

Global Climate Policy and Corresponding Activities on a City-Level

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HWWA Discussion Paper

Global Climate Policy and Corresponding Activities on a City-Level

**A Case Study of Hamburg and Its Citypartnerships With a
Special Focus on CDM-Potentials**

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ABSTRACT

Cities are not affected by global climate policy and the Kyoto Protocol – however many of them engage in voluntary activities. This paper analyses how communities in general and especially the city of Hamburg can contribute to global climate protection in their citypartnerships according to the slogan “think global, act local”. Possible activities are in the fields of awareness-raising, capacity-building, exchange of experiences and joint project implementation. A focus is layed on projects according to the Clean Development Mechanism of the Kyoto Protocol in north-south citypartnerships. There is a clear potential for reduction of transaction costs in this kind of projects due to the institutional links of the citypartnership. For Hamburg, CDM-potential is high in its partnership with Shanghai. Further possibilities for action are micro-projects with a strong development component in the partnership with León (Nicaragua), exchange of experience with the city of Chicago on its emission trading scheme and adaptation activities especially against sea-/riverlevel rise with the cities of Osaka, Dresden and Marseille.

Key Words

CDM, Citypartnership, Climate policy, Hamburg, Kyoto Protocol, Transaction costs

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1. Background and Purpose of Paper

1.1 Global Climate Policy

1.1.1 Scientific Background on Climate Change

There is an overwhelming consensus among scientists, that man causes climate change mainly by green house gas emissions stemming from combustion of fossil fuels.¹ The concentration of CO₂, the most important green house gas, has increased by 31% compared to pre-industrial times. Climate models project a rise of surface temperatures by 1.4°C to 5.8°C from 1990 to 2100, going along with sealevel rise, increased frequency of extreme weather events as well as a shift of climatic zones. Globally, the consequences of climate change are considered to be negative in an economic, ecological and social dimension. The impacts of climate change will be the worse, the faster a rise in temperature takes place.² Relative and absolute emission levels of developing countries are very low compared to industrialized countries both historically and at present. However emission amounts in developing countries are going to grow rapidly in the course of their economic development in the next decades.³

1.1.2 Climate Policy

Given the fact that the atmosphere is a public good, and CO₂-emissions do unfold their effects globally and independent of the place of generation, any strategy to mitigate greenhouse gas emissions to slow down climate change must consist of globally binding agreements on the use of the public good 'atmosphere'.⁴ The United Nations Framework Convention on Climate Change (UNFCCC) laid a foundation for international climate policy in 1992. The Kyoto Protocol to the UNFCCC was signed in 1997 and stipulates binding targets for the period 2008-2012 for six greenhouse gases for 38 industrialized countries and countries with their economies in transition as listed in Annex B. On aggregate these countries are committed to a reduction of CO₂-emissions by 5.2% as compared to 1990.⁵ The Kyoto Protocol demands cost-efficiency in climate protection and therefore provides the following flexible mechanisms: formation of a 'Bubble',⁶ the International Emissions Trading (between Annex-

¹ IPCC 2001; The international status quo of climate research is regularly summed up in the reports of the Intergovernmental Panel on Climate Change – IPCC). Numerous climate experts from all over the world contribute its preparation.

² WBGU 2003

³ IEA 2002, p. 19, 22

⁴ "Tragedy of the Commons" – see also article by Hardin (1968) which discussed the incentive for the overgrazing of land not being anybody's private property.

⁵ Excerpts of the targets: EU, Switzerland: -8 %; Canada, Hungary, Poland, Japan: -6%; Russia, Ukraine, New Zealand: 0%; Norway: +1%; Australia: +8%; Iceland: +10%

⁶ Several countries sum up their emission targets and redistribute them internally. The EU is the only bubble that exists under the Kyoto Protocol and it has redistributed the targets in its burden-sharing agreement.

B Countries), and the project-based mechanisms Joint Implementation (JI, between Annex-B countries) and Clean Development Mechanism (CDM, Annex-B countries and developing countries).⁷

1.1.3 Clean Development Mechanism – CDM

The efficiency of energy generation and use is relatively poor in developing countries compared to similar processes in industrialized countries. With a given amount of capital to be invested climate protection projects can lead to substantially higher abatement benefits in developing countries than in industrialized countries.⁸ The Clean Development Mechanism allows for Annex-B countries to invest in reduction projects in non-Annex-B countries and to credit generated emission reductions against their emission targets. The projects shall contribute to sustainable development in the host country, e.g. by transfer of environmentally sound technologies. Emission certificates out of CDM-projects (Certified Emission Reductions – CERs) can be generated already from the year 2000 and banked for the commitment period starting in 2008.

Because only projects resulting in “true and additional” emission reductions are eligible under the CDM, the rules for implementation of CDM-projects are relatively complex. Transaction costs, which result from the need for close interaction between the CDM-project partners and the fulfillment of the UNFCCC-CDM-rules, play an important role in the competitiveness of the CDM.⁹ Decisive for the volume of emissions reduced by CDM-projects are the costs of emission certificates which compete with the price of certificates generated by the other Kyoto Mechanisms and the costs of domestic emission reductions. CDM-certificates are estimated to sell for 4-5 €/tCO₂, with transaction costs ranging between 0.1 to 1,000 €/tCO₂, strongly related to project size.¹⁰

1.2 Cities and Climate Protection

Almost half of the world’s population is living in cities by now and this number is increasing rapidly. In 2030, urban citizens are expected to make up 60% of the world’s population.¹¹ Besides this process of urbanisation, which is especially taking place in Africa and Asia,

⁷ Kyoto Protocol: Bubble – Art. 4, Emissions Trading – Art. 17, Joint Implementation – Art. 6, CDM – Art. 12

⁸ Comparison of mitigation costs: averaged results of 16 macro-economic models of the Energy Modelling Forum:
no trade 82.3 US\$/tCO₂ (OECD/Europe); 53.4 US\$/tCO₂ (USA)
trade inbetween Annex B countries 20.9 US\$/tCO₂
trade globally 9.7 US\$/tCO₂
(source: IPCC 2001)

⁹ Because small projects tended to be unattractive because of high fixed costs in transaction costs, the UNFCCC introduced simplified modalities and procedures for small projects.

¹⁰ Michaelowa, Stronzik 2003

¹¹ UNCHS 2001, p. 270. table A.2

globalization has led to a growth in importance of cities as “globalization necessarily materializes in specific institutional arrangements in specific places, many of which are in cities.”¹² Cities play an ever more important role as nodes in a global network-society.

Local authorities and their communities have been increasingly recognized as crucial for achieving sustainable development since the 1992 UN Conference on Environment and Development (UNCED) in Rio de Janeiro. At the Rio-Summit, local authorities were outlined in Agenda 21, Chapter 28, as being a determining factor in fulfilling its objectives.¹³

At the same time, new hope is placed on development at the local level. International cooperation is more and more focusing on decentralized cooperation and on communities as a major partner after the concept of centralized development cooperation has proved to be rather unefficient. The slogan “think global, act local”, which has been widely used in sustainability theories and activities since Rio, brings this to a point.

In the field of climate protection, cities take an important part, contributing substantially to global green house gas emissions. The building sector alone, which is clearly attributable to the city-level, makes up for almost a third of CO₂ emissions globally and still for more than 23% of CO₂ emissions in developing countries.¹⁴ ICLEI¹⁵ states, that even three quarters of total energy consumption takes place in cities because of spacial concentration and diverse activities.¹⁶ When it comes to local authorities they are on the one hand responsible for part of the city’s emissions and on the other hand are able to address other actors on the city-level effectively.¹⁷

Cities respond to the growing responsibility they face with corresponding actions: A fast growing number of cities all over the world have become engaged in local Agenda 21 activities.¹⁸ However, priorities set by cities in these processes towards sustainable development strongly depend upon the origin of the cities: Whereas in industrialized countries, environmental protection is a most important topic in Agenda 21 processes, in developing countries there is a clear focus on economic development.¹⁹

¹² UNCHS 2001, p. xxxiii

¹³ UNCED 1992

¹⁴ IPCC, 2001, p. 176 ff.; The share of the buildings sector in global CO₂-emissions has constantly been over 30% from 1971 to 1995.

¹⁵ The International Council for Local Environmental Initiatives is an association of municipalities that want to exchange experiences, see <http://www.iclei.org>. For its climate change activities see <http://www.iclei.org/co2>

¹⁶ ICLEI, 1994, p. 15 ff.; “Energy consumption is, by definition, local, and cities are major energy consumers: about three-quarters of total energy is consumed in cities, so that a high share of energy demand for heating, commercial/industrial activities and transportation is concentrated in urban agglomerations.”

¹⁷ Kallen, 1996, p. 2: “Local authorities must therefore use their opportunities to influence the situation. Their close proximity to households, industrial and trade establishments and road users makes it easier for them to address target groups directly and effectively at the local level.”

¹⁸ CSD 2002, p. 8: Whereas the 1997 report mentions only 1,812 cities with Local Agenda 21 processes, this number has increased considerably to 6,416 in 2001. 44% of the 2001-number were actively undertaking Local Agenda 21 programmes.

¹⁹ CSD 2002, p. 16: Environmental protection is named a priority issue by 51% of cities in developed countries and by only 14% in developing countries. Economic development is given priority by 10% of cities in developed countries and by 34% of

In the AIJ-pilot phase of project-based Kyoto-mechanisms Joint Implementation and Clean Development Mechanism more than half of the projects had the name of a city in their project title,²⁰ in CDM-like projects, the share is 20%. This does not necessarily and usually mean, that the city is directly involved as a project partner, however the naming shows the close relation of projects to their location.

1.3 Global Climate Policy Broken Down to Activities Eligible in Citypartnerships

Cities have joint forces in community networks to take effective voluntary action to protect the climate, independently of global climate policy. Worldwide 530 local governments participate in ICLEI's Cities For Climate Protection Campaign, "collectively representing approximately 10% of the world's anthropogenic greenhouse gas emissions."²¹ 419 German cities alone are member to the Climate Alliance,²² including 42,3% of the German population. Whereas in the Cities for Climate Protection Campaign a reduction target is to be set by the city itself, cities participating in the Climate Alliance have „committed to halving CO₂ emissions“ on a voluntary basis.²³

However global climate policy did not affect the city level up to now. National emission targets have not been broken down to city level and the EU Emission Trading Scheme again uses a sectoral approach. It can thus be assumed, that the potential of cities for climate protection has been far from being utilised in global climate policy as a whole and also with regards to potential for the Clean Development Mechanism.

