
Environment and Climate Change

Review of MDG-F Joint Programmes Key Findings and Achievements.



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MDG-F Thematic Study: Review of Key Findings and Achievements

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Table of Contents

Executive summary	4
Background	5
Right holders and participants.....	6
Background to thematic issue: Environment and climate change within a development context	6
Achievements and key results	9
Enhanced governability and institutional capacities, including policy frameworks	9
Capacity building at the policy level	10
Participatory local planning and policy development	10
Amplified environmental consciousness, including climate change impact.....	11
Improved knowledge base of environmental issues, including climate change	13
Development of diagnostic instruments and indicators	13
Establishing baseline information	13
Vulnerability assessments for policy development	14
Training and development of training instruments	14
Pilot projects.....	15
Pilot Projects in Environmentally Related Finance	15
Pilot Projects in Adaptation to Climate Change	16
Pilot Projects in Access to Water	17
Conclusion.....	188
Recommendations	200
List of references and annexes.....	22, 23, 24

Abbreviations

Certified Emission Reduction Credits	CERs
Clean Development Mechanism	CDM
Joint Programmes	JPs
Millennium Development Goals	MDGs
Millennium Development Goals Achievement Fund	MDG-F
United Nations Conference on Environment and Development	UNCED
United Nations Conference on Sustainable Development	UNCSD

Executive summary

The Millennium Development Goals Achievement Fund (MDG-F) is an international cooperation mechanism whose aim is to accelerate progress on achieving the Millennium Development Goals (MDGs) worldwide. The explicit and aimed contribution of the Joint Programmes under the MDG-F Environment and Climate Change Window focused on integrating the principles of sustainable development into country policies and programs and on strengthening the national, regional and local management of environmental resources.

Numerous Joint Programmes activities, projects, and outcomes were implemented in 17 countries under the environment and climate change umbrella. These have, thus far, resulted in a series of accomplishments.

They activities have ranged, specifically, from training school-age children to generating university education programs. From aiding small farmers in adapting to climate change through the introduction of resistant crops to securing large – scale environmental financing mechanisms. They have also ranged from adapting national development plans in order to contain environmental concerns to generating local environment/development plans for small vulnerable communities.

The Environment and Climate Change Window of the Millennium Development Goals Achievement Fund generated, through the mentioned activities, a sequence of achievements, which can be structured in areas as follows:

- ***Enhanced governability and institutional capacities, including instruments and policy frameworks,***
- ***Amplified environmental consciousness, including climate change impact,***
- ***Improved knowledge base of environmental issues, including climate change,***
- ***Pilot projects.***

The key results have been to enhance the capacity of developing nations (in a variety of settings) to establish and to implement policies that intersect natural resource management with development. They have increased consciousness on environmental issues and rights as they relate to the development process. This including areas such as climate change adaptation for communities and countries rapidly having to face this phenomenon. Pilot projects have been demonstrations that very concrete activities can have very important achievements in natural resource management, in sustainable development and in adapting to climate change. Furthermore, it has been demonstrated that improved knowledge base of environmental matters as they relate to development is a cornerstone issue for improved conditions and mutually supportive of capacity building.

The Environment and Climate Change Window of the MDG-F is a highly complex work arena. The subject matter is intricate and layered. When working with environmental issues within a development context the conceptual areas (and necessarily so the interventions areas) not only deal with natural resources and environmental factors but also with social and economic factors, vulnerabilities and inequalities. Therefore, the window dealt with an all-inclusive and cohesive approach to meet the challenges and face the issues. In general, based on the analysis carried out, it can be safely stated that a series of achievements and key results have been consolidated, at different intervention levels but also across different countries and different development processes.

While the achievement of the MDGs is recorded, there is a substantial space open for apprehending the successes, visibility and future impacts of the activities within the MDG-F Joint Programmes. This can also aid in inserting the Goals and the MDG-F in the international debate on sustainable development. The insertion of the MDG Achievement Fund's accomplishment on the Post 2015 agenda can be a way to make visible the achievements attained thus far, as well as other accomplishments, lessons learnt and knowledge generated. They, can, as well be used to foster the clustering and integration of the international agenda and to move forward in the global goal of achieving sustainable and equitable development.

