



Climate Financing by the Netherlands¹

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¹ Netherlands (2010). Fifth Netherlands National Communication under the United Nations Framework Convention on Climate Change, Ministry of Housing, Spatial Planning and the Environment, 214 pp.

1. Provision of new and additional financial resources

Global political, economic, social and environmental changes pose difficult choices for development policy. The Dutch government has worked to achieve the Millennium Development Goals (MDGs) ever since they were first agreed, as evidenced once more by its Agenda 2015 (Parliamentary Papers, 2007) and the Explanatory Memorandum to the 2008 Budget. Globalization necessitates a repositioning and rethinking of development cooperation. This was presented in the policy letter „Our Common Concern: investing in development in a changing world’ (Ministry of Foreign Affairs, 2007) by the Minister for Development Cooperation. A stronger policy focus on four areas was presented: security and development; growth and equity; more rights and opportunities for women and girls; sustainability, climate and energy.

The Netherlands emphasizes international cooperation by increasing policy coherence between aid, trade, the environment and human security. In 2009, the Netherlands ranks high among the industrialized countries of the world in terms of support for policies that benefit poor countries (Center for Global Development, 2009)

Access to modern, reliable and affordable energy is an important condition for economic development and poverty reduction (MDGs) and climate change is a major concern. Therefore, the Netherlands will intensify its support of “climate and energy”. In order to accelerate the achievement of MDG7, the Netherlands focuses on several key issues, including: greater coherence between international agreements on trade, the environment, climate and poverty reduction; an environmentally friendly, modern energy supply by 2015 for 10 million people who are currently dependent on traditional fuels; an additional investment in sustainable energy of € 500 million during the government’s present term in order to increase access to energy by the poor.

At the Conference of Parties in July 2001 in Bonn, the EU+5 reaffirmed their political commitment to increase their annual funding for climate change activities in developing countries during 2005-2008. For the Netherlands it implies that expenditure on climate change activities in developing countries during 2005-2008 should exceed the 2001 expenditures (€81 million) by €17 million annually. The ODA-related expenditures on climate increased to €100.362 million in 2008. Compared to the 2001 level of funding, new and additional funding under the Bonn declaration totalled €19 million in 2008.

It should be noted that The Netherlands meets its ODA commitment of 0,7% of GDP. Climate change policy, together with other ODA for support to environmental activities in developing countries is funded on top of this commitment raising the Dutch ODA level to 0,8% of GDP. For the period 2008-2012 another € 375 million will be added on top of the 0,8% GDP in support of renewable energy in developing countries.

In 2004, the Netherlands defined a target to provide energy services to 10 million people in 2015. In support of this target the Netherlands has allocated € 500 million to invest in renewable energy in

developing countries for the period 2008-2011 of which €375 million will be new and additional to the existing 0.8% ODA (official development assistance) efforts. The overall aim of this Promoting Renewable Energy Programme (PREP) is to enable developing countries to develop and implement policies supporting renewable energy with a focus on poverty reduction. The focus is on countries in Africa and Indonesia. The following lines of action are taken in order to achieve this objective: direct investments in renewable energy installations; ensuring the sustainability of biomass production for energy purposes; influencing policy of important actors in the field of energy; capacity development in the field of renewable energy.

The Global Environment Facility (GEF) received, on average, € 30.5 million per year, part of which (40%) is dedicated to climate change.

2. Assistance to developing country parties that are particularly vulnerable to climate change

The Netherlands actively contributes to the Nairobi Work Programme (NWP) under the UNFCCC to support countries, particularly developing countries, in adapting to climate change and mitigating negative effects. The Netherlands provides regular updates on ongoing research and policy development and lessons learned in the Netherlands, in support of knowledge sharing, awareness raising and extending the adaptation network.

Over the period 2005-2008, € 11,86 million was provided to the GEF's Least Developed Countries (LDC) Fund.

Besides multilateral assistance, the Netherlands also provides (bilateral) support to developing countries, as they suffer disproportionately from the effects of climate change. Many have large semi-arid regions that are becoming even larger and drier, while others will suffer recurrent flooding. Although the problems they face differ, they all suffer from a lack of money, technology and infrastructure to cope with climate change. If no additional effort is made, climate change threatens not only MDG7 (more people living in a sustainable environment by 2015) but the other MDGs as well, since an inadequate energy supply leads to water and food shortages, health problems, migration and resource-based conflicts.

In its new policy letter 'Our Common Concern: investing in development in a changing world' (Ministry of Foreign Affairs 2007), Dutch development cooperation was renewed and partner countries were organised into three profiles: accelerated achievement of the Millennium Development Goals (MDGs); security and development; and broad-based partnership.