It seems reasonable to examine possibilities on how to address the global challenge of climate protection and the according answers by the state community to define activities that are adequate for the local level. The question is on how to better integrate cities into global climate policy. The discrepancy between the goals of communities in Agenda21-processes, Southern communities clearly focusing on economic development, and their Northern counterparts prioritizing environmental protection, might well offer a good playingfield for joint activities in the framework of citypartnerships, among them CDM activities.

cities in developing countries. Activities underway in developing countries focus on poverty alleviation and community development.

²⁰ AIJ did not involve emission credits and was active between 1995 and 2001. 79 of the 156 AIJ-projects carry the name of a city in their project title. Another 4 projects explicitly refer to the community level in their project name. 13 out of 70 AIJ-projects between Annex I and non-Annex I countries carry the name of a city in their project title. Another 2 projects explicitly refer to the community level in their project name.

²¹ Number of cities per region: North America - 212; Australia/NewZealand - 144; Europe - 134; Asia - 25; Africa - 10; South America - 10

²² <http://www.klimabuendnis.org/start.htm>

²³ Climate Alliance / Klima-Bündnis 2003; However, this ambitious reduction target, set in the Climate Alliance Manifesto 1990, generally will not be reached and the Climate Alliance Declaration following in 2000 already scales down expectations: "reducing CO₂-emissions to a per-capita-value viable with climate" in the longterm, as well as "clearly measurable reductions in greenhouse gas emissions" in the short term that "exceed reduction targets agreed upon by the industrialized countries".

2. Climate Protection in Citypartnerships

2.1 Climate Protection on City Level

On the one hand, cities have a good reason to take climate protection activities because they will be directly affected by the adverse effects of climate change. Urban infrastructure and services are vulnerable to climate change effects, such as changes in rain fall patterns and extreme weather events. On the other hand, secondary effects which come alongside with climate protection activities, such as improvement of air quality, are another motivation for climate protection activities on community-level.

Although there is a citizen's interest in climate protection mainly in Northern cities, the city network ICLEI, a major actor in the field of cities and climate protection, emphasizes the importance of secondary effects as a motivation for local authorities to take action. The experiences made in ICLEI's Cities for Climate Protection Campaign show, "that global issues are likely to be adopted at the local level if co-benefits, such as improving fiscal responsibility, urban livability, quality of life and economic development can be stressed."²⁴

Blümling, in his studies on climate protection on community level in Germany,²⁵ states that the direct and measurable success of climate protection activities on city level is rather small up to now and the ambitious reduction targets adopted by many cities are far from being reached. He attributes this, among others, to the fact that many communities have no reliable inventories of CO₂ emissions. His results are being underlined by an ICLEI report on the Cities for Climate Protection (CCP) Campaign in the United States, where achieved emission reductions on an average made up for a bare 1% of participating cities' total emissions. Since only five out of 68 participants in the US CCP Campaign are already exercising monitoring processes and proper inventories, these figures are to be considered as estimates.²⁶

The Cities for Climate Protection Campaign by ICLEI has defined a specific and systematic approach to effective climate protection, that addresses the problems described by Blümling. Participants in the CCP-Campaign commit themselves to fulfill a milestone-plan that consists of: emission inventories and forecasts, establishment of an emission reduction goal, development and adoption of a local action plan, implementation of this local action plan and monitoring and evaluation of the implementation of the local action plan.²⁷

²⁴ ICLEI 2002: p. 5

²⁵ Blümling 2000

²⁶ ICLEI Cities for Climate Protection Campaign-US 2000; p.2, 7

²⁷ <http://www.iclei.org/co2>

2.2 Stakeholders and Their Motivations

On the city level, a range of stakeholders can partner in climate protection activities. Local authorities take a special role due to their role model and framework setting character. Other actors are city based companies of different size as well as civil society organizations.

2.2.1 Public Sector

Local Authorities

There is a broad range of different fields of climate protection, in which local authorities can become active. On the one hand, local authorities should create conditions that encourages activities in the area of climate protection by all stakeholders. This includes the setting of an emission target in a participatory process and monitoring of achievement of this emission target. Adequate action has then to be undertaken to reach the target – i.e. local authorities have to work to achieve the target in the city-owned or -operated sector and further have to set a framework that favours investment in climate protection activities by other stakeholders on the city level.

The influence of local authorities on different fields of action, the relevance of these fields for climate protection and eligibility of projects as CDM-projects differs substantially. An overview is given by table 1.

Role of Local Authority	Activities	Influence of local authority	Relevance (amount of CO₂-emissions)
Planning and Regulation	City-planning, building-sector, transport generated by settlement pattern	++	++
Consumer and Role Model	City-owned car park, buildings and land, public or semi-public enterprises	++	–
Supplying and Operating	Energy, public transport, waste management, infrastructure for pedestrians and cyclists	ownership of operations ?	+
Promoting and Advice	Information, incentives, grants, financing models, public-private partnerships, publicity, participation	o	+

Table 1: Role of Local Authorities for Climate Protection

Source: based on Climate Alliance 2003, ICLEI 1994, own additions

Cities can either act as ‘actors of their own right’ (i.e. in regulation, planning, public services and public properties) or as a ‘facilitator’ (dissemination of information, programmes, ...). Activities taken by the city as part of their planning and regulation job seriously influence a city’s contribution to climate protection. A local authority’s behaviour in its own area of

operations is crucial for the success of any other community activities since it shows the commitment of the local authority, that leads by example.²⁸ The percentage of CO₂-reductions that can be directly realized in this section is relatively small.²⁹ However, according to Blümling, considerable CO₂ reductions by German cities have only been achieved in the sector of community owned buildings.³⁰

A significant climate protection potential lies in the provision of public services such as energy, public transport and management of waste and waste water. The role of the city authorities depends upon its influence on these operations. Furthermore the city can act as a facilitator and promote climate protection activities by other actors in the city.

Futhermore, local authorities can be affected by the EU Emission Trading Scheme when operating plants with large amounts of CO₂-emissions, e.g. hospitals. In this case, local authorities take a business point of view, that is further elaborated in the following chapter under 'Large Companies'.

2.2.2 Business Sector

Large Companies

Large companies are often major energy consumers and thus CO₂ producers. Climate protection activities undertaken by companies are in general those economically feasible already today, e.g. because they lead to savings in a company's energy costs. Companies are acting in a way to maximize their profits – their behaviour is therefore mostly influenced by the framework set by energy prizes.

The EU Emissions Trading Scheme provides for another framework in the area of climate policy. It affects appr. 2,430 plants in Germany, most of them belonging to large companies. Under the Emissions Trading Scheme plants have got emission targets derived from the national allocation plan.³¹ Operators of these plants will decide on which of the following measures to take to meet their targets after a cost-analysis:

- reducing emissions in the own company,
- buying emission certificates from other companies, or

²⁸ Blümling shows that communal climate protection activities have already served an additional effect: They help to establish communication and cooperation structures, and are building awareness and motivation among a city's stakeholders. These effects are not quantifiable, but are believed to result in CO₂-reductions in the longterm.

²⁹ Cities for Climate Protection Australia Program, 1998-1999 Program Report, p. 25, 26; within Australian cities that participate in the Cities for Climate Protection Campaign, corporate emissions by the community in its own buildings and vehicle fleet made up for only 1.2 % of overall community emissions.

³⁰ In this sector, from 1990 to 2000 reductions from 10% - 20% have been realized – however, community owned buildings add only between 2 and 5% to overall emissions of a city.

³¹ National Allocation Plan of Germany: http://www.bmu.de/files/nap_kabinettsbeschluss.pdf on 7 June 2004

- making use of the Clean Development Mechanism as allowed in the EU-“linking directive”.³²

According to different bottom-up and top-down models, domestic climate protection activities in industrialized countries are significantly more expensive than action in developing countries.³³ Therefore there is assumed to be a big case for CDM-activities under the EU Emissions Trading Scheme as long as the initial allocation is stringent enough to generate a demand. Companies might either try to buy CERs from unilateral project developers or from funds, or they might themselves develop CDM-projects with a project partner in a developing country. A possible scenario would be for companies to develop CDM-projects in a partnership of their home city, making use of existing relations between the two cities. The local authorities could facilitate such CDM-activities by information transfer and partner matching services.

Other aspects that could motivate companies to take climate protection activities include positive effects the company expects in reputation and stakeholder loyalty. When it comes to climate protection activities by companies in citypartnerships and especially the CDM, a motivation could be to enter new markets that often have substantial potential for growth. Another factor not to be underestimated is the ‘emotional’ one, i.e. the fact that business leaders themselves might enjoy to be ‘morally good’ and thus decide to play a voluntary role in approaching the problem of climate change.³⁴

Small and Medium Sized Companies

For small and medium sized companies the same reasons and motivations for climate protection activities apply as for large enterprises, except that they are not affected by the EU Emissions Trading Scheme.

Smaller companies are more often not listed on stock exchanges than large companies they do not have equally strict obligations for their operations and reporting. They are often dominated by the persons that first built up the business and are still leading it – meaning the emotional factor is more important. Therefore smaller enterprises are more likely to take action in climate activities that are not economically feasible or only so in the medium or long run.

³² CDM-activities are eligible under the EU Emission Trading Scheme from its first trading period starting in 2005, regardless of entry into force of the Kyoto Protocol. EU Commission linking directive: <http://www.eu.int/cec/env/cc> or <http://europa.eu.int/rapid/pressReleasesAction.do?reference=IP/04/505&format=HTML&aged=0&language=EN&guiLanguage=en> on 4 June 2004

³³ See footnote 8

³⁴ Partly based on results of the workshop ‘Why should business join a Global Marshall Plan’ in Brussels, 4/5 May 2004; accessible at <http://www.globalmarshallplan.org>

2.2.3 Civil Society

Stakeholders of civil society such as churches, schools, one-world-networks or environmental organisations mostly have an altruistic approach and a strong moral background. They often have built up good capacity for climate protection or development cooperation activities and often have human potential at hand. However their financial means are generally rather small and most of their work is based on the individuals' strongly idealistic attitudes. An important motivation for people active in civil society organisations is official and sincere appreciation of their activities. This can best be achieved by incorporating civil society activities in a city's agenda for climate protection. A participatory approach to such an agenda is of major importance to tap the potential of civil society for climate protection. Contribution of civil society to locally based climate protection activities will probably be mostly in the area of providing expertise and man-power.³⁵

The Individual Citizen

Pro-climate activities by individual citizens can either be economically viable – e.g. the insulation of their house can pay off because of energy savings or energy savings plus incentives by a city- or state-run subsidy-programme, or they can be not economically viable, thus imposing an economic burden on the one implementing it.