Background

The Millennium Development Goals Achievement Fund (MDG-F) is an international cooperation mechanism aiming to accelerate progress on achieving the Millennium Development Goals (MDGs) worldwide. Established in December 2006, with a total generous contribution of €618 million Euros (about \$US 830 million) from the Spanish Government to the United Nations system, the MDG-F supports national governments, local authorities, and citizen organizations in their efforts to tackle poverty and inequality. The eight Millennium Development Goals are (1) Eradicate extreme poverty and hunger; (2) Achieve universal primary education; (3) Promote gender equality and empower women; (4) Reduce child mortality; (5) Improve maternal health; (6) Combat HIV/AIDS, malaria and other diseases; (7) Ensure environmental sustainability, and (8) Develop a global partnership for development.

The MDG-F operates through so-called “windows”, or programmatic areas of work. This analysis addresses the Environment and Climate Change thematic window, yet with the understanding that this window, as others, mutually supports seeking the attainment of other related Goals. This window worked through the UN and its agencies, as well as with an assortment of partner governmental institutions (at different decision-making process levels, from national to local), with non-governmental organizations of different types, with community organizations and the private sector, as well as with different civil society groups¹.

The Environment and Climate Change Window supported 17 Joint Programmes (JPs) in all the regions where the MDG-F works, with a total allocation of US\$89.5 million for this window. These JPs aimed at contributing to achieving MDG 7 on environmental sustainability (particularly the target of integrating the principles of sustainable development into country policies and programs, and reversing the loss of environmental resources).² In addition, these JPs are linked to other goals, such as contributing to achievement of MDG 1 to eradicate extreme poverty and hunger. Furthermore, the work in this window has also been widened to comprise climate change; in particular, the adaptations to adverse climate change impacts.

The MDG-F Environment and Climate Change Window supported countries in order to deal with highly complex issues of environmental sustainability in a development context. Therefore, multiple layers of the environment – development continuum are confronted. Joint Programmes in this window have sought, therefore, to take integrated approaches. Integrated approaches not only in the sense of dealing with environment *and* development in a cohesive manner, but also in addressing the issues at multiple policy and action levels with the involvement of multiple stakeholders. It also sought to reduce poverty and environmental vulnerability in eligible countries through the support of interventions that improved environmental management at national to local levels and enhanced people’s capacity to adapt to climate change. Specifically, through mainstreaming environmental issues in national and sub-national policy, planning and investment frameworks; improving local management of environmental resources and service delivery; expanding access to environmental finance; and, enhancing capacity to adapt to climate change. These areas of support pursued the provision of integrated approaches to sustainable development working through fundamental capacity building³ that included policy, instruments and tools applicable at the local to national scales. In order to achieve assimilation (conceptual as well as practical) of all of the development dimensions, adequate attention had to be given to other crosscutting matters of gender, public participation, and enhancing the roles of civil society actors.

The implementation of this window’s JP took place in enormously varied situations across different nations with wide-ranging Human Development Indexes. The JPs dealt with a variety of ecosystems, from temperate areas to tropical countries. They were implemented dealing with very diverse environmental issues such as glacial melting in high mountains, drought exacerbation due to climate change, to the impacts of tropical storms. They were implemented in semi-industrialized nations as well as in countries and in regions where most livelihoods are based on subsistence agriculture. Moreover, the JPs were applied in nations undergoing full-armed conflicts, nations that had conflictive political uprisings during the Joint Programmes’ implementation, countries emerging from conflict, to nations with a stable system of democratic governance. These wide varieties of social,

¹ Using the modality of UN Joint Programmes, more information is available at <http://www.undg.org/index.cfm?P=1614>.

² At the time of this analysis and writing, roughly 75 percent of the Joint Programmes have been finalized. The other one-fourth of the JPs was at different stages of completion.

³ UNDP defines capacity development as ‘the process through which individuals, organizations and societies obtain, strengthen and maintain the capabilities to set and achieve their own development objectives over time.’ www.undp.org/capacity

developmental and environmental diversity make the JPs in this window extremely rich and remarkably diverse.