Development cooperation will focus on 36 partner countries, plus support to four fragile states. Within the context of development cooperation, the Netherlands adheres to the Paris Agenda on Aid Effectiveness. In all 36 partner countries, a limited number of sectors have been chosen by the partner government.

Table 1. Classification of partner countries in profiles. Source: Ministry of Foreign Affairs, 2007

Accelerated achievement of MDGs	Security and development	Broad-based relationship
Main criteria: Low-income country; Fragility not dominant problem; Government structures offer enough potential to work with them	Main criterion: Fragility or major inequality blocking poverty reduction	Main criteria: (Prospective) middle-income country; Fragility not dominant problem
Bangladesh* Benin Bolivia* Burkina Faso Ethiopia* Ghana Kenya Mali Mongolia Mozambique Nicaragua Rwanda* Senegal Tanzania Uganda* Yemen* Zambia	Afghanistan Burundi Colombia Congo, Democratic Rep. Guatemala Kosovo SC Res.1244 Pakistan Palestinian Territories Sudan	Egypt* Georgia* Indonesia Moldova Vietnam South Africa Suriname**
Development cooperation to be phased out over next four years:		
Bosnia-Herzegovina Eritrea Sri Lanka***	Albania Armenia Cape Verde Macedonia, FYR	
Comments: *= countries that also have an actual or potential security problem **= agreement reached on phasing out of framework treaty resources ***= only humanitarian relief in response to current security situation		

During 2005-2008, a total of 118 projects were supported, some of which were regional and world-wide projects (38). Direct bilateral support on climate change was provided to 24 countries, nine of which were non-partner countries. Support to “worldwide” projects also entails support through non-governmental organizations, public-private partnerships and programmes with research institutes and multilateral organizations. For example it includes a large partnership programme on renewable energy with GTZ (Gesellschaft für Technische Zusammenarbeit). The focus of these programmes is often Sub-Saharan Africa.

Deforestation is also an important source of greenhouse gas emissions. Besides support to developing countries on mitigation and adaptation, an additional effort is also made to avoid deforestation. In support of the REDD initiative (Reducing Emissions from Deforestation and Forest Degradation), the Netherlands contributes € 15 million, for the period 2008-2012, to the World Bank's Readiness Fund of the Forest Carbon Partnership Facility (FCPF).

2.1. Mitigation

The budget for development cooperation provided support to 81 projects concerning climate change mitigation, and four projects in support of both mitigation and adaptation. Capacity building and transfer of technology is often an integral part of support programmes.

Projects relating to developing countries, including capacity building

The Netherlands uses various programmes to support access to renewable energy in developing countries (covers biogas, biomass, wind and solar energy).

Dutch development cooperation supports various programmes and has established several funds relating to renewable energy. The Access to Energy Fund has been established for the period 2006-2014, with a total budget of € 70 million. This fund provides loans for projects and aims to provide access to energy for 2.1 million people. Around 50% is related to renewable energy projects. Approximately € 21 million is currently committed.

In 2008 the Netherlands set up the Daey Owens Fund, with a budget of € 20 million. The Daey Owens Fund aims to provide more people in Least Developed Countries with access to energy by promoting small-scale renewable energy projects and job-creating forms of energy supply. The most important target group within the fund is the LDCs in Sub-Saharan Africa. Projects that are directed towards these countries therefore take precedence over projects in other LDCs. So far, 25 projects have been accepted and the fund aims to provide access to energy for 800,000 people.

In 2008 the Global Sustainable Biomass Fund (GSBF) was prepared. This fund started early 2009 with a project budget of € 12.5 million. The GSBF helps developing countries to make their biomass production for energy uses more sustainable. In relation to the other side of the biomass production chain, the Dutch Ministry of Economic Affairs has also established a fund for Sustainable Biomass Import (budget € 7.5 million).

Since 2008, the Netherlands has also supported the governments of Indonesia and Mozambique to build their capacity in the development of sustainable biomass programmes and smallholder participation in the production chain.

The Netherlands also supports biogas programmes. With support from the Netherlands, the organization SNV began working on biogas activities in Nepal back in 1989, and in Vietnam in 2003. Since 2006, domestic biogas programmes have also been established in Bangladesh and Cambodia, while a pilot programme in Lao PDR took off in 2007. Pakistan and Indonesia launched biogas programmes in 2009. The Asia Biogas Programme has a budget of € 12.9 million (2005-2012) and expenditures of € 5.2 million. By the end of 2008, more than 250,000 households (1.6 million people) have been equipped with biogas plants. Because of these achievements SNV has been invited by the Asian Development Bank to lead a working group on domestic biogas within the framework of the "Energy for All Partnership". Through this initiative, an additional one million biogas plants are planned across the Asian region by 2015.