The overall goal must of course be, that authorities at an appropriate level (be it local, state or supranational) make individual or companies' pro-climate behaviour economically feasible. Since only few frameworks are in place up to now, 'consumer behaviour' by individual citizens is often promoted as a key to sustainable development at large and climate protection especially. When adapted to the area of climate protection, the concept means that citizens take the issue of climate protection in account when taking investment- and consumption decisions. This is happening when people decide e.g. for 'green electricity' although tariffs are more expensive or when they decide to compensate for their air travel by paying for emission certificates offered by different providers.

2.3 Citypartnerships³⁶

2.3.1 Background

There are 15,000 – 20,000 citypartnerships worldwide, whereof about 2,000 are believed to be North-South and with a focus on development.³⁷ Citypartnerships have initially evolved after World War II and were then perceived as a means to build bridges of understanding and

³⁵ UNDP 2000, 4.5: "Many if not most community-based projects are likely to require some additional technical support. This can be provided by a NGO familiar with the town or knowledgeable about the sector concerned."

³⁶ Heinz, W. and Langel, N. 2002; UN-HABITAT 2001; UNDP 2000; Ahmad 2001;

³⁷ UNDP 2000, 4.7

confidence. These first links were between towns located in industrialized countries of the North, a major part of them between France and Germany. The partnerships were exclusive, which means they generally took place between the two town halls, only partially including the community as a whole e.g. by meetings of clubs and associations and group-specific exchanges.³⁸ Citypartnerships are long-term in character and mostly have an open agenda. They are mostly urban, i.e. there is a tendency that cities are more active in citypartnerships than villages.

2.3.2 North-South Citypartnerships

Beginning in the 70s, community development had come to the centre of several then newly established links between communities from the South and from the North. The term ‘City-to-City-Cooperation’, abbreviated ‘C2C’, applies for these partnerships and describes their new paradigm, that is joint work on urgent problems. Experience made in these partnerships underlines the crucial importance of the following aspects for the success of C2C:³⁹

- mutuality and reciprocity, i.e. both partners perceive benefits deriving from a link
- community-wide participation and commitment by different stakeholders (experience shows that then a lot of work is done on a non-profit basis and thus more can be achieved with a given budget)
- understanding and trust which is promoted by a clear and not too ambitious agenda

There are supposed to be several non-quantifiable results of C2C. With the northern partner this is a growth in understanding of conditions in the south and of effects of globalization on the poorer part of the world’s population, as well as building of awareness for global development and environmental issues. Southern partners profit from the feeling of having a partner in the north who cares.⁴⁰

There is a growing interest in C2C also in the scene of international cooperation. Assumed advantages of C2C towards traditional development cooperation are, that it is closer to the man on the street and that the “link provides a direct way for the public at large to participate in development efforts and to obtain an accounting for their own community’s contributions.”

⁴¹ First attempts have been made by the donor community to promote economic development by C2C. Communities themselves have outlined the importance they attribute to C2C in the ‘Declaration of Communities to the World Summit on Sustainable Development’ in

³⁸ UNDP 2000, 3.1 and 3.2

³⁹ UNDP 2000, 4.4

⁴⁰ UNDP 2000, 3.4

⁴¹ UNDP 2000, 3.3

Johannesburg.⁴² The World Habitat Day, declared by the United Nations Centre for Human Settlements (Habitat) on October 7th 2002, had as its topic ‘City to City Cooperation’ and promoted “partnerships between cities and local authorities worldwide as a cost-effective and meaningful way to encourage sustainable urban development.”⁴³

2.4 Climate Protection Activities in Citypartnerships

A study carried out by the German Institute for Urban Affairs⁴⁴ analysed 62 ‘partnerships for development’ between 22 of Germany’s biggest cities and their partners in the South or East. Out of these partnerships, 24 named environmental protection a focus of their joint activities, and 14 mention concrete activities for climate protection. Another survey was done by two German consultants in the field of local agenda21 processes, CAF-Agenda Transfer and LAG3W⁴⁵ on city-to-city-cooperation in the federal state of North Rhine Westfalia, Germany. It spotted 59 project- or citypartnerships between 42 communities and their partner communities in South and East. 23 of these partnerships concentrate on environmental issues. With 17 partnerships climate protection activities are on the common agenda. Topics in climate protection that have been identified as being of primary interest in both studies include waste, waste water, energy and traffic.⁴⁶

	German Institute for Urban Affairs	CAF-Agenda Transfer / LAG3W
Citypartnerships analysed	62	59
Environmental activities in these C2C	24	23
Climate activities in these C2C	14	17

Table 2: Citypartnerships in Germany and the Role of Environment/Climate Protection
Source: Numbers derived from Difu 2002, CAF/Agenda-Transfer and LAG3W 2000

These results clearly show that there is an interest in joint actions on climate protection by existing citypartnerships. Furthermore, there also is an interest in C2C by cities participating in the ICLEI Cities for Climate Protection Campaign. Those cities declared at their Heidelberg Conference in December 2001 that “twinning will become an integral part of the

⁴² Declaration of Communities to the WSSD: Point 6, Commitments by local governments [...] “To undertake City to City / Municipal International Co-operation activities and partnerships, aimed at mutual learning, exchange of good practice, and the development of capacity for sustainable development, in particular in the context of growing urbanisation.”

⁴³ Habitat News 2002

⁴⁴ Difu 2002

⁴⁵ CAF/Agenda-Transfer and LAG3W, 2000

⁴⁶ Difu-Study / CAF-Agenda-Transfer-Study

- waste: 5 / 6

- waste water: 5 / water: 7

- energy: 3 / 4

- traffic and city-planning: 6 / infrastructure: 4

Cities for Climate Protection Campaign in the near future.“⁴⁷ At the international conference on renewable energies ‘Renewables 2004’, which was held in Bonn from 1st to 4th of June 2004 by the German Government, there was a segment by local authorities on 30th/31st of May. Outcome off this event was besides the local government declaration, the commitment of the cities of Bremen (Germany) and Pune (India) to reach a joint target of a certain percentage of renewable energies in their city partnership.⁴⁸

Steffan did a study in 2000 on whether citypartnerships could do joint climate protection projects on a compensation basis.⁵⁰ He analyses three case studies of citypartnerships between German cities and their partners in the East and South and concludes that there is a high

	Amount of CO₂-Emissions reduced	Comple- xity	Importance of secondary effects	Possible Stakeholders
CDM-Projects	Large	high (due to UNFCCC -rules)	dependent on host country (in general rather low) ⁴⁹	- Large companies (in Northern-City esp. the ones affected by the EU Emissions Trading) - Business Associations (Chamber of Commerce, etc.) - Local Authorities
Micro-Projects (small projects with simplified CDM- rules)	Small	dependent upon standards applied	high (major motivation for project developers)	- Local civil society organisations such as schools, churches, other NGOs - Small and medium sized enterprises - Local authorities
Capacity Building / Awareness-raising	no causality verifiable	middle	not applicable	- Local civil society organisations such as schools, industrial training schools, churches, other NGOs - Companies - Local Authorities
Projects for Adaptation to Climate Change	not applicable	varying	not applicable	- Local civil society organisations - Companies - Local Authorities

Table 3: Climate-Change Related Activities in a Citypartnership

⁴⁷ ICLEI 2002, p. 4; “The partnerships can occur between municipalities in the same region or development context or between Annex 1 and non-Annex 1 municipalities. The varying development context can facilitate a local level of foreign aid, allowing municipalities in the less wealthy region to tap into the capacity that may exist in cities from a wealthy region. While this initially may seem to be merely altruistic on the part of the municipalities from wealthy regions, it can yield benefits for both parties. It can lead to potential partnerships that could facilitate trade, economic development and even carbon trading.“ “The resulting Heidelberg Declaration recommended that ICLEI adopt twinning as part of the CCP campaign, and that existing CCP participants be asked to commit to engaging in such partnerships as part of fulfilling their CCP commitment.”

⁴⁸ Oral communication Ulrich Nitschke, Service Agency Communities in One World (‘Servicestelle Kommunen in der Einen Welt’) on 2nd June 2004, Bonn. At the Renewables 2004, the Municipal Leaders Conference on Renewable Energies ‘Local Renewables 2004’ adopted the ‘Local Governments’ Renewables Declaration’ on May 31st 2004. <http://www.service-eine-welt.de/localrenewables/index.php> on 8th June 2004

⁴⁹ The contribution of CDM projects to sustainable development of the host country has to be certified by the government of the host country. However this is giving incentives to host countries to put low sustainability standards in order to make the CDM process less complicated and therewith cheaper and thereby attract more investors.

⁵⁰ Steffan 2000

potential for climate protection projects in citypartnerships, because such projects would profit from the existing contacts in a citypartnership and from a possible know-how-transfer.⁵¹

Activities of citypartnerships in climate protection can either be in the field of mitigation of climate change, i.e. emission reductions/carbon sequestration, or they can be in the field of adaptation to climate change. Activities can be grouped into project-based activities and capacity-building/ awareness-raising activities. Project-based activities offer good opportunity to get true and measurable results, that can clearly be attributed to the measures taken. The following table gives an overview of possible activities and the characteristics of each activity. Measures will be explained in further detail in the following subchapters.

2.5 CDM Projects in Citypartnerships

A major aim of the CDM is the involvement of developing countries into the climate regime.⁵² It does so by promoting capacity building for climate protection activities and transfer of environmental sound technologies. The Kyoto Protocol demands that CDM projects contribute to sustainable development in the host country. Since national governments are the ones to set the sustainable development criteria for their country, they have an incentive to set relatively unambitious criteria to attract more foreign investment.

CDM projects have to be 'additional' to any projects happening in the host country anyway, to guarantee for real emission reductions. Therefore CDM rules demand the formulation of a baseline, that is the reference scenario, that would have happened without the CDM project taking place. Michaelowa and Jotzo expect market prices for CDM projects to be at 3-4 €/per tCO₂ reduced, and come to the conclusion, that economically viable CDM projects must have an emission reduction of at least 20,000 t CO₂ per year.⁵³

CDM projects might be an interesting activity in north-south citypartnerships: The concept is taking into account the situations of the two partner-cities as they are in different stages of local agenda21 processes - the northern city more interested in environmental protection, the southern partner more interested in economic development.⁵⁴ Moreover, CDM projects have a good chance to lead to measurable success, which the Commission on Sustainable Development identified as crucial for successful implementation of local agenda21 issues.⁵⁵

⁵¹ Since the global climate policy rules for the Kyoto Mechanisms JI and CDM only were defined after Steffan finished his studies, he could and did not go into deep detail of CDM and JI rules.

⁵² WBGU 2003; If global climate policy is to continue after Kyoto and achieve a significant slowdown of climate change, climate protection obligations in the middle term must also include developing countries due to their rapidly growing emissions.

⁵³ Michaelowa, Jotzo 2003; one major factor for economic viability are transaction costs. Find more details on CDM and transaction costs in the following chapter '2.5.2 Transaction Costs for CDM-Projects in Citypartnerships'.

⁵⁴ CSD 2002, p. 16

⁵⁵ CSD 2002, p. 19

Doing a CDM-project within a citypartnership, can enhance reciprocity in a partnership, which is said to be an important characteristic for successful citypartnerships.⁵⁶ The two cities are acting as partners and each partner has something attractive to take and to give. The following subchapter further describes motivation of different stakeholders in citypartnerships for to engage in CDM-projects.

2.5.1 Motivation

Motivation to undertake activities under the CDM in citypartnerships is different among stakeholders and between northern and southern partner.⁵⁷ To begin with the northern partner, one motivation to undertake CDM-projects clearly would be the possibility it offers for cost-efficient achievement of either voluntary reduction commitments (local authorities, some businesses or NGOs) or binding emission targets (large companies and some city-owned facilities under the EU Emissions Trading Scheme). Another motivation would be the possibility to generate tradable emission certificates that can later be sold on the EU emission market or can be used to offer CO₂ compensation services (companies). Especially for civil society organisations, but also for other stakeholders engaging voluntarily in climate protection activities, a CDM project's contribution to sustainable development in the partner city is a decisive factor.

For the partner in the south, CDM-projects hold the promise of:

- generating additional income and jobs,
- making use of external knowhow for solution of urgent problems
- reduction of local pollution (such as air pollution).

2.5.2 Transaction Costs for CDM-Projects in Citypartnerships

The demand that any emission reductions achieved by CDM projects must be 'additional' to a baseline-scenario, which is a necessary demand to make the CDM environmentally sound, leads to an elaborated project cycle that CDM projects have to undergo. This results in significant costs caused by fulfilling the subsequent steps of the project cycle. A big part of these costs is fixed and not dependent on project size, which makes smaller projects economically less attractive. Additional costs are arising from initiating and completing transactions with the project partner in the CDM-project.⁵⁸ Both these costs are further referred

⁵⁶ UNDP 2000, 4.4 and chapter '2.3 Citypartnerships' of this paper.

⁵⁷ The following analysis is based on Jackson, Tim; Begg, Katie and Stuart Parkinson (eds.) (2001), Gosh, P. (2000) and own additions.

⁵⁸ Examples for this kind of costs are: finding partners, holding negotiations, consulting with lawyers or experts, monitoring agreements, etc

to as ‘transaction costs’. They raise the costs for participants and thereby lower the trading volume of the CDM or even discourage CDM projects from occurring.

Michaelowa and Stronzik, who give an update of the discussion on transaction costs arrive at the conclusion that transaction costs are highly dependent on the size of projects: “Empirical evidence suggests that economies of scale are the most important determinant for the share of transaction costs in total costs due to the important role of fixed costs components.”⁵⁹ They do an analysis of actual transaction costs within the AIJ pilot phase and the Prototype Carbon Fund, as well as of studies by Price Waterhouse Coopers and others. In their analysis they show that many project types with a relatively small CO₂-reduction potential that are supposed to have substantial development benefits are not viable economically, despite streamlined UNFCCC rules for small-scale projects.⁶⁰

Table 4 provides an overview over transaction cost components in the subsequent steps of the project cycle. It shows the relation between cost components and project size and gives information on whether a reduction of cost components is to be expected when applying the small-scale rules or when the project takes place in the framework of a citypartnership.

Transaction costs depend on various factors and some of them might well be influenced by a citypartnership’s institutional arrangements. The degree of the following characteristics significantly influences transaction costs by eventually making more integrated governance modes necessary:⁶¹

- Uncertainty
- Transaction frequency

The question, that Michaelowa first raised in 1996, is whether CDM projects can be realized more cost-efficient in the framework of citypartnerships, and especially whether transaction costs can be reduced by ‘making use’ of the institutions of a citypartnership.⁶²

The critical role of non-economic institutions in the economy has been highlighted according to an assessment by Boerner and Macher by many economic sociologists who have made contributions to research in this field.⁶³

⁵⁹ Michaelowa, Stronzik (2002), p. 15 ff; p. 24

⁶⁰ The ‘Community Development Carbon Fund’, launched by the World Bank in 2003 is addressing this challenge. The Fund finances CDM projects, that among other criteria fall under the small-scale definition, are taking place in least developed countries or rural areas of developing countries, and do lead to improvements in material welfare of host communities, e.g. by the provision of services and goods. The emission reductions achieved are promoted as “Development + Carbon’ ERs (ERs with the added value of development benefits)”. at <http://carbonfinance.org/cdcf/home.cfm> on 4 June 2004

⁶¹ Boerner, Macher 2001, S. 5

⁶² Michaelowa 1996

⁶³ Wang 2003

The factors of uncertainty and transaction frequency are expected to be influenced by a citypartnership – e.g. CDM projects taking place in a citypartnership can be bundled and thus lead to economies of scale. Frequency of transactions of any kind in citypartnerships can usually be assumed to be higher than in a reference case, since promoting business links and

Transaction Costs Components	Description	Relation to project size	Cost Estimates	Reduction of Transaction Costs expected by	
				Small-scale rules	C2C
Pre-Implementation					
Search Costs	Costs incurred by investor and hosts as they seek out partners for mutually advantageous projects	Fixed	15,000	–	++
Negotiation Costs	negotiations, doing the contract, Preparation of PDD, public consultation with stakeholders	Degressive	25,000 – 400,000	–	+
Baseline Determination Costs	Development of Baseline (consultancy)	Fixed	35,000	++	O
Approval Costs	authorisation from host-country	Proportional	40,000	–	–
Validation Costs	Review and Revision of PDD by operational entity	Fixed	15,000 – 30,000	–	–
Review Costs	reviewing a validation document	Fixed		–	–
Registration Costs	Registration by UNFCCC EB	Slightly degressive	10,000	–	–
Implementation					
Monitoring Costs	Costs to collect data	Fixed	10,000	+	O
Verification	Costs to hire operational entity and report to UNFCCC EB	Degressive	8,000 per turn	+	–
Certification	Issuance of CERs by UNFCCC EB	Degressive	NA	+	–
Enforcement	Costs of administrative and legal measures in event of departure from the agreed transaction	Proportional		–	+
Transfer Costs	Brokerage Costs	Proportional	1%	–	+
Registry Costs	Costs to hold account in national registry	Proportional	0.03%	–	–

Table 4: Transaction Costs in the CDM
Source: Michaelowa, Jotzo 2003 p. 4; own additions

transactions is one major activity in many citypartnerships. Increased frequency of transactions leads to reputation effects, i.e. you know the partners you are dealing with better.

There is a bundle of transaction costs, that are spent in waiting, getting permits to do business, cutting through red tapes and bribing officials. These are named ‘non-market transaction costs’ by Hernando de Soto.⁶⁴ According to de Soto, non-market transaction costs are rampant in developing and transition countries.

In its 2002 study on citypartnerships in development cooperation UNDP praised citypartnerships for their cost-effectiveness compared to traditional development cooperation because of the following points:⁶⁵

- “costs of experts and project management which are typically incurred in traditional development cooperation, can be much reduced in links through their relatively unbureaucratic approach“
- “direct and short channels of communication“
- “spirit of volunteerism“

There seems to be good reason to affirm that using the institutions of a citypartnership for CDM project realization can reduce transaction costs. *Table 4* indicates which transaction cost components can be expected to be reduced in a citypartnership and makes clear that these constitute a significant contribution to overall transaction costs.

Role of Local Authority	Activities	Influence of local authority	Suite d for CDM	Relevance	Comments
Planning and Regulation	City-planning, building-sector, transport generated by settlement pattern	++	--	++	Prerequisite for Climate Protection, not directly applicable as CDM project
Consumer and Role Model	City-owned car park, buildings and land, public or semi-public enterprises	++	+	-	Quantitatively not relevant for CDM – qualitatively probably important activity
Supplying and Operating	Energy, public transport, waste management, infrastructure for pedestrians and cyclists	Dependent on ownership of operations	+	+	Possibility for concrete CDM projects
Promoting and Advice	Information, incentives, grants, financing models, public-private partnerships, publicity, participation	o	o	+	Facilitating CDM actions for other actors in the city

Table 5: Role of Local Authorities for Climate Protection
Source: based on Climate Alliance 2003, ICLEI 1994, own additions

⁶⁴ De Soto (1989)

2.5.3 Role of Local Authorities in the CDM

Local authorities can promote the realization of CDM project within a city's citypartnerships. In economic terms, local authorities are probably able to reduce the burden of transaction costs on project developers.

When looking closer at the specific role local authorities can take in the CDM, we see that they can either act as **investor**, which means the local authority is financing a CDM project from its own budget, or it can act as a **facilitator** and bring together possible investors from the North and project developers from the South. See *Table 5* for an evaluation of the role of local authorities in the CDM.

2.5.4 Suitable CDM Project Types

Size	Type relevant for citypartnership	Reduction tCO ₂ /a	Transaction costs estimate in €/tCO ₂	Comments
Very large	Landfill methane capture	> 200,000	0.1	- Most CDM projects with approved methodologies by UNFCCC are landfill gas projects up to now. - 46 out of 156 AIJ projects in this category
Large	Wind power, solar thermal	20,000 – 200,000	1	- Appr. 55 of 156 AIJ projects in this category - 2 windpower and 2 fuel substitution projects submitted to CDM Executive Board (EB), but no methodology approved yet
	Fuel substitution (e.g. public transport)			
Small	Boiler conversion, small hydro, Bio mass	2,000 – 20,000	10	- Appr. 24 of 156 AIJ projects in this category - Several projects of this type but slightly larger sizes submitted to CDM EB
	Demand Side Management			
Mini	Energy efficiency in housing & small and medium-sized enterprises, mini hydro	200 – 2,000	100	- Appr. 13 of 156 AIJ projects in this category - No project submitted to CDM EB so far
Micro	PV	< 200	1000	- Appr. 4 of 156 AIJ projects in this category - No project submitted to CDM EB so far

Table 6: Project Size and Types – Categories

Source: Michaelowa, Stronzik 2002 p. 25, table 17, own additions

There are no sinks projects included in the table since detailed rules on sink projects have not yet been agreed.

⁶⁵ UNDP 2000, 4.6

Table 6 gives an overview over project types suitable for the city-level. Activities are classified according to the amount of reductions in CO₂-equivalent per year. The role of local authorities differs from project type to project type – it is further elaborated in the following chapter. The table also gives an order of magnitude of transaction costs arising from the different project categories, strongly related to the project size.

2.5.5 Micro-Projects

Climate protection activities with emission reductions of less than 2,000 tCO₂/a can be referred to as ‘mini-‘ or ‘micro-projects’.⁶⁶ Typical projects of this size category are energy-efficiency in buildings, energy-efficiency improvements in small- and medium enterprises or PV. A widespread assumption is, that these projects lead to higher positive secondary effects.

Table 6 shows that transaction costs for small projects are significant and become prohibitive for mini- and micro-projects. Aware of this problem, UNFCCC released streamlined rules for so-called ‘small-scale’ CDM projects.⁶⁷ However, *Table 4* shows that reductions in transaction costs resulting from the small-scale rules will only reduce certain components of transaction costs while others remain high. Thus the small-scale rules do not change the picture significantly and small projects will still not be in the mainstream of the CDM.⁶⁸

Despite micro-projects not being viable under CDM rules from an economic perspective, there may be a case for micro-projects in the context of citypartnerships. Micro-projects are feasible for many important local stakeholders, like schools, churches, small enterprises or other nongovernmental organisations that hold limited capacity for the realization of complex large scale projects as they are envisioned by the CDM.

Official CDM rules should not be the standard to be applied for the realization of micro-projects, since costs generated by applying them would outweigh any climate or secondary benefits. With micro-projects there is a need to newly balance the demand for verified climate protection effects and for an unbureacratic, easy-to-understand approach. Such a simplified and standardized set of rules for micro-projects does not exist yet. However attempts are being made for its development e.g. by a network of climate- and development NGOs as well as scientific institutions in Germany under Gold CDM.⁶⁹

The World Bank sees both a potential for a premium segment and a need to further elaborate on CDM projects with community involvement. The bank has launched a ‘Community Development Carbon Fund’ in 2003, that aims at linking “small-scale projects in developing

⁶⁶ Michaelowa, Jotzo 2003, S. 8

⁶⁷ Pembina 2003; UNFCCC Decision 21/CP.8

⁶⁸ Michaelowa, Jotzo 2003, S. 8 f.

⁶⁹ The network is promoting the development of a ‘Gold Standard’ for CDM projects that could also include special rules for micro-projects. Further information is to be found at <http://www.goldcdm.net>

countries seeking carbon finance with companies, governments, foundations, and NGOs seeking to improve the livelihoods of local communities and obtain verified emission reductions”.⁷⁰ The CDCF is expecting the carbon assets generated by the fund to be a premium market. To lower transaction costs and risks, “the Fund will work with local intermediaries and small and medium-sized enterprises (SMEs) including financial institutions, project developers, micro-credit organizations, and NGOs”.⁷¹ Such a multi-stakeholder approach should also be followed with micro-projects that take place in the context of citypartnerships.

2.6 Other Activities

2.6.1 Awareness Raising and Capacity Building for Climate Protection

Activities in the area of awareness raising and capacity building can include capacity building of stakeholders both in Hamburg and its partner cities, as well as exchange on best practice communal climate protection activities. Public relations is also a possible activity in this field. Local authorities can either undertake such measures themselves or support external stakeholders in organizing them.

Local authorities have a potential to link the expertise existing with the various municipal stakeholders. There might be a demand for consulting both in CDM and micro-project development that local authorities can either meet by themselves or link the advice-seeking party and respective experts in the city. Existing know-how can thus be bundled and made available where needed. Concrete capacity building measures could include workshops in partner cities interested or exchange trips of office staff responsible for climate protection activities in the cities. Measures in public relations are important for awareness raising and therefore should go alongside with any climate protection activities.

2.6.2 Adaptation to Climate Change

Adaptation to climate change increasingly gains attention as a necessary strategy to face climate change. The steady rise of CO₂-concentration in the atmosphere has already led and will further lead to an increase of the global average surface temperature by 1.4 to 5.8°C.⁷² Going along with this rise in temperature is a rise of the sea level which is projected to be in the range of 0.09 to 0.88 m for 1990 to 2100.⁷³ Other effects will be a shift of climates and increased frequency of extreme weather events.

⁷⁰ World Bank, CDCF (2004), <http://www.communitycarbonfund.org>

⁷¹ World Bank, CDCF (2004), <http://www.communitycarbonfund.org>

⁷² IPCC 2001, Issue I Scientific Basis, chapter 9.3.3

⁷³ IPCC 2001, Issue I Scientific Basis, chapter 11

Due to the continuing trend of urbanization,⁷⁴ climate change will increasingly affect urban populations, not so much rural or traditional settlements. Some possible effects of climate change on urban infrastructure and population are the following:

- as a consequence of temperature rise, an increase in need for space cooling in residential buildings, that is currently fueled by electricity, mainly in developing Asia and in Central and South America⁷⁵
- increase in air conditioning in commercial buildings (here temperature rise is adding to the effect of ongoing computerization that causes heat-production in office rooms)⁷⁶
- exacerbation of local air pollution by warm weather episodes

Poverty is a factor that increases the effects of climate change on the population. “A growing proportion of the population suffering from absolute poverty lives in urban areas. [...] Where it occurs, urban poverty reduces the capacity of urban populations to take action to adapt to climate change; poverty also may exacerbate many of its effects.”⁷⁶

Activities of a citypartnership in the field of adaptation can therefore be an important climate change activity. Possible measures are an exchange of experiences partner cities have made with adaptation or the implementation of concrete adaptation projects, e.g. on the issue of flooding.

3. Hamburg – Its Citypartnerships and Climate Protection

3.1 Hamburg – General Conditions

To elaborate on Hamburg and possible climate protection activities in cooperation with its partner cities, it is essential to line out political conditions of the national or supra-national level to the local level in both Hamburg and its partner cities. For example participation in the CDM requires prior ratification of the Kyoto Protocol and the set up of a designated national authority for CDM-approval.⁷⁷

3.1.1 European Climate Policy

The European Union has been arguing for strict emission targets in international climate negotiations. The EU has reached its UNFCCC target to stabilize CO₂ emissions by 2000. For the Kyoto commitment period from 2008 to 2012, the EU has formed a ‘bubble’ with an

⁷⁴ See chapter ‘1.2 Cities and Climate Protection’ of this paper.

⁷⁵ IPCC 2001, Issue II, Impacts, Adaptation and Vulnerability, chapter 7.2.1

⁷⁶ IPCC 2001, Issue II, Impacts, Adaptation and Vulnerability, chapter 7.2.1

⁷⁷ UNFCCC 2001, Marrakesh Accords, Decision 17/CP.7

emission target of –8%, including all its then member states. Inside of the bubble, emission targets have been redistributed according to the ‘burden-sharing’ agreement. The agreement allows for economically weaker countries to further develop and increase their emissions, whereas the more developed European countries have adopted stricter targets to compensate for this increase. Since efficient national climate policies are missing in many member states the achievement of national targets is at risk in many countries.

Adopted in 2003, the European Emissions Trading Scheme shall contribute to meeting these emission targets. The Emissions Trading Scheme now has to be implemented in national jurisdiction. National allocation plans have been developed to regulate the initial allocation of emission permits. In Germany appr. 2,430 operators of plants will be affected by the EU ETS, in Hamburg the number of operators affected will be around 42. The so-called ‘linking directive’ links the CDM and the JI to the EU Emissions Trading Scheme. It allows for emission certificates generated via CDM projects to enter the EU market.

3.1.2 German Climate Policy

Germany has adopted an emission target of –21% (for the period 2008-2012, based on 1990 emission) under the European burden-sharing agreement. In a post-Kyoto phase after 2012, the German government is ready to adopt an emission target of –40% to the year 2020 provided that the EU takes an overall target of –30%. Besides the United Kingdom of Great Britain Germany is the only OECD-country that has achieved significant reductions in greenhouse gas emissions in the past decade. While half of these reductions can be assigned to so-called ‘wall fall profits’ going along with the break down of large parts of industries in the former German Democratic Republic, the other 50% originate in national climate policy.⁷⁸

Germany has become increasingly involved in preparations for the use of the flexible instruments of the Kyoto protocol. Whereas in the so-called AIJ pilotphase from 1996 to 2001 only 6 projects out of 150 were with German participation, diverse activities around CDM and JI have developed in the last year. The German Ministry for the Environment compiled and published guidelines for CDM/JI project developers and started the development of a CDM/JI databank that shall support project developers as well. A national designated authority for approval of CDM projects was set up and registered at the UNFCCC, the so-called JIKO. Furthermore, the German bank group ‘KfW Bankengruppe’ has launched a carbon fund with a target volume of 50 million € in accordance with the state of Germany.⁷⁹

⁷⁸ Eichhammer et al. 2001

⁷⁹ The government is promising a seed fund of 8 million € whereas the rest is to be collected from private companies.

3.1.3 Hamburg's Climate Policy

Hamburg has got 1.7 million inhabitants and current per capita emissions of appr. 9 t CO₂/a. Overall emissions have increased from 13.4 million tCO₂/a in 1990 to 15.2 million tCO₂/a in 2001. The increase has taken place mainly in the sectors of energy generation, waste incineration and industry. Emissions from traffic and households/small consumers has remained stable.

	Time	Money spent in €	Emission reductions achieved in tCO ₂	Costs of emission reductions in €/tCO ₂	Secondary effects achieved	Partners
Initiative 'Employment and Climate Protection' ⁸⁰	Starting from 1998	110,000,000	25,000 (1998-2003)	4,000	2,000 man-years of employment created	
Hamburg CO₂-Competition ⁸¹	2001/ 2002	117,000	12,200	4-18		Environmental Office, Energy Supplier HEW, BP, KfW, Hamburg Institute of International Economics
'Hamburg Resource Protection' / 'Partnership for the Environment'	Starting from 2001	Measures are economically feasible	> 8,800 (2001-2004)	Negative costs	Energy- and cost savings	Environmental Office, Hamburg Chambers of Commerce, Handycraft, Industry, Businesses
Greenlight-Programme of the EU	From 1996	22,000,000 (1996-2003)	14,000 per year	Negative Costs	Energy- and cost savings	Schools, gyms, administrative buildings
For Comparison: CDM projects						
CDM projects	Starting from 2000			3-4 ⁸²		

Table 7: Climate Policy in Hamburg

Hamburg is member of the Climate Alliance and has adopted the Climate Alliance emission target of -50% for 2010 based on 1990 emissions. However the emission trend goes in the opposite direction and like in other Climate Alliance cities there are no ambitions to reach the high-flying target. Officially, the city of Hamburg does not refer to this 50% target in its climate policy. This position is reflected by the online presence of the city – there is not a

⁸⁰ <http://www.arbeitundklimaschutz.de>

⁸¹ Press release on the Hamburg CO₂-competition
http://www.hwwa.de/Projekte/Forsch_Schwerpunkte/FS/Klimapolitik/PDFDokumente/Wettbewerb_Presse.pdf

⁸² See footnote 53

single mention of the word ‘Emissionsziel’ (meaning emission target) on the city’s website.⁸³ However in the discussion process ‘Wachsende Stadt’⁸⁴ an agreement has been reached to adopt CO₂-emissions as an indicator for the city’s sustainable development. Discussion is now going on, on whether to adopt an emission target for CO₂ emissions and on what should be that target.⁸⁵ If Hamburg wants to achieve serious emission reductions (in contrast to the increase in emissions perceived right now), the adoption of an ambitious yet realistic emission target is a top priority.

Climate policy in Hamburg has resulted in the activities shown in tables Table 7 and Table 8.

	Time	Emission reductions achieved in tCO ₂	Costs of emission reductions in €/tCO ₂	Secondary effects achieved	Partners
Voluntary Compensation: “newpower green citizen / green event” ⁸⁶		2,000 - 3,000 (newpower green citizen)	5		HEW, individual citizens, individual event-organizers
EduaRD Education and Renewable Energy and Development ⁸⁷	Since 2002			North-south schoolpartnerships established, intercultural understanding	Comprehensive School Blankenese, SET Selected Electronic Technologies Wedel Ltd, plus other schools, other companies, public institutions
KAZE-project ⁸⁸	Since 2002/2003		Compensatory payment of 5 €	Combating rural poverty by serving basic energy needs with PV	Churches, individual citizens

Table 8: Activities by Stakeholders in Hamburg

⁸³ Results of a google-search for “emissionsziel” on <http://fhh.hamburg.de> on May 19, 2004

⁸⁴ ,Wachsende Stadt’ = Growing City

⁸⁵ Oral information from Kurt Maier, Project Office for Sustainable Development, Authority for City Development and the Environment of the City of Hamburg (Projektstelle Nachhaltige Entwicklung, Behörde für Stadtentwicklung und Umwelt)

⁸⁶ This programme was not induced by Hamburg’s policy but by the local energy company HEW’s policy. A relatively small number of citizens is participating in the programme. Due to a process of structural change within HEW/Vattenfall the future shape of this programme is not set yet. Source: oral communication Hauke Beeck, HEW, 24th February 2004

⁸⁷ EduaRD was initiated by Clemens Krühler from the Comprehensive School Blankenese, Hamburg. It promotes the use of solar energy (PV) embedded in north-south schoolpartnerships. The project started in Hamburg in 2002. Up to now 17 projects have been undertaken or are in a planning status. 12 out of these include participation of Hamburg schools, 6 of the projects are between a Hamburg school and a school or university in Hamburg’s partner city León (Nicaragua). The project is supported by: Hamburg Senate, Environmental Agency Hamburg, Ministry for Education and Sports Hamburg, Hamburg Fond for Climate Protection, North German Foundation for the Environment and Development, Energy Foundation Schleswig-Holstein, BINGO Environment Lottery, Hamburg Electricity Plants, SET Ltd, Körber Foundation, One World Network Hamburg, Rotary Club Hamburg-Deichtor.

⁸⁸ The KAZE project was initiated by Jan Christensen from the North-Elbian Missionary Society and was originally planned to compensate for the Missionary Society’s staff flying to oversea working places. The project promotes compensation for oversea flights by micro-projects. Passengers who are willing to participate and compensate for their flight’s CO₂-emissions

3.2 Hamburg and its Citypartnerships

Municipal Foreign Policy

The question might arise, whether climate protection activities Hamburg undertakes in its citypartnerships are legal. Hamburg has a special status because it is both a city and a state, thus having more competencies than an ordinary German city. Foreign policy is domain of the federal government according to Art. 32 of the German Basic Law. Competencies concerning foreign policy must specifically be lent to the states (the German 'Länder'). The ministerial presidents of the 'Länder' have defined the principal competence of the confederacy for development cooperation on conferences in 1962, 1967 and 1988. For development cooperation undertaken by the 'Länder' they have agreed among others upon the following two aspects of cooperation: technical cooperation including development and transfer of adequate technologies as well as protection of the environment and natural resources.

Development Cooperation of the 'Länder' and related expenditures going along are included in their scope of functions⁸⁹ which is based on their legislative competence and defined in Art. 70ff of the Basic Law. This competence is including environmental protection and protection of resources. In any case, the 'Länder' have to follow the guidelines of federal fidelity in their activities.⁹⁰

Setting a Clear Target

Before investing in any climate protection activities with its partner cities, Hamburg should set a clear target for these activities and ensure that a sufficient amount of resources is allocated to these activities. Starting from the target, a bundle of measures can be developed according to interests and mitigation potentials in the partner cities. The setting of a clear target is essential for presentation and legitimation of the project in the public. Combined with a proper monitoring process, the city can then present the degree of achievement of objectives and thus provide for transparency and show the success and efficiency of the project. Clearly measurable results make up successful agenda21 activities.⁹¹

A possible goal for Hamburg could be to reduce 5% of its CO₂-emissions by joint projects with its partner cities.⁹² 5% equals 750,000 tCO₂ per year. In addition to the setting of such a target, an agreement is advanced with the partner cities, to make climate protection a priority in the citypartnerships.

pay 5 €per tCO₂. With this money micro-projects in renewable energies in Africa are financed, such as workshops or micro-financing for solar lamps, PV for radio and other basic devices in schools/churches/hospitals, etc.

⁸⁹ Wiedmann 1990, S. 694

⁹⁰ Wiedmann 1990, S. 694

⁹¹ See footnote 55.

⁹² This figure was first mentioned by a member of the Ministry for City-Development and the Environment – 'Behörde für Stadtentwicklung und Umwelt' in January 2003. Calculations as presented in this paper showed that the 5%-target is not realistic at the moment because of its far-reaching financial consequences. However the calculations on financial resources such a target would require are presented here to give an order of magnitude of existing potentials.

More concretely this would mean, that the city of Hamburg either is investing in projects in its partner cities that make up for a reduction in CO₂-emissions equaling 5% of Hamburgs emissions or is facilitating according activities by stakeholders in the city, e.g. activities by companies affected by the EU Emissions Trading Scheme.

Costs

The 5% target could be reached by doing CDM projects with a reduction volume of 750,000 tCO₂. Assuming a price of 3-4 €/tCO₂ from CDM projects, a 5% reduction would need finances of ca. 2.25 million € per year. An immense number of micro-projects would be necessary to reach these substantial reductions.⁹³ The effects of awareness-raising activities can not be quantified and therefore not be accounted towards the reduction target.

Financing

Since the EU Emissions Trading Scheme allows for emission reductions via CDM projects, Hamburg based companies affected by the emission trading scheme might have an interest in realizing CDM projects together with companies in Hamburg's partner cities. Another option is for the City of Hamburg to do CDM projects and sell CO₂-certificates to affected companies in Hamburg or directly on the EU-market. Reductions in both cases would have happened anyway due to the EU-trading scheme. It could be argued, that reductions thus are not 'additional' and should not be accounted towards a target.⁹⁴

The budget of Hamburg 2004 includes 52.9 million € of investment resources for energy- and water-saving measures for the phase 2004-2008.⁹⁵ This is 10 million € per year. Although not all of this money can be allocated freely due to existing commitments, parts of the budget item could be used to finance climate activities in citypartnerships especially because this would lead to a significant increase in efficiency of expenditures for climate protection. Another option might be the voluntary compensation of CO₂-emissions by individual citizens or small enterprises. Such a service is offered by the electricity supplier HEW.⁹⁶

Partners for Projects

The initiative for a project 'climate protection activities in Hamburg's citypartnerships' could come from the Hamburg Senate (= government) and the Ministry for City Development and the Environment (Behörde für Stadtentwicklung und Umwelt). Thus the know-how of the prime minister's office in development cooperation and cooperation within citypartnerships enters the project as well as the capacity of the Ministry for City Development and the

⁹³ Fulfilling a 5% target exclusively with micro-projects with a reduction volume of less than 2,000 tCO₂ annually would require realisation of more than 300 such projects.

⁹⁴ This problem can be solved by defining whether the emission target includes this kind of emissions in the first place.

⁹⁵ Financial Report Freie und Hansestadt Hamburg 2004

⁹⁶ The service 'newpower green citizen' offers compensation of CO₂-emissions by buying emission certificates stemming from voluntary projects. Another programme offered by HEW allows to compensate for CO₂-emissions of events by buying certificates: 'newpower green event'. Source: oral communication Hauke Beeck, HEW, 24th February 2004

Environment in the fields of climate policy and climate protection activities. Important stakeholders for such a project would be the companies affected by the EU Emissions Trading Scheme, economic associations such as the chamber of commerce, small and medium sized enterprises, local NGOs, and the private citizen.

Partner Cities

Hamburg has got citypartnerships with the following cities: Chicago (USA), Dresden (Germany), León (Nicaragua), Marseille (France), Osaka (Japan), Prague (Czech Republic), Shanghai (China), St. Petersburg (Russia).

Costs for CO₂-reductions by climate protection activities in Chicago, Dresden, Marseille or Osaka are supposed not to differ substantially from costs in Hamburg.¹⁰¹ A major component of activities could therefore be the exchange of experiences. Minimum costs of CO₂ mitigation in Prague, St. Petersburg, León and Shanghai can be assumed to be below mitigation costs in Hamburg.¹⁰² Therefore the realisation of projects according to the Clean

	Inhabitants	Per capita CO ₂ emissions in t/a ⁹⁷	Overall emission of the city in tCO ₂ per year	Emission intensity of GDP in tCO ₂ per million \$ PPP ⁹⁸
Hamburg	1,736,000	8.76 ⁹⁹	15,000,000	444.0
León	120,000	0.75	90,000	281.9
Shanghai	15,000,000	2.20	30,000,000	700.1
St. Petersburg	5,000,000	10.2 ¹⁰⁰	53,300,000	1,482.0
Prague	1,200,000	12.50	15,000,000	859.9
Osaka	2,900,000	9.70	28,000,000	390.8
Chicago	2,800,000	20.80	58,300,000	650.3
Marseille	900,000	6.70	5,400,000	250.5
Dresden	500,000	7.00	3,500,000	444.0

Table 9: Overview: Estimated CO₂-Emissions in Hamburg and its Partnercities

Sources: UNFCCC, World Resource Institute from International Energy Agency, Cities of Hamburg and Dresden

Estimations of the cities' CO₂-emissions based on figures for national average emissions

Since per-capita emissions may differ substantially between rural and urban population, extrapolization of national averages only can give a rough order of magnitude of CO₂ emissions of the cities.

⁹⁷ All figures for averaged national CO₂-emissions per capita stem from UNFCCC, except for the Hamburg and Dresden figures, these two stem from the cities' websites.

⁹⁸ http://earthtrends.wri.org/searchable_db/index.cfm?theme=3&variable_ID=606&action=select_countries on 7 June 2004, source of this online database of the World Resources Institute: International Energy Agency (IEA), 2001. CO₂ Emissions from Fossil Fuel Combustion (2001 Edition).

⁹⁹ <http://fhh.hamburg.de/stadt/Aktuell/behoerden/stadtentwicklung-umwelt/umwelt/energie/kohlendiooxid.html>

¹⁰⁰ source: http://earthtrends.wri.org/searchable_db/index.cfm?theme=3&variable_ID=666&action=select_countries on 7 June 2004, based on: International Energy Agency (IEA), 2001. CO₂ Emissions from Fossil Fuel Combustion (2001 Edition).

¹⁰¹ See footnote 8.

¹⁰² See footnote 8.

Development Mechanism (Léon, Shanghai) or the mechanism of Joint Implementation (St. Petersburg, Prague) is economically viable.

3.2.1 Léon

Léon is situated in Nicaragua and has appr. 120,000 inhabitants. The city is characterized by agriculture – stock-farming and cotton production as well as numerous little handicraft-enterprises building the economic backbone of the city.¹⁰³ Hamburg and Léon have founded their partnership in 1989 with a clear focus on development. The partnership aims at improving living conditions for the local population in Léon, projects being e.g. in the field of water services. In addition to the City Administration of Hamburg and the Nicaragua-Association, there are a number of NGOs active in the partnership.

Nicaragua has average annual CO₂-emissions per capita of 0.75 t. The city therefore has an annual amount of CO₂ emissions of about 90,000 t annually. Although Nicaragua has ratified the Kyoto Protocol and established a Designated National Authority and CDM-projects are therefore eligible, the implementation of CDM-projects is probably not the primary choice due to several reasons:

- Léon has relatively small overall emissions compared to other major cities in developing countries and therefore holds only limited potential for large scale emission reductions.
- The partnership Hamburg-Léon always very much headed towards ‘development’ and not so much to environmental issues – it is therefore in the tradition of this partnership to place an emphasis on secondary effects of any climate protection activities that could take place in the partnership framework. The partnership is a clear case for small-scale or micro-projects.

3.2.2 Shanghai

Hamburg and Shanghai are partner cities since 1986. Shanghai has appr. 15 million inhabitants. Besides common activities in business, culture and sports, the partnership includes a students’ exchange, educational programmes for Chinese management trainees and environmental questions. Hamburg holds a foreign representation in Shanghai that is representing the interests of Hamburg in Shanghai. The representation is headed by Katja Hellkötter and is financed by the Senate, the Chamber of Commerce, the Hamburg Harbour Marketing Association, the Hamburg Society for Promotion of Business and the Hamburg

¹⁰³ <http://fhh.hamburg.de/stadt/Aktuell/senat/welt/partnerstaedte/leon/start.html> on 21st February 2004

Tourism Ltd.¹⁰⁴ Katja Hellkötter is also the environmental manager of the Sino-German Chamber of Commerce and thus would be an excellent resource person for CDM contacts.

China has average annual per capita CO₂-emissions of 2.2 t, the city accordingly has a CO₂-volume of 30 million tons per year. Shanghai therefore has a huge potential for CO₂-reductions. China has ratified the Kyoto Protocol. A designated national authority for the CDM is not yet established but in preparation. Furthermore Shanghai is a coastal city, that might face severe problems caused by sea level rise going along with global climate change. A cooperation between Hamburg and Shanghai on adaptation measures to sea level rise and prevention of flooding might be another project option.

3.2.3 St. Petersburg

St. Petersburg is situated in western Russia and has got more than 5 million inhabitants. The partnership between Hamburg and St. Petersburg dates back to 1957 already. Besides numerous companies that have a representation in St. Petersburg, the Chamber of Commerce has a foreign representation in St. Petersburg since 1993, thus contributing significantly to the intensification of business contacts.¹⁰⁵

Russia has experienced a severe drop in CO₂-emissions after the end of communism and the economical decline that came as a consequence thereof. Russias CO₂-emissions today lie far below the emission target it adopted in the Kyoto Protocol. Russia can sell these surplus emission rights under the international Emissions Trading (assumed it ratifies the Kyoto Protocol). Furthermore there is still a case for cost-efficient reduction potentials due to the inefficiency of existing production and generation plants, that can be tapped by Hamburg.

However Russia has not ratified the Kyoto Protocol yet – so there are no projects possible under the mechanism of Joint Implementation and there is no possibility for emission trading at the moment. Cooperation between Hamburg and St. Petersburg can also be in the field of adaptation to climate change, especially flood protection and dyke construction.

3.2.4 Prague

Prague has got 1.2 million inhabitants. It lies in the Czech Republic who joined the European Union in May 2004. The partnership between Prague and Hamburg started after the end of the cold war in 1990. Average annual per capita CO₂-emission are at about 12.5 t. This adds up to an annual CO₂-amount of Prague of 15 million t which is equaling the emission amount of Hamburg.

¹⁰⁴ <http://fhh.hamburg.de/stadt/Aktuell/senat/welt/partnerstaedte/shanghai/start.html> on 21st February 2004

¹⁰⁵ <http://fhh.hamburg.de/stadt/Aktuell/pressemeldungen/2003/april/04/2003-04-04-red-01-petersburgcenter.html> on 21st February 2004

The Czech Republic has ratified the Kyoto Protocol. However, like all other new member countries, according to the Kyoto Protocol it can not enter the existing ‘bubble’¹⁰⁶ of the EU of the 15 and the respective burden-sharing agreement. However a pooling of the new member countries to form a second ‘bubble’ and then start emission transfers between the two bubbles might be an option.¹⁰⁷ Hamburg and Prague can work together doing Joint Implementation projects. However Joint Implementation projects will only be accountable from 2008 on which prevents a prompt start of activities in JI. Prague lying on the river Elbe and river flooding being a possible consequence of climate change and its augmented extreme weather events, another possibility for cooperation is in the area of flood protection and dike construction.

3.2.5 Osaka

Osaka lies on the bay of Osaka at the southern coast of Japan. The city has got 2.9 million inhabitants. The partnership between Hamburg and Osaka started in 1989. Japan has ratified the Kyoto Protocol and has per-capita CO₂-emissions of 9.7 t/a. Osaka therefore has an estimated emission amount of 28 million tCO₂ per year. Since CO₂-reductions in Osaka are not much more cost-efficient than in Hamburg, possible project activities might be exchange of experiences or cooperation in the field of adaptation.

3.2.6 Chicago

Chicago is in the North of the US and has got 2.8 million inhabitants. The citypartnership Hamburg-Chicago was founded in 1994 and was motivated among others by the immigration of Germans into Chicago and further west in the 19th century that often took there origin in the harbour of Hamburg.¹⁰⁸

In the US, average annual per capita emissions are at 20.8 tCO₂/a. For Chicago this makes an emission amount of 58.3 million tons per year. The US have not ratified the Kyoto Protocol. Under the Bush-administration this will not happen – however his democratic counter-candidate Kerry campaigns for ratification of the Protocol.

However Chicago has developed voluntary activities in the area of climate protection: The city established the ‘Chicago Climate Exchange[®]’ (CCX[®]) which started in December 2003. The CCX[®] is a self-regulatory emission reduction and trading programme for emission offsets and emission sources. Members to the CCX[®] are the Municipality of Chicago, a number of companies in Chicago from different sectors (among them manufacturing industry, energy

¹⁰⁶ See footnote 6.

¹⁰⁷ Michaelowa, Betz 2001

¹⁰⁸ <http://fhh.hamburg.de/stadt/Aktuell/senat/welt/partnerstaedte/chicago/start.html> on 21st February 2004

services, waste management, financial services), scientific institutions and the World Resources Institute as a non-governmental organisation. Members have made voluntary, legally binding commitments to reduce their emissions by 4% until 2006 as compared to 1998-2001. Projects eligible to meet the target in the initial phase are landfill methane projects and forestry projects both in the US and Brazil, agricultural methane and sequestration in the US, and fuel switching and renewable energy projects in Brazil. However projects are eligible under a set of rules that is not corresponding to the official UNFCCC rules and allows for more flexibility. The goals of the programme are to build institutions and skills to manage greenhouse gas emissions cost-effectively.¹⁰⁹

3.2.7 Marseille

Marseille is a seaport and lies on the mediterranean coast of France. It has 950,000 inhabitants. The citypartnership dates back to 1958, when it was founded as a measure for international understanding. France, like all other EU-member states, has ratified the Kyoto Protocol and participates in the European Emissions Trading Scheme. Marseille has a volume of CO₂-emissions of about 5.4 million t per year. Since emission reductions in France are not expected to be more cost-efficient than in Hamburg, there is no economic case for joint projects on climate protection. However an exchange of know-how in the field of communal climate protection activities might be fruitful. Further measures can be in the field of adaptation to climate change and rising sea level.

3.2.8 Dresden

Dresden has got 500,000 inhabitants. The partnership between Hamburg and Dresden started in 1987 and aimed at peace-keeping in Europe.¹¹⁰ Dresden lies on the river Elbe and has been severely effected by the Elbe flood in 2002. Although a causality between the Elbe flood and climate change cannot be proved, the flood has raised awareness for climate change. Going along with climate change there will be an increase in extreme weather events such as extreme precipitation that can lead to floods. Again a cooperation in the field of adaption to climate change and prevention of flooding is possible.

¹⁰⁹ <http://www.chicagoclimatex.com> on 4th of June 2004

¹¹⁰ <http://fhh.hamburg.de/stadt/Aktuell/senat/welt/partnerstaedte/dresden/partnerschaftserklaerung.html> on 21st February 2004

3.3 Stakeholders and Their Role in the Process

	Stakeholder	Role
Public sector	Ministry for city-development and the environment ¹¹¹ - Project Office ‚Sustainable Development‘ - Office for Environmental Protection → Waste Management - Office for Pollution Control and companies → ‚Energy and Pollution Control‘	- Facilitator of CDM projects and micro-projects - Investor / project developer in CDM and micro-projects - Know-how on climate protection activities → exchange of experience - Experience in adaptation measures (flood protection, dyke building)
	Prime Ministers´ s office (Citypartnerships) - Development policy, citypartnership Léon - International cooperation, citypartnership Chicago - Focus East Asia, citypartnerships Shanghai and Osaka	- Facilitator of micro-projects (and CDM projects) → emphasis on secondary effects - Investor / project developer in micro- and CDM-projects - Know-How on development cooperation activities
Business Sector	- Chamber of Commerce Hamburg - Chamber of Handicraft Chamber of Handicraft Hamburg - Industrial Association Hamburg	- CDM project facilitator - Facilitator for micro-projects
	Companies affected by the EU Emissions Trading Scheme - Waste management (waste incineration) - Energy supplier - Chemical industry - Industry – engineering of vehicles and air planes - Industry – food production - Industry – refineries - Hospitals - Traffic services (airport)	- Investor / project developers of CDM projects
	Small and medium-sized companies	- Investor / project developer of micro-projects
Civil Society	Eine-Welt-Netzwerk – One World Network	- Facilitator for micro-projects - Dissemination of information and best-practice
	Hamburg Fonds for Climate Protection	- Facilitator for micro-projects - Dissemination of Information and best-practice
	Associations for Promotion of the various Citypartnerships	- Facilitator
	Schools	- Project developer of micro-projects
	Churches	- Project developer of micro-projects
	Hamburg Institute of International Economics (HWWA)	- Scientific background
	Germanwatch	- Dissemination of information

Table 10: Stakeholders in Hamburg

¹¹¹ ‚Behörde für Stadtentwicklung und Umwelt‘

3.3.1 Hamburg - Public Sector

From the part of the Hamburg authorities, there are two stakeholders whose contribution to citypartnerships' climate protection activities is crucial. The Prime Minister's Office with its experiences in city-to-city cooperation holds contacts to the partner cities and therefore provides for a link between stakeholders in Hamburg and in its partner cities. The Ministry for City-Development and the Environment is managing the diverse climate protection programmes in Hamburg and therefore has gathered know-how in the area of communal climate protection.

In fact, both stakeholders are interested in the development of a concept for the linking of Hamburg's development cooperation and its climate protection activities. The Project Office for Sustainable Development (seated in the Ministry for City-Development and the Environment) initiated the development of such a concept in late 2003 in cooperation with the Hamburg Institute of International Economics. This paper can be seen as a preliminary draft of the concept that will be presented to the public and broadly discussed among the different stakeholders on 21st of June 2004 at the 3rd Hamburg Conference on Sustainable Development.

The Hamburg authorities are a necessary promoter and coordinator of such a concept. They provide a platform for discussions and elaboration of the concept and can build an attractive framework for activities by other stakeholders. When it comes to concrete activities to be implemented by the local authorities, there are different possibilities how to engage:

- Hamburg authorities can establish an exchange of experiences in the area of climate protection with local authorities in Hamburg's partner cities. The result could be concrete projects of the respective local authority in its own field of operations.
- Hamburg authorities can act as a 'role model' and partner with local stakeholders in partner cities to implement micro-projects
- Hamburg authorities can initiate or join CDM-projects to meet their obligations under the EU Emissions Trading Scheme (city-owned hospitals).
- Hamburg authorities can disseminate information, provide advise and thus facilitate contacts, exchange and joint projects between stakeholder groups in Hamburg and its partner cities.

3.3.2 Hamburg Business Sector

There are appr. 42 plants in Hamburg affected by the EU Emissions Trading Scheme. They are in different industries like energy supply, waste management, chemical industry, or food production. Companies operating the plants affected are in the process of adopting to the trading scheme and part of their strategies can be to engage in CDM projects to meet their

targets. This option can be promoted by the local authorities, who can provide a service function and give advice to companies on how to meet the challenges of the EU Emissions Trading Scheme and engage in the CDM.

There are more than 60 mostly small and medium sized enterprises in Hamburg already participating in the city's programme 'Partnership for the Environment'¹¹² that aims at realising reduction potentials in the business sector on a voluntary base. Projects under the partnership are motivated mostly by expected reputation effects and often by economic reasons – most projects are economically feasible. Compared to Hamburg's overall emissions, CO₂-reductions achieved by the programme are rather small in volume.¹¹³ However companies participating might be expected to have some interest in citypartnership climate projects, especially if participation guarantees for public awareness for their activities.

Hamburg's Business Associations play an important role in the business sector – they disseminate information and can act as a promoter and facilitator of both voluntary and policy-induced activities by companies. They already do have good international relations e.g. to Shanghai.

3.3.3 Hamburg – Civil Society

There are several civil society organisations already active either in citypartnerships or in climate protection activities. A number of micro-projects is underway, e.g. Hamburg schools installing small-scale PV devices with and for schools in different developing countries, among them Nicaragua,¹¹⁴ or financial compensation of flights by missionaries of the North-Elbian Missionary Society that is used to build up workshops for building solar lamps in Africa.¹¹⁵

With their experience and motivation civil society organizations can make an important contribution to climate protection in citypartnerships. Some of them already have connections to organisations in Hamburg's partner cities, others have good know-how in how to realize climate protection projects in different circumstances.

Civil society organisations further play an important role in mobilizing individual citizens for climate protection activities. Citizens can then either engage in one of the projects undertaken by churches, schools or other groups, or they can take into account climate aspects in their consumption behaviour – e.g. compensate for their CO₂-emissions by buying emission certificates.

¹¹² 'Umweltpartnerschaft'

¹¹³ See Table 7.

¹¹⁴ EduaRD, <http://www.gsbl-hh.de/Schwerpunkte/Solar/EduarD.php> on 4 June 2004

¹¹⁵ KAZE-project <http://www.bertha-hamburg.de/pdf/031017kaze.pdf> on 6 June 2004

3.4 Project Options

Table 11 gives an overview of possible activities. It tries to qualitatively sort project options taking into account criteria like:

- Effect in climate protection (amount of CO₂ mitigated)
- Complexity of activities
- Importance of secondary effects in activities
- Potential for awareness raising by activities

	Amount of CO₂-emissions mitigated	Complexity	Importance of secondary effects	Awareness raising for climate protection	Stakeholders that might contribute
Micro-Projects	-	O depends upon standards applied	++	+	- Schools - Small and medium sized enterprises - NGOS - City Administration
CDM-Projects	++	-	O	O	- Companies affected by EU Emission Trading Scheme - Business Associations - Companies that need emission certificates to provide them as service of CO ₂ -compensation - City Administration
Capacity Building for Climate Protection	- no causality detectable	O	not applicable	++	- City Administration - NGOs - Schools - Companies as disseminators of information
Adaptation to Climate Change	not applicable	varying	not applicable	O	- City Administration - NGOs - Companies active in adaptation activities

Table 11: Options for Activities in Hamburg's Citypartnerships – A Qualitative Overview

3.5 Conclusions

Climate protection has not been a topic in Hamburg's citypartnerships – other topics have had priority in this context up to now. These can be development aspects in the partnership with Léon or economic relations in the partnership with Shanghai. Decisions upon projects or activities must include the knowledge of existing decision structures and stakeholder groups in the different partnerships.

In the partnership with León for example micro-projects could play an important role since development targets range high in the partnership agenda. Stakeholders in the partnership have good knowledge in the field of development cooperation. Furthermore overall and per-capita emissions in Nicaragua are so low, that pure climate protection activities cannot possibly be a major step towards León's or global sustainable development.

In the Shanghai partnership economic interests have been prominent from the beginning. Thus projects in this partnership could focus on economically viable projects and include the stakeholders already engaged in the partnership e.g. the Chamber of Commerce and local authorities. There seems to be a case for CDM projects in this partnership. The partnership with Chicago holds possibilities for exchange on positive and negative aspects of Chicago's CCX[®]. Some likewise engagement of Hamburg stakeholders including Hamburg's citypartnerships might be an option that needs further examination.

Hamburg's local authorities can act as a central coordination point for activities. There has to be a transparent policy and clear rules on how funds that might be available are distributed. Reductions in CO₂-emissions and secondary effects achieved have to be monitored and presented to the public. This could e.g. include the development of a website for information exchange and presentation of projects and results. Any activities have to be based on a joint interest of both Hamburg and its partner cities – therefore an important next step is to contact the partner cities and further analyse what project options might work with which city and what additional ideas can come from the partners. A concrete action plan could look like the following:

1. Hamburg

- a. Further development of concept
- b. Further identification of stakeholders, integration of stakeholders
- c. Setting of clear targets and marking of according resources

2. Integration of partner-cities

- a. Hamburg delegation presents concept in partner cities and asks for feedback
- b. Raw analysis of partner cities and potential project options
- c. Feedback and concrete project ideas coming from the partner cities

3. Dependent upon reaction of partner-cities

- a. Specific action plan for every partnership
- b. Allocation of financial resources

4. Development of concrete projects in each partnership

The results of Hamburg's activities in the field of joint climate protection with its citypartnerships will be openly received by communities globally. The project has the potential to either become a best-practice that finds multiplication by other cities' activities or it might expand the project to a broadscale open platform for any citypartnerships doing joint climate protection activities. In any case, close contact to existing city-networks such as ICLEI's Cities for Climate Protection Campaign should be made.

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