee.htm>

57. <http://cleancookstoves.org/overview/>

58. http://www.who.int/indoorair/interventions/CHEA_brochure_rev.pdf

cooperation. These mechanisms can be used to promote the progressive integration of decision making on issues related to climate change mitigation, air pollution prevention and control, ecosystems management, agriculture, food security and, more broadly, development including through the angle of SLCF mitigation. Examples of coordination measures include:

- The High-Level Committee on Programmes (HLCP) to the Chief Executives Board for Coordination (CEB), which fosters coherence, cooperation and coordination on programme dimensions of strategic issues for the United Nations system.
- The United Nations Development Group (UNDG) to the Chief Executive Board that unites the 33 United Nations funds, programmes, agencies, departments, and offices that play a role in development, with a common objective to deliver more coherent, effective and efficient support to countries seeking to attain internationally agreed development goals, including the Millennium Development Goals.
- The Environment Management Group (EMG), established by the United Nations General Assembly as a UN system-wide coordination body. Its membership consists of its specialized agencies, programmes and organs including the secretariats of the Multilateral Environmental Agreements, and is chaired by the Executive Director of UNEP⁵⁹.

These and other mechanisms could be used to enable continued dialogue and ensure that SLCF policy development and implementation in areas ranging from climate change, environment, public health, agriculture and development are undertaken in a coherent way encompassing multiple benefits. In addition, ministerial and other meetings of high-level representatives of interested governments, and global meetings such as the Rio+20 meetings in June 2012, could provide a vehicle for drawing high-level global attention to SLCFs and the imperative of addressing near-term climate change, with its air quality, sound economic development and poverty alleviation benefits.

7.2.4 Encourage joint actions amongst and between the private sector, civil society and governments

Further action and enhanced collaboration on SLCF mitigation could be sought through existing global

networks, partnerships and associations, such as the Global Atmospheric Pollution Forum (GAP Forum), the Atmospheric Brown Cloud (ABC) project and others outlined in Chapter 6. Several of these groups focus specifically on air quality, whereas others focus on specific sectors, such as transport or cookstoves. Such *fora* can catalyze regional and global coordination and synchronize action.

Public-private partnerships, which promote joint action by public institutions and the private sector for the achievement of common objectives, engage the affected industries in a way that can accelerate the rate and the scale of abatement of SLCFs and assist the public sector in overcoming market barriers. They can also establish best practices, guidelines and voluntary industry standards. The UNEP Partnership for Clean Fuels and Vehicles (PCFV), for example, is a public-private partnership made up of over 120 partners worldwide, with the shared goal of reducing air pollution in developing countries through technological improvements within the transport sector and the adoption of clean fuel and vehicle strategies⁶⁰.

Multi-sector initiatives such as the Global Methane Initiative (GMI) provide a basic framework for multi-stakeholder cooperation on one particular SLCF. The GMI brings together resources and technical expertise to enable methane emission abatement projects in a voluntary action network. The USEPA has also established the SmartWay Partnership with the private sector, initially as a national programme to advance green freight practices that improve fuel efficiency and reduce emissions. It includes a supply chain partnership of over 2,000 shippers (manufacturers) and carriers, and programmes concerned with technologies, financing and marketing⁶¹.

7.3 Enabling mechanisms at the global scale to facilitate implementation of national SLCF mitigation

Adequate institutional and legal frameworks are essential in achieving SLCFs mitigation, but to be effective they need to be accompanied by adequate human, technical and financial resources. While efforts to secure adequate resources need to occur primarily at the national level, they can be supported through a variety of ways at the global level. Overcoming financial challenges, for instance, requires readily accessible financing systems

59. UN Systems High-Level Committee on Programmes (HLCP): <http://hlcp.unsystemceb.org/>, United Nations Development Group: <http://www.undg.org/>, Environment Management Group: <http://www.unemg.org/>

60. <http://www.unep.org/transport/pcfV>

61. <http://www.epa.gov/smartway>

at the national level such as incentive schemes, existing credit institutions, the Clean Development Mechanism, among others, which can entirely originate and be funded through national sources, or be supported by external sources, including bilateral and multilateral donors. Similarly, strengthening national capacities and institutions, and access to technology, can be supported by global programmes. Awareness raising is also essential to mobilize political support and wide acceptance of, and participation in, mitigation efforts at national level. This need is discussed at length in Chapter 5, in relation to the specific sectors addressed, and Chapter 8.