In cooperation with Hivos, SNV's biogas activities have been expanded to include Africa. Rwanda is the first country of engagement, with another six countries (Senegal, Burkina Faso, Ethiopia, Tanzania, Uganda and Kenya) targeted under the framework of the "Africa Biogas Partnership Programme". This programme took off at the end of 2008 and aims to reach 70,000 households by 2013. The total budget is € 29.9 million for the period 2008-2013. Expenditures (to the end of 2008) were € 1.1 million.

The Netherlands has supported the Capacity Development for the Clean Development Mechanism (CD4CDM) since 2002. The contribution between 2005-2008 amounted to € 3.3 million. The programme is implemented by the UNEP Risø Centre (URC). CD4CDM helps to establish GHG emission-reduction projects that are consistent with national sustainable development goals, particularly projects in the energy sector. It develops national capabilities so the country is capable of analyzing the technical and financial merits of projects and negotiating possible finance agreements with Annex 1 countries or investors. The project aims to:

- generate (in participating developing countries) a broad understanding of the opportunities offered by the Clean Development Mechanism; and
- develop the necessary institutional and human capabilities that allow them to formulate and implement projects under the CDM.

During Phase I of the CD4CDM project, capacity and project development activities were completed in Bolivia, Cambodia, Cote d'Ivoire, Ecuador, Egypt, Ghana, Guatemala Philippines, Morocco, Mozambique, Uganda and Vietnam. Phase II of the CD4CDM project (2006-2009) will implement project activities in Algeria, Bangladesh, Peru, Mauritius, Nicaragua, Surinam and Tanzania.

Over the years, support has been given to the Global Village Energy Partnership, first through the World Bank Partnership and now directly (€ 4.5 million). The GVEP 2006-2010 programme aims to establish, for example, 300 successful small and medium-sized enterprises in East Africa, and 250 SMEs in Latin America and the Caribbean (LAC). The Netherlands' target is 900,000 people in East Africa and 250,000 people in LAC by 2010.

The Netherlands also works closely with Germany on providing access to renewable energy. Between 2005 and 2008 the organization GTZ (Gesellschaft für Technische Zusammenarbeit) received € 46.87 million for renewable energy projects in developing countries.

As previously mentioned, the Netherlands has defined a target to provide an environmentally friendly, modern energy supply by 2015 for 10 million people who are currently dependent on traditional fuels. The aforementioned investments resulted in the use of renewable energy services by 6.3 million people by the end of 2008 (starting in 2004) Ministry of Foreign Affairs 2009).

Together with UNDP, the World Bank and the US Department of Energy, the Netherlands has supported the greening of the energy sector portfolio of multilateral development banks. This resulted in a programme to develop green energy for small-scale urban and rural users in Asia and Africa (called FINESSE: Financing Energy Services for Small-scale End-users). A result of this programme was the establishment of the Asia Alternative Energy Programme (ASTAE), which was supported by the Netherlands. In a multilateral context, support was also provided to the Energy Fund for Africa (World Bank, IFC and African Development Bank and the ESMAP programme (Energy Sector Management Assistance Programme). The results of these programme are an enhanced understanding of the application of renewable energy, strengthening of national organizations and access to energy services by the poor (examples are hydropower in Zambia, solar power in Mongolia, and credit for renewable energy projects in Southeast Asia).

Projects related to Central and Eastern Europe

Projects related to Central and Eastern Europe are described in other sections, especially in section 5.

2.2. Adaptation

Projects relating to developing countries, including capacity building

The development cooperation budget included 33 projects relating to adaptation to climate change, plus four projects in support of both adaptation and mitigation. Capacity building and knowledge sharing is considered one of the important elements of support to climate change adaptation, and includes vulnerability assessments (but these are not reported separately).

In preparation of the climate change negotiations 2009, the Netherlands – together with other donors – supports, for example, the development of the World Bank study “Economics of Adaptation”. The results are expected at the end of 2009. A noteworthy supported project is the establishment of the Red Cross/Red Crescent Climate Centre. The centre's main approach is to raise awareness; stimulate climate adaptation and disaster risk reduction (both inside and outside the Red Cross and Red Crescent); analyze relevant forecast information on all time-scales, and integrate knowledge of climate risks into Red Cross Red Crescent strategies, plans and activities. The ‘Preparedness for Climate Change’ programme (PfCC, budget € 1.26 million) helps national unions in 37 developing countries to analyze the risks and implications of climate change, and to develop enhanced disaster management plans. From 2005-2008, expenditures totalled € 1.08 million. Climate change is now integrated into the strategies and plans of the International Federation (including regional offices) and in 40 national unions in developing countries. This has already resulted in fewer victims in Vietnam and Nicaragua (thanks to proper early-warning systems and community preparedness) and a better response to disasters in Mozambique and West Africa (rainy season 2008). In relation to strengthening national institutions, the Netherlands provides some specific support as shown by the NCAP and CD4CDM.

Projects related to Central and Eastern Europe

Projects related to Central and Eastern Europe are described in other sections, especially in section 5.

3. Provision of financial resources, including financial resources under Article 11 of the Kyoto Protocol

Provision of financial resources

The Dutch government maintains its ODA at 0.8% of its Gross National Income (GNI). Since 1997, 0.1% of the aforementioned 0.8% has been earmarked for assistance to the environment. Because of the increase in GNI, the overall ODA budget also increased. However, as a result of the economic downturn the ODA budget is expected to decrease over the coming years and to increase when the economy picks up again. The adjusted total environment budget for 2009 is estimated at € 635,195 million, of which € 273,263 million are expenditures directly dedicated to the environment (Parliamentary Papers 2009a), including expenditures relating to climate change mitigation and adaptation.

Table 2. Official Development Assistance expenditures and environment (€ million)

Expenditures	2005	2006	2007	2008
GNI	502 590	538 640	562 745	602 466
ODA percentage of GNI	0.83	0.82	0.81	0.8
Total environment	501.482	537.811	615.358	635 195
ODA Environment % of GNI	0,100	0.100	0.109	0.105

Source: HGIS (Homogeneous Budget for International Cooperation), 2006 -2009

The Netherlands contributes to a variety of multilateral and intergovernmental institutions – including the Global Environment Facility – that assist developing countries. Within the total contributions to these organizations part of this money is used to support environment-related activities or mainstream environment development activities. The extent to which expenditures, through multilateral channels, contribute to the goals of the Rio Conventions (including UNFCCC) varies considerably.

A contribution is made to UNFCCC through the contribution made to the GEF. Support to scientific, technological and training programmes can also be an integral part of contributions through multilateral, bilateral and civil society channels. The heading “Civil Society Support” for example also includes support to scientific institutions and their programmes.

Table 3. Environment-related financial contributions within ODA (€ x 1000)²³ Source: HGIS, 2006-2010

Expenditures	2005	2006	2007	2008
ODA nature and environment				
Country-specific sectoral cooperation	138 713	156 319	172 633	187 378
Thematic cooperation countries/regions	69 402	70 318	73 457	85 885
Subtotal	208 115	226 993	246 090	273 263
Attribution Macro-support	3 897	14 054	15 532	13 210
Multilateral institutions				
GEF-ODA/Montreal Fund	24 448	40 019	33 415	24 080
UNEP	8 373	4 132	6 832	9 383
Desertification Treaty	109	234	0	131
UNDP	9 647	9 217	9 953	9 401
IFAD (10%)	3 367	3 217	8 017	8 516
FAO Partnership programme	3 750	3 000	3 842	4 409
UN Habitat	7 480	7 789	8 280	1 656
IDA and regional development banks (5%)	31 554	4 489	13 576	11 363
World Bank Partnership Fund (30%)	25 862	13 868	12 879	12 897
European Development Fund (EDF, 5%)	6 890	6 969	7 479	8 340
Attribution Budget European Union	10 489	10 328	13 295	13 505
Subtotal	131 969	103 172	117 568	103 682
Civil society support Special activities	20 450	36 526	24 174	30 764
TMF and MFS (Specific support programmes for civil society organizations: TMF = Thematic Co-Financing, MFS = Co-financing System)	32 188	42 473	37 749	87 673
ORET, Miliev and ORIO	24 936	25 989	54 713	97 518
MFP	41 715	45 170	0	0
SALIN	0	0	77 830	3 163
SNV and PSO (7.5%)	13 748	16 843	15 868	14 407
MATRA	0	0	0	1 350
Subtotal	133 037	167 001	210 334	215 955
Other Operational expenditures	15 441	15 833	15 032	17 207
Nature and environment education	908	908	908	1 000
International Education Institutes	8 116	9 850	9 894	10 878
Subtotal	24 465	26 591	25 834	29 085
Total ODA Nature and Environment	501 482	537 811	615 358	635 195
GNI (x million)	502 590	538 640	562 745	602 466
ODA Environment % of GNI	0,100	0.100	0.109	0.105

Since 2002, The Netherlands supports the Capacity Development for the Clean Development Mechanism (CD4CDM). The contribution between 2005-2008 was €3.3 million. The programme, implemented by UNEP Risø Centre (URC) helps to establish GHG emission reduction projects that are consistent with national sustainable development goals, particularly projects in the energy sector. It will develop national capabilities so the country is capable of analyzing the technical and financial merits of projects and negotiating possible finance agreements with Annex 1 countries or investors. The project aims at 1) generating in participating developing countries a broad understanding of the opportunities offered by the Clean Development Mechanism, and 2) developing the necessary institutional and human capabilities that allows them to formulate and implement projects under the CDM. During Phase I of the CD4CDM project, capacity and project development activities were completed in Bolivia, Cambodia, Cote d'Ivoire, Ecuador, Egypt, Ghana, Guatemala Philippines, Morocco, Mozambique, Uganda and Vietnam. Phase II of the CD4CDM project (2006 to 2009) will implement project activities in Algeria, Bangladesh, Peru, Mauritius, Nicaragua, Surinam and Tanzania.

In relation to strengthening national institutions on climate change adaptation the Netherlands provides some specific support through the Netherlands Climate Assistance Programme (NCAP). The Netherlands Climate Change Studies Assistance Programme (NCCSAP) was initiated in 1996, in line with commitments made in 1994 under the UNFCCC to support developing countries to develop a climate policy. The Netherlands Climate Assistance Programme (NCAP), which is the successor of NCCSAP with similar aims, is implemented between 2003-2009 (budget €6.6 million). The stated aim of NCAP was to support a number of developing countries to prepare, formulate, implement and evaluate their policy in relation to climate change, with a view to these countries becoming self-supporting in formulating climate policy. More specifically, NCAP aimed to support developing countries by: (i) implementing studies to support the general aim; (ii) meeting commitments under the UNFCCC (in particular the national conventions); (iii) paying attention to impact and adaptation assessments (in particular for livelihood systems of poor communities); and (iv) raising awareness among policy makers, scientists and relevant NGOs. After an extensive reconnaissance and selection procedure in the first 18 months of NCAP, the following 14 countries were selected: Bangladesh, Bhutan, Bolivia, Colombia, Ghana, Guatemala, Mali, Mongolia, Mozambique, Senegal, Suriname, Tanzania, Vietnam, and Yemen. Between 2005-2008 expenditures were €3.9 million.

3.1. Breakdown of climate-change-related expenditures

Together with the OECD, the Netherlands developed a set of "Rio markers" that allows it to distinguish between climate-related funding and other funding. Within these categories a distinction is made between activities marked "principal" or "significant". Additional markers are used to distinguish support for adaptation and mitigation. By applying the guidelines of the OECD-DAC, a distinction can be made between budget allocations for adaptation and mitigation. The Netherlands also provides sectoral support on the environment to several partner countries. Part of this budget is also related to climate adaptation and/or mitigation. The extent of this cannot be calculated yet, and a first conservative

attribution estimate has been used. Over the coming years this estimate will be assessed more carefully. The Table below shows a breakdown of climate change expenditures between 2005 and 2008. The Netherlands has also contributed to the Least Developing Countries Fund (LDCF) and the Special Climate Change Fund (SCCF).

Table 4. Climate-change-related financial contributions to bilateral and multilateral institutions and programmes within ODA (€ x 1000)

Expenditures	2005	2006	2007	2008
Bilateral programme and civil society support				
Mitigation	36 379	31 068	35 563	51 263
Adaptation	13 465	15 734	12 173	13 889
Mitigation and Adaptation	220	1 186	405	423
Sector Support Environment 10%	848	1 088	1 319	2 426
	50 912	49 075	49 460	67 001
Multilateral institutions				
GEF-ODA plus Montreal 40%	9 779	16 008	13 366	9 632
UNEP 20%	1 674	826	1 366	1 828
Desertification Treaty 20%	22	49	0	26
UNDP 20%	1 929	1 843	1 991	2 077
IFAD 10%	337	322	802	852
FAO Partnership 10%	375	300	384	373
UN-Habitat 10%	748	779	828	828
WFP 10%	2 723	2 723	3 574	3 574
IDA and regional banks 10%	3 155	449	1 358	710
World Bank Partnership Fund 20%	5 172	2 774	2 576	2 576
European Development Fund 10%	689	697	745	835
Budget European Union 10%	1 048	1 033	1 329	1 350
New Funds				
LDCF	0	5 060	3 400	3 400
SCCF	2 400	0	0	0
Adaptation Fund	0	0,200	0,335	0,590
REDD (Readiness Fund)	-	-	-	3 000
Total	79288	82,139	81,514	98,652

In addition, the Netherlands also provided € 67,422 million in non-ODA funds to support climate change mitigation and adaptation. Besides assistance to developing country parties that are particularly vulnerable to climate change, the Netherlands also provides support to countries in Central and Eastern Europe, especially in relation to mitigation.

Table 5. Climate-change-related financial contributions non-ODA (€ x 1000). Source: HGIS, 2006 -2010

Expenditures	2005	2006	2007	2008
Non-ODA expenditures				
Clean Development Mechanism	16 513	22 529	21 150	40 124
Joint Implementation	9 698	6 455	11 130	9 176
GEF non-ODA	5 500	10 823	9 403	816
International Cooperation Environment	4 392	4 643	3 802	4 481
Water Management (Partners for Water)	9 891	7 460	6 832	12 825
Total	45 994	51 910	52 317	67 422

In 2008 the Netherlands supported the establishment of the Climate Adaptation Fund with a contribution of € 100,000 (in addition to the fund itself). In relation to food security, the Dutch Ministry of Agriculture, Nature and food Quality supported regional organizations in East Africa to integrate climate change adaptation into rural development programmes (€ 300,000). The Dutch Partners for Water programme combines the expertise on water and climate from various parties: the government, NGOs, companies and research institutes. In 2009 the programme will receive € 14.7 million from the Dutch Ministry of Transport, Public Works and Water Management.

3.2. Breakdown of bilateral support on climate change

Between 2005 and 2008, bilateral expenditures directly related to climate change increased. During the period 2005-2008, the Netherlands supported 118 projects with an amount of € 210,766 million (excluding sector support on the environment). Most projects and expenditures were related to mitigation. A total of 81 projects were related to mitigation, while 33 related to adaptation, and four projects were directly related to both mitigation and adaptation.

Table 6. Climate change financial contributions on mitigation and adaptation within ODA (€ 1000)

Expenditures	2005	2006	2007	2008	Total
Mitigation					
Principal	22 712	18 338	20 206	39 496	100 751
Significant	13 667	12 730	15 357	11 767	53 520
Total	36 379	31 068	35 563	51 263	154 272
Adaptation					
Principal	7 898	3 890	4 928	7 053	23 769
Significant	5 567	11 843	7 245	5 836	30 492
Total	13 465	15 734	12 173	12 899	54 262
Mitigation and Adaptation					
projects	220	1 186	405	423	2 233
Sector Env. 10%	848	1 088	1 319	2 426	5 681
Total	50 912	49 075	49 460	67 001	216 448

3.3. Financial resources, including under Article 11 of the Kyoto Protocol

Under the Treaty, developed countries must meet their targets through national measures, but the Kyoto Protocol offers the option to use additional market-based mechanisms to meet these targets. These are mainly the Clean Development Mechanism and Joint Implementation projects.

To buy carbon credits under the Clean Development Mechanism the Dutch Ministry of Housing, Spatial Planning and the Environment (VROM) has a budget of € 405 million for the period 2001-2013 (Parliamentary Papers 2009). Between 2005 and 2008 the Netherlands spent € 150,983 million under the CDM. For 2009, expenditures are estimated at € 50 million. In total the Netherlands will buy 45 million tonnes of carbon credits in order to realize its obligations under the Kyoto Protocol, 0,9 million tonnes of which are related to the Climate Adaptation Fund.

In relation to Joint Implementation, the Netherlands spent € 53,373 million between 2005 and 2008.

4. Activities relating to technology transfer

The Netherlands promotes the transfer of technology through various channels, e.g. through:

- EU programmes and mechanisms;
- participation in IEA programmes;
- bilateral or multilateral programmes and schemes.

These include regional cooperation, cooperation with developing countries and promotion of private sector involvement.

Actions to support institutions and frameworks for the development and transfer of technologies

- The EU's Environmental Technologies Action Plan (ETAP), helps to improve the development and wider use of eco-technologies, including climate-friendly technologies.
- The EU's emissions trading scheme (EU ETS), launched in 2005, helps to improve development, deployment and diffusion of a broad range of mitigation technologies. It is linked with CDM and JI markets, which are important mechanisms for technology transfer to developing countries and economies in transition.
- The Netherlands participates, for example, under the framework of official development assistance (ODA), in activities relating to human and institutional capacity building in a wide range of developing countries.

Actions to encourage effective participation by the private sector

- The EU ETS, linked to the CDM and JI markets, is designed specifically to provoke private sector actors to take action, including through the development and transfer of climate technologies.
- The Global Energy Efficiency and Renewable Energy Fund (GEEREF) focus on energy efficiency and renewable energy projects in developing countries and economies in transition.
- The Innovation Relay Centre (IRC) network. This enables cooperation with organizations in third countries that, for example, result in technology transfer agreements with developing countries on energy and environment.
- The Netherlands provides export subsidies to the private sector to encourage aspects such as technology transfer. For example, the Orio programme³⁰ is a programme for non-commercial environmental and sustainable investments in developing countries. ORIO contributes to the development, implementation (construction and/or expansion), operation and maintenance of public infrastructure in developing countries. Governments may submit a grant application to ORIO. This can be done on the initiative of a private party. Applications which meet the criteria are evaluated in competition. The winning applications will be eligible for a grant. The remaining

part must be financed by the local government in some other way; for example, from its own resources, a commercial loan, or funds provided by development banks. Expenditures during the period 2002-2008 amounted to approximately € 104 million annually. Examples of successful technology transfer via ORET/MILIEV include 150 public city buses in the capital of Ethiopia, and recovery of the mangrove forests in Vietnam.

Actions to promote collaborative R&D and deployment of technologies for mitigation and adaptation

- Participation in the multi-annual EU Framework Programme for R&D.
- The European Energy Technology Platforms (ETPs), set up to define common strategic research agendas at European level, which should mobilize a critical mass of national and European public and private resources. Examples of ETPs include solar PV, Biofuels, Zero-emission fossil fuel plants, Solar Thermal and Wind.
- Participation in international collaborative R&D partnerships on new energy technologies, operated as so-called Implementing Agreements under the International Energy Agency (IEA). The Netherlands is involved in many of these agreements, e.g. on hybrid and electric vehicles, energy conservation in buildings, renewable energies, advanced fuel cells, bioenergy, clean coal sciences, demand-side management, district heating and cooling, hydrogen technologies, solar PV systems, solar heating and wind energy.
- Bilateral or multilateral projects with developing countries. Examples include bilateral MOUs for cooperation in the field of environment and sustainable construction with China, various R&D cooperation projects between Dutch universities, knowledge institutions and partnerships, on a broad range of environmental issues (water, renewable energy, agriculture, etc.). Table 7.10 below provides further examples:

Technology transfer may encompass both hardware (equipment) and software (know-how) environmentally sound technologies. The Dutch support in relation to the transfer of technology is mostly in the form of support programmes relating to the private sector (encompassing hard and soft technologies). Until 2008, the support programme was called PSOM (Programme for Cooperation with Emerging Markets). The current Dutch Minister for Development Cooperation attached a great deal of importance to private-sector development in fragile states. In order to more vigorously support cross-border investments in these countries, he requested the EVD (Economic Information Service) to design a more flexible PSOM format for a number of fragile states. This programme has been named PSOM Plus, and was opened on June 25, 2008. PSOM Plus is similar to the regular PSOM, but has some extra features in order to further facilitate investments in the private sector of these countries:

- PSOM Plus is open for private companies and corporate foundations from the Netherlands and (other) DAC Countries;
- PSOM Plus imposes fewer requirements on the local partner;

- PSOM Plus may reimburse 60% of security costs and 100% of MIGA insurance on your investment;
- PSOM Plus issues four tenders a year with compulsory intake.

The total project budget for all countries was € 825,000, of which 60% was contributed by PSOM Plus. PSOM Plus was open to the following countries: Afghanistan, Burundi, Palestinian Authorities, Sierra Leone, and Southern Sudan.

As of 2009, the programme is called PSI (Private Sector Investment Programme) and is administered by EVD. PSI is a Dutch government programme that supports innovative investment projects in emerging markets in Africa, Asia, Central and Eastern Europe and Latin America. A PSI project is an investment project, implemented by a Dutch (or foreign) company together with a local company, in one of the eligible developing countries. If this investment meets the criteria, it can be eligible for a PSI grant, which consists of a financial contribution to the costs of the investment. PSI consists of two components: PSI Regular applies to 45 countries in Africa, Asia, Central and Eastern Europe and Latin America. The contribution for a project in one of these countries is 50% of the project budget, to a maximum contribution of € 750,000. PSI Plus is similar to the previous PSOM Plus. The contribution under PSI Plus amounts to 60% of the project budget, to a maximum contribution of € 900,000. For both components, the maximum project budget is €1.5 million.

An example of a typical PSOM project is the Madagascan renewable energy project. Madagascar became an eligible country in 2007 and the first project was to establish the first national independent power provider “Wind Factory Madagascar” (TWFM), owned by the Dutch Wind Factory and Malagasy BushProof. TWFM aims to bring a unique hybrid renewable energy system to Madagascar, which is a combination of a wind turbine and a generator. This hybrid system will supply energy to the national electricity network of the public energy and water company JIRAMA. Besides the generation of energy, TWFM will sell tailor-made hybrid (wind) systems to clients such as private sector companies, governmental agencies and NGOs. This will encourage the electrification of rural areas. The systems will be supplied along with service and maintenance contracts. The energy market perspectives in Madagascar are favorable due to the low electrification levels. The government wants to increase national coverage rate for electrification, from 15% in urban areas and less than 5% in rural areas, to 74% and 10% respectively by 2011, allowing independent power producers to access the energy market. Market prices for electricity are currently very high. Increases in supply will lower the price for the people, while volume of scale still makes the venture interesting for the investors. Wind energy can deliver power on a large scale, and, compared to thermal systems, wind systems can be installed rapidly. Moreover, Madagascar takes 5th place on the list of African countries with the highest potential for wind energy.

Technology transfer and international cooperation through flexible mechanisms

During the period 1992-1997 the Netherlands participated in the Activities Implemented Jointly (AIJ) pilot phase, where a variety of project types were implemented covering different mitigation

technologies. These projects were hosted by Annex-I, as well as by non-Annex-I countries, and have contributed to both the development of CDM and JI programmes and technology transfer. Since the introduction of AIJ in 1995 the Netherlands has funded 25 AIJ projects in 14 countries. All projects involved transfer of environmentally friendly technology and know-how.

The Netherlands then became involved in technology transfer via Joint Implementation and CDM. Bilateral MOUs for long-term cooperation are implemented in the field of CDM with Argentina, Bolivia, Brazil, Colombia, Costa Rica, Ecuador, Guatemala, Honduras, Indonesia, Mexico, Nicaragua, Panama, El Salvador and Uruguay. Contracts have also been signed with the Rabobank, the World Bank, the International Finance Corporation (IFC), the International Bank for Reconstruction and Development (IBRD) and the regional development bank for the Andes (CAF). Projects stimulate transfer and deployment of technologies in these CDM projects, for example on high-efficiency power plants, cogeneration, renewable energy, harnessing of landfill waste gases, etc.

In addition to the mechanisms, the Netherlands also started exploring the potential of International Emissions Trading, in particular via Green Investment Schemes (GIS). This implies that the profits from the AAUs are used to finance environmental and sustainable activities in the seller country, which contribute to a lower GHG economy in the long term. Examples include an International Emissions Trading (GIS) agreement with Latvia and a € 15 million investment in avoided deforestation facility by the World Bank FCPF.

Technology transfer for adaptation

For the Netherlands, some essential lessons learned in relation to technologies for adaptation include the need to build a solid knowledge base and the need for a more cross-sectoral and more integrated approach. Some of the barriers consist of the lack of supportive policies, cost/benefit analyses, and the non-availability of local/regional climate data. Furthermore, from the outcomes of activities completed under the Nairobi Work Programme, a number of gaps in present knowledge and evidence for best practise have been identified. Technologies for adaptation include 'hard' technologies, such as drought-resistant crop varieties, seawalls and irrigation technologies, or 'soft' technologies, such as crop rotation patterns. Many technologies have both hard and soft characteristics, and successful adaptation action would typically combine the two. There is also a continuing need to build better human capacity/skills for implementing and developing technologies in relation to understanding climate information and predictions (spatial analysis skills, satellite imagery etc.). Some examples of climate adaptation/technologies-related foreign support are:

- Catalyzing Acceleration of Agricultural Intensification for Stability and Sustainability. In Rwanda, the Netherlands is providing assistance through the Strategic Alliance for Agricultural Development in Africa (SAADA). As part of the CATALIST project, the University of Wageningen is implementing a research project on the vulnerability to climate change of the Nile delta, and assessing the options for economic sectors and water management strategies and relevant technologies.

- Consultative Group International Agricultural Research (CGIAR). The priorities of CGIAR research are reducing hunger and malnutrition by producing more and better food through genetic improvement, sustaining agriculture biodiversity, both in situ and ex situ, promoting opportunities for economic development and through agricultural diversification and high-value commodities and products, ensuring sustainable management and conservation of water, land and forests and improving policies and facilitating institutional innovation.
- Climate Monitoring for Africa. This yields data that are essential for the description of the climate, detection of climate change, improvements of climate models and development of climate scenarios, both on global and regional scales, and for adaptation measures. The ongoing work will be capacity building for the climate monitoring in Africa.

Development and enhancement of endogenous capacities by developing countries

Capacity building and institutional strengthening is an important element of Dutch programmes. Not only in developing countries but also with economies in transition, capacity-building actions are implemented, for example, through so-called G2G32 projects with Croatia (on ETS), Romania (on inventories and projections), Turkey (on Long-Term Agreements with industry etc).