The issues of environment within a development framework are, in and of themselves, highly complex. They not only deal with natural resources, extreme weather phenomena, and environmental risk, but they also deal with poverty eradication, access to resources, sustainability of livelihoods, and quality of life improvement for those facing vulnerable situations and inequalities.

Right holders and participants

Participants in the interventions were varied, acknowledging that, for environment and development issues, the participation of different sorts of stakeholders is a necessary and imperative condition for obtaining durable achievements. This added to the richness in debates and in products produced via the window's implementation, as well as to the fruitfulness in achievements. The stakeholders that took part in the JPs were UN organizations, state and government stakeholders, and non-State actors. The beneficiaries/rights holders were the local communities, civil society organizations, indigenous groups, students, farmers, businesses and many stakeholders that took part in the Joint Programmes.

The international community participated through the different UN Agencies.⁴ Regarding state and government stakeholders, participation occurred from all foreseeable policy levels, from local to subnational/provincial/regional to national.⁵ Moreover, different line ministries and policy areas participated in this Window's Joint Programmes, from strictly environmental sectors, agriculture, forestry, urban development, and industry areas of government. For example, state actors dealing with tourism to health ministries took part in the Programmes. The non-state actors involved in different capacities reflect the richness of layers of civil society participation in the different JPs. Again, although with variations according to national circumstances and contexts, a whole series of stakeholders took part in different capacities. From indigenous groups in Latin America to small-scale subsistence farmers in Africa, to business students in Asia a number and types of civil society (groups and individuals) took part in the Programs. The JPs were focused on developing activities and obtaining achievements through multi-actor participatory approaches, a highly relevant approach in order to bring to the table multiple interests to provide dialogue and attempt to solve multifaceted development issues jointly and equitably.

The interventions and approaches for this window were layered and varied; fittingly so in order to face the layered and varied issues that the JPs were dealing with when promoting activities in environment and climate change. Between and among the different Joint Programmes these multi-layered interventions allowed for diverse approaches. Approaches that went from those linked to national institutional support to more local approaches directly involving local actors and stakeholders in environmental interventions. The latter point namely being that, even within each JP, a wide-ranging set of approaches and interventions were used to tackle the issues in a multifaceted format. Specific interventions were developed in training, education, assessments, policy and policy instruments, research, and pilot projects.

Background to thematic issue: Environment and climate change within a development context

Environmental issues have been increasingly visible in the development agenda in the last few decades. This is an expression of an evolution and consolidation regarding the notion of sustainable development. The notion of the environment as a development factor has meandered through different conceptualizations. It has gone from strictly natural resource preservation efforts to more contemporary notions that sustainable development should be people-centered yet at the same time it should be in harmony with the environment. This last notion indicative, for sustainable development approaches, that the concern or the core of the matter is not the natural and or the constructed environment *per se* or *in and of itself* but how it relates to society. This is also underlined by the concept that sustainable development incorporates economic, social, and environmental variables in an integrated manner.

⁴ The participating agencies that took part in this window were FAO, IFAD, ILO, IOM, PAHO, UNDP, UNEP, UNESCAP, UNESCO, UNICEF, UNIDO, UN HABITAT, UNV, UN WOMEN, UNWTO, WFP, and WHO.

⁵ Furthermore, state and governmental institutions participating in the activities were from the most diverse line ministries and government areas, such as, inter alia, environment, industry, trade, agriculture, health, education, housing and urban planning, forestry. Different levels of government were also involved including national, sub-national (provincial, regional, district-level), as well as local governments, also from several policy areas within each level of government.

Yet, this concept of furthering development without degrading the environment has proven highly elusive, at a global level as well as at national/local levels in developing countries. Forest and other natural habitat losses, overexploitation of natural resources, chemical contamination, and lack of safe water and of sanitation in a large proportion of the developing world are some environmental issues that continue to affect societies and that at the same time hinder development. Furthermore, a close link exists between poverty and environment. This is a root problem of many development issues, particularly for the poor who directly rely on natural resources for their livelihood. Poor nations and poor societies face severe environmental problems, among them scarcity and inequality issues.

The MDGs Goal 7: *Ensure Environmental Sustainability*, is framed in a context of development and poverty reduction. Within this Goal, a series of targets were set out, as seen in the Annexes. Targets to integrate sustainable development principles into policy, to reverse loss of environmental resources through national programs and policies, reduce biodiversity loss, and improve environmental conditions for the poor.