7.3.1 Technical assistance, technology transfer and capacity building

International organizations and donors can play an important role in facilitating access to appropriate technology, information, knowledge and data and can support national efforts to strengthen institutions and capacities to implement measures to reduce SLCF emissions. An example is the Global Fuel Economy Initiative by UNEP and other partners to promote fuel-efficient vehicles, with the co-benefit of reducing emissions of black carbon⁶². Other examples are the institutional strengthening projects funded under the multilateral fund for the implementation of the Montreal Protocol, which support ozone units in relevant ministries worldwide in their efforts to implement national measures to phase out ozone depleting substances⁶³.

While technical assistance and capacity building programmes to support SLCF mitigation are already being implemented by various organizations, a more coherent, coordinated SLCF-specific approach based on synergies among existing programmes and plans for future activities would be beneficial.

7.3.2 Financing SLCF mitigation

Given the multitude of conflicting and often pressing development and economic priorities facing decision makers, investment in SLCF mitigation may not be the immediately preferred choice, and only those measures that provide an increase in earnings in the relatively near-term will directly appeal to the private sector (Chapter 4). So, when cost savings can only be realised over the long-term, the resources required for the up-front investment need to be found in other ways.

Action to mitigate SLCFs can be funded through a wide range of sources from the national to the global level and from micro-finance to large-scale funding. Creative ways to generate and access funding have already been devised and continue to evolve, in addition to traditional official development assistance (ODA) and multilateral funding mechanisms.

Considering the development co-benefits of mitigating SLCFs, a more comprehensive approach to policy on SLCFs that takes such co-benefits fully into account could positively affect funding to address SLCF concentrations. The links between the impacts of near-term climate change and poverty eradication, for example, need to be drawn more clearly both at national and international levels.

Mechanisms specifically funding SLCFs

One initiative aimed at specifically reducing an SLCF is the Prototype Methane Financing Facility (PMFF)⁶⁴, introduced by the Methane Blue Ribbon Panel and supported by UNEP and several donor and recipient countries. The PMFF provides a guaranteed floor price for certified emission reductions (CERs) arising from qualified methane projects, especially in least developed countries, and for cookstoves projects that abate methane. Financing is expected to arise from guarantees issued by governments, and therefore would not require extensive additional funding; if successful, this model could be used to target other SLCFs as well. Proposals also exist for a more extensive price floor mechanism that would actually purchase and retire the CERs, rather than using them as offsets in meeting climate obligations. Several private methane funds also exist, targeted specifically at methane abatement activities.

The PMFF is an example of a 'forcer fund' approach, with the focus on an individual SLCF. Another option would be for groups of donors, both government and private actors, to take a sectoral approach instead of focusing on individual forcers. The Global Alliance for Clean Cookstoves (GACC) has for example encouraged donors to set aside development loan guarantees for cookstove manufacturers. This approach could be used for other sectors impacting SLCF emissions as well, such as oil and gas, brick-making kilns, diesel combustion or agricultural waste burning.

62. <http://www.globalfuelconomy.org/Pages/Homepage.aspx>

63. <http://www.multilateralfund.org/default.aspx>

64. Methane Blue Ribbon Panel, A Fast-Action Plan for Immediate Methane Abatement. <http://www.globalmethanefund.org/>

Multilateral environmental agreement-related funds

Many financial mechanisms have been established to help implement multilateral environmental agreements. While some are trust funds that support the operation of the agreement's secretariats, others aim to support parties in their implementation of the agreement's obligations. In particular, several funds have been established under the United Nations Framework Convention on Climate Change to finance projects both for adaptation and mitigation including technology transfer and capacity building in various sectors.

In addition to the two funds specifically established to assist with the implementation of the Convention and the Protocol, three special funds have been established under the climate regime: the Special Climate Change Fund (SCCF); the Least Developed Countries Fund (LDCF), both under the Convention; and the Adaptation Fund (AF), under the Kyoto Protocol. The SCCF, in particular, was established to finance projects in the fields of adaptation and mitigation, including technology transfer and capacity building in various sectors (energy, transport, industry, agriculture, forestry and waste management, and economic diversification)⁶⁵. These funds could be explored as possible avenues for financing activities that also result in SLCF mitigation. In addition to managing specific funds established under relevant multilateral environmental agreements, the Global Environment Facility (GEF), which is replenished every four years, and is currently operating under GEF V (1 July 2010 - 30 June 2014), provides grants and concessional funding to meet the incremental costs of measures needed to achieve global environmental benefits in agreed focal areas, including climate change. The following objectives apply to the climate change focal area for the current funding window:

- demonstration, deployment and transfer of innovative, low-carbon technologies;
- market transformation for energy efficiency in the industrial and buildings sectors;
- investment in renewable energy technologies;
- energy-efficient, low-carbon transport and urban systems;
- conservation and enhancement of carbon stock through sustainable management of land use, land-use change and forestry;
- support for enabling activities and capacity building⁶⁶.

Subject to countries own choice and to applicable funding policies, GEF allocations could be used to support SLCF work, if proposed projects respond to the above objectives or fall under one of its cross-cutting areas, especially for pollutants such as black carbon and tropospheric ozone that are not traditionally considered primary climate forcers. In addition, future replenishment periods - GEF VI and beyond - could provide an additional opportunity for the GEF to specifically target SLCFs emissions.

The Clean Development Mechanism and new Green Climate Fund

Other mechanisms associated with the global climate regime, including the 'Fast Track Fund' and the Clean Development Mechanism (CDM), could be explored for their potential to facilitate SLCF mitigation.

Under the 'Fast Track Fund', developed countries have pledged to provide US\$ 30 billion by 2012 for adaptation and mitigation. This funding is supposed to increase to US\$ 100 billion annually by 2020. Some or all of these resources will be allocated through a 'Green Climate Fund' that could provide an opportunity in the future for further SLCF mitigation⁶⁷.

Although not technically financial mechanisms, the CDM and other flexible mechanisms can play an important role in channelling funds to mitigate SLCFs - especially methane - but also to some degree black carbon and other ozone precursors. This is because many of the measures for SLCFs also abate Kyoto Protocol gases and therefore are eligible for credits under such financing schemes⁶⁸. Unfortunately, however, the system does not fully cater to the needs of SLCFs mitigation, and some methane projects, such as those associated with landfills and wastewater, present challenges that make them less likely to attract investment. This is also due to the way by which carbon credits such as Certified Emissions Reductions (CERs) are calculated.

The CDM could do more to reduce methane emissions but further incentives need to be put in place to this end, and especially to promote small-scale projects such as municipal waste management. One such incentive mechanism is the Prototype Methane Financing Facility, described above.

65. http://unfccc.int/cooperation_and_support/financial_mechanism/items/2807.php

66. GEF Secretariat (2010). GEF-5: Programming Document, available from: <http://www.thegef.org/gef/sites/thegef.org/files/documents/GEF.R.5.31.pdf>

67. Fast-start finance: http://unfccc.int/cooperation_and_support/financial_mechanism/fast_start_finance/items/5646.php, Green climate fund: http://unfccc.int/cooperation_and_support/financial_mechanism/green_climate_fund/items/5869.php

68. About CDM: <http://cdm.unfccc.int/about/index.html>

Emissions of methane and black carbon often arise from multiple small sources such as cookstoves, diesel engines, brick kilns and agriculture, and may need to be addressed through ‘Programmatic CDM’ methodologies designed to cover these multiple small sources. Programmatic CDM projects, while proving at times difficult to implement, tend to be associated with significant development benefits, especially in least developed countries. The United Nations Framework Convention on Climate Change, UNEP and individual governments could work with the CDM Executive Board to facilitate the approval of such projects and work to shape new CDM methodologies or its eventual successor in the context of the new climate regime that include mitigation of SLCFs and air quality as an important co-benefit.

Integrating SLCFs into development assistance and other funding

Incorporating SLCF mitigation as an integral part of national development and poverty reduction strategies, particularly in relation to public health and food security, would be beneficial to eventually attract additional resources. To encourage this, the connection between

poverty reduction, air pollution and near-term climate change needs to be made more explicit. The fact that reducing the risk of environmental impacts that would result from near-term climate change will create large cost savings and overall promote economic development, needs to be more widely appreciated.

Bilateral and multilateral donors, including multilateral development banks, could choose to finance SLCF abatement activities directly for the specific purpose of near-term climate benefit to sensitive areas such as the Himalayas and the Arctic, or they could add and integrate black carbon and tropospheric ozone precursor reduction projects into their existing development assistance portfolios. Funding programmes would need to be tailored to support the specific SLCF mitigation measures applicable in a given country or region, and build on the relevant key sectors. For many countries, for example, SLCF mitigation could be integrated into improved cookstoves and waste management projects, while in other countries a good avenue could be provided by wastewater, transport and landfill infrastructure or brick kiln projects.