Further to the environment and sustainability issue, a relatively new occurrence in the environmental field is the climate change discourse. The change in weather patterns due to anthropogenic activities (current changes along with those anticipated in the immediate and medium-term future) has gathered the attention of the international community. With climate change a reality and growing impacts being expected in the short and medium term, developing countries are beginning to formulate policies and programs in order to reduce vulnerabilities and build resiliency to the impacts of climate change. It is within this framework that the MDG-F incorporated this issue within the environment window.

Climate change adaptations are adjustments in natural or human systems in response to actual or expected climatic changes or their effects. Adaptation is of primary concern in developing countries given the vulnerabilities these nations and their societies face in light of climate alterations. Climate change is having and will have in the near future great impacts upon vulnerable communities and nations. The impending effects of climate change are multiple, beginning with hazards due to substantial changes in weather-related phenomena. The intensity, frequency, and the duration of these hazards is increasing, and it is causing a series of effects such as population displacement, negative health impacts, risks in food production and food security, among others.

Many regions of the world are being affected by changes in weather patterns, from disaster-prone areas to societies that depend directly on the natural resources. Cyclical disaster, such as droughts, floods, hurricanes and other similar events are changing in magnitude, frequency, and intensity. Nevertheless, these are not absolute impacts in the sense that climate change impacts are felt differentially (i.e. more strongly) in vulnerable communities and nations. Not only communities and countries that are in areas where climate is altering rapidly and having negative impacts, but this is amplified for societies that are highly vulnerable to these impacts due to risk factors such as high poverty rates and inequalities. That is, climate change impact is exacerbated in societies that have fragile socio-economic situations. Climate change not only has a negative impact on immediate issues, but also can undermine livelihoods in the long term. Agriculture, coastal towns and villages, infrastructure are several of the sectors vulnerable to adverse climate change impacts. Encountering and facing climate change challenges will need remarkable exertions in already socially, environmentally frail developing countries, and large efforts by the international community to aid these societies to deal with this phenomena.

As stated before, the MDGs are specific goals expressed as aimed-at achievements. Regarding the aim to reduce biodiversity loss, set for 2010 as one of the targets within MDG Goal 7, unfortunately, this target has not been achieved, and a reverse tendency of what the target aimed at has been identified. Based on current trends, it is expected that the loss of species will continue throughout this century, threatening the development process in numerous poor countries and unequivocally affecting those billions of people who rely directly on biodiversity and natural resources for their livelihood. Within the biodiversity spectrum, however, there are significant sub-trends to be acknowledged as positive. According to The Millennium Development Goals Report of 2012, there has been a reduced rate of forest cover loss (due to multiple factors, such as less deforestation, establishment of new forests, and natural expansion of existing forested lands). Therefore, worldwide forests net loss decreased over the last 20 years, from -8.3 million hectares per year in the 1990s to -5.2 million hectares per year in the last decade. South America and Africa experienced the largest net losses of forested areas in the last decade (i.e. between the years 2000 and 2010). Yet, Asia experienced a net gain of about 2.2 million hectares annually in the last ten years, mostly associable to large-scale reforestation programs (mainly in China, India and Vietnam). In sum, forest area increase in Asia is helping to slow down global forest losses worldwide, but this is not sufficient to reverse the global trend.

The ultimate question, nonetheless, is to establish what this means for human development. Firstly, a decrease in forested land impacts negatively on the many socioeconomic benefits and services that forests provide to societies, in particular to societies in developing countries who live in direct interaction with forests. Forests entail direct livelihoods for a large proportion of the world's population. Throughout the world, 10 million people are employed in forest-related activities. Direct and indirect benefits are practically intractable due to their variety and value. Besides the obvious forest timber products, societies (in particular in developing nations) rely directly on woodlands for many goods and services, such as food (for human consumption and for animal feed), medicinal plants, and for construction materials, just to name a few. As will be seen further on, forest related activities took place within the JPs, achieving concrete impacts in integrated forest management.

Regarding one of the most basic human needs, which is water, if current trends continue, the target dealing with access to drinking water will be exceeded. In 2010, 89 per cent of the world's population had access to improved drinking water sources. That is, an escalation from the 76 per cent that had access at the beginning of the 1990s. Which implies that the MDG target of halving the proportion of the world population without good access to drinking water has been met, and five years ahead of the 2015 set date. The number of people using improved drinking water sources extended to 6.1 billion in 2010, up by over 2 billion since 1990. Yet, about eleven per cent of the world's population — that is about 900 million people — remain without improved access to drinking water and, factoring in population growth, it is expected that 605 million people will still lack coverage by 2015. Coverage remains very low in Sub-Sahara Africa and in Oceania, regions that —unfortunately—will not be able to meet the MDG safe drinking water target. This brings forth the issue of inequalities. According to the MDG Report of 2012, when analyzing data from 35 countries in sub-Saharan Africa (which represents about 85 percent of that region's population) there are very significant access differences between the poorest and richest population quintiles. Above 90 percent of the region's richest fifth of the population in urbanized areas use improved water sources, and over 60 percent have piped water on premises. In addition, gender inequalities arise when examining water issues within a development context. Again, when water is not readily accessible within the household, it must be carried from its access source. According to an analysis of data from 25 countries in sub-Saharan Africa, representing 48 per cent of the region's population, women and girls bear the primary responsibility and burden for this sort of water collection. Water issues and water access are recurrent themes in the Environment and Climate Window, and areas of clear achievements.

Concerning the aim to achieve significant improvement in the lives of slum dwellers, although the target has been met, these improvements are failing to keep pace with the growing number of urban poor. The share of urban slum residents in developing nations declined, from about 40 percent when the MDGs were agreed upon in 2000 to 33 percent currently. In absolute numbers, this means that about 200 million of these people improved their living conditions, by gaining access to improved water sources, to sanitation, and to durable or less crowded housing, thereby exceeding the MDG target. However, the absolute number of slum dwellers keeps rising, although the proportions of total urban populations that live in this sort of habitat conditions are declining. Given accelerated urbanization, some 860 million people are estimated to be living in slums (compared to the roughly 650 million in 1990 and 760 million in 2000).

In order to situate these issues within a broad development agenda and key international forums, it must be appreciated that the MDG agenda was set and implemented straddling several different key international forums. The MDGs followed (in time and conceptually in its environmentally related goals and targets) the United Nations Conference on Environment and Development (UNCED) of 1992. In this Conference, and through its resulting instruments, development was firmly footed alongside the environment, for the time in such close link in the international arena. Resulting out of UNCED there were also a series of international forums dealing with climate change (adaptation as well as mitigation), many of them related to the negotiation, approval and implementation of the United Nations Framework Convention on Climate Change and its Kyoto Protocol, and subsequent instruments, programs and policies. Recently, in June 2012, the UN Conference on Sustainable Development (UNCSD or Rio+20) took place. The Conference's document indicates that signatory countries "underscore that the Millennium Development Goals are a useful tool in focusing achievement of specific development gains as part of a broad development vision and framework for the development activities of the United Nations, for national priority-setting and for mobilization of stakeholders and resources towards common goals." This is indicative that the MDGs and their enabling activities are strategic actors in the international development debate. Regarding environment and development, there is strategic space to situate the MDGs and the Post-2015 agenda firmly within key international forums. Within this background, the following section details what have been the processes, enabling activities, and achievements within the MDG-F Window on Environment and Climate Change.

Achievements and key results

This section expands upon types of achievements and key results identified throughout this exercise. This exploration has been done using a people-centered development approach and broadly based on theory of change notions. Furthermore, the following is a consolidation of achievements and key results, given that they are identified patterns and trends. For each identified trend, the information on particular JPs is summarized and is further used as examples, in addition to being a means to provide authentication of the analysis, given that it is impossible to highlight and list all relevant information from every single country where the window had a Joint Programme. This is also to say that these are illustrations abstracted as evidence, trying to keep a regional balance, but if a country is not highlighted it does not imply in any way or form that a particular JP did not accomplish the achievement extracted

Enhanced governability and institutional capacities, including policy frameworks

The countries where Joint Programmes for the Environment and Climate Change Window took place have amplified their governability and institutional capacities to deal with these subjects, within a conceptual framework that emphasizes that environmental issues are not strictly conservation of natural resources, but must be the base for human development. Given that first target sought through MDG 7 is the integration of environment-development principles into country policies and programs, this is a key area for and a very suitable tendency for achieving these goals. The activities have resulted in new policy frameworks, support of existing institutional capacities, as well as enabling activities and action plans to endorse the aim of managing natural resources while sustaining development.

In addition, this identified trend has functioned in many instances in an integrated manner, mainstreaming environmental concerns into development plans, as well as incorporating development issues in environmental policies. In these cases, the conceptual and practical difficulties to mainstream environment into the development process have been breached. In broad terms, the success factors at this level of analysis were various. Importantly, an integrated multi-sectoral approach is one of the vital factors in these achievements. Integrated approaches (for example, integrating productive sectors with strictly environmental sectors, or integrating national and local policies with capacity building) were key for success, but also for appropriation/ownership and perhaps for sustainability. The enabling capacities and institutional frameworks integrated environment issues (including climate change) multi sectorally as an underlying principle for approaching development goals.

Throughout the Environment and Climate Change window of the MDG Achievement Fund, activities were implemented while creating dialogue and practice between the different policies levels in each country, from national to local. In Peru, for example, local governments have mainstreamed environment and climate change issues in community development plans and budget operational plans. These plans have been established in a participatory manner. They are management options enhanced regarding environment and climate change at the community level and establish policy frameworks that deal jointly with poverty and climate change issues, including budgeting allowances for environmental matters in local financial plans. Organizational changes, institutional upgrading, policy framework enhancement and strengthened environmental management capacities have the potential of being long-term effects originating from the Joint Programs. They are also building blocks within which further multi-sectoral planning and management tools can be implemented in order to manage natural resources and adapt to climate change within a development framework.

As indicated in the section on knowledge management, the generation of information, of environmental indicators, and of research has, circularly, aided in generating improved policy frameworks. This mutually supports the two interventions areas of the JPs, policy and knowledge. Indicators are the cornerstones of any policy drafting and implementation. Enhanced institutional capacity is linked to enhanced and improved knowledge base. Institutional capacity needs an adequate knowledge base of local problems, vulnerabilities and capacities in order to be able to generate and apply suitable environment and development policies.

For instance, in the Philippines, research conducted within the Joint Programme on the relationship between environmental variables and dengue fever served as reference for the eventual adoption of the Administrative Order on Mainstreaming Climate Change in Health Programs. This policy instrument was issued recently by the Department of Health in 2012. It will incorporate climate change issues as part of health policy. This and other achievements identified in the Philippines sustain the implementation of a Climate Change Law adopted in the country in 2009. This norm has

mandated the mainstreaming of climate change in its development plans and processes, and the achievements identified in this country provide tools for the directed mainstreaming. Many of the achievements identified are mutually supportive between research, capacity building and development of knowledge-based tools with the creation or strengthening of institutional and policy frameworks.

Capacity building at the policy level

There was also success in capacity building at the policy level, including legislation (national to local levels), where laws were either promoted or supported in order to deal with environmental issues and/or climate change adaptation. The contributions and achievements generated at the policy / legislation levels not only supported the creation of a norm or legal instrument, but more so, in most of the cases, in giving substance and backing to the application of such an instrument and creating tools enabling implementation

In China, the Joint Programme notably supported the development of the Basic Energy Law. In addition, in this country, the JP reinforced the incorporation of policy recommendations on reducing the impacts of agriculture on climate change, sea-level rise and glacial retreat, into the country's Five-Year Plan for National Economic and Social Development. This is the national development plan for China approved in 2011. This means that policies frameworks in different subjects such as energy and agriculture do now incorporate environment and climate change considerations, enabling better consideration for these factors. Furthermore, planning tools (such as the mentioned plan) include better environmental and climate change considerations.

Also in China, other policy and more specific instruments were developed. For example, drawing upon important connections between climate change and human health, program partners developed local environment and health action plans at the provincial level. These have resulted in improved frameworks to deal with the health impacts of climate change.

The activities of the JPs have had policy influence at several levels. In Colombia, the National Policy on Integrated Hydrological Resources Management included strategies proposed by the JP dealing with vulnerability and climate change adaptation issues. In addition, the Colombian National Development Plan (2010-2014) incorporated issues on climate change adaptation originating out of the national dialogues in this subject organized by the JP. Therefore, the policy influence of the JPs activities have resulted in more proactive policies that include the points of view and needs of multiple stakeholders.

Participatory local planning and policy development

Participatory approaches have bolstered policy development, as well as transformed working relationships between and among civil society stakeholders and between different governance levels. At times these were innovative practices. These activities worked towards mainstreaming environmental issues in national and sub-national policy and planning frameworks. All of this, in consequence, generates frameworks for actionable measures in order to improve governability over natural resources and promoting environmentally sustainable development.

Planning is a keystone approach to development that incorporates environmental variables and strategizes in order to face development in a sustainable matter. Yet planning for sustainable development needs to be carried out at all policy levels (from national to local). In many developing countries planning at the local level that takes into account environmental variables and mitigating the impact of climate change is highly deficient or practically non-existent. Within the activities of the Joint Programmes, local planning instruments were developed in a participatory manner, either development instruments that incorporate environment and climate change issues or directly environmental instruments with development aspects.

In Bosnia Herzegovina interventions of the Joint Programme centered around providing capacity for developing Local Environmental Action Plans for about thirty municipalities. A large number of stakeholders took part in most of the plans' preparations. Through the creation of these plans, there was also an aim to generate national – local policy synergies. The drafting of local environmental action plans means that municipalities and local actors have more efficient tools to advance in the local administration of environmental resources and service delivery (such as water and sanitation). Improving environmental governance through the application of environmental planning instruments (such as the ones generated within the JP) explicitly aids Bosnia and Herzegovina to accelerate the process of European incorporation and ensuing nation-wide development, given that environmental problems threaten to become one of the most serious obstacles on the country's road to European integration.

In Afghanistan, at the sub-national level, the Joint Programme supported the establishment of Provincial Environment Advisory Councils in 19 provinces (out of the 34 provinces in the whole country). In addition, four provincial strategic plans (in the provinces of Herat, Balkh, Bamayan and Laghman) were supported in order to incorporate sustainable development issues. The establishment of environmental councils and the incorporation of sustainable development issues in provincial strategic plans have aided in mainstreaming these matters in national and sub-national policy and planning, strengthening institutional capacity to incorporate environmental concerns. Guatemala's JP also fostered the creation and follow through of local municipal-level policies and instruments, mainly in order to face climate change risks. The program fostered the creation of environmental ordinances and climate change adaptation policies as well as local development plans that included themes of concern regarding climate change impacts. Furthermore, in order to strengthen these action areas, promote their application and applicability, as well as uphold articulation between different governance levels, other complementing planning mechanisms were also applied. These were mainly committees for implementation follow – up and dialogue tables. With these actions, tools were made available for local governance vis-à-vis climate change and environment, but also for actions follow-up regarding the application and continuance of local policies

Amplified environmental consciousness, including climate change impact

Awareness raising and educational activities that result in amplified environmental consciousness are crucial first steps to generate policy that is inclusive and sustainable and to implement necessary interventions to promote development within an environmental framework. Raising environmental consciousness also aids communities to identify themselves as rights holders and claim their rights vis-à-vis these issues.

Through outreach and training, stakeholders engaged in activities that raised consciousness on environmental issues and how these affect their well-being and livelihoods. In Guatemala, to promote integrated water use, the program trained people in 66 communities located in and around six micro basins. Knowledge and skills were generated through some 500 training events that sought good practices transfer and capacity building regarding alternative technologies for water and sanitation. These actions were developed with teachers and students from 48 schools and 32 communities, benefiting about 6000 students and teachers and some 3500 members of the communities adult population. Awareness raising on improved water access were achieved. In addition, good practices in water and sanitation in schools was implemented, directly improving health in educational centers and in the communities by improving access to water, a critical issue for human development in the area.

In Nicaragua, participative environmental awareness raising activities were developed, some through alternative media such as community radio programs. This has resulted in incidence in local – level radios in order to increase participation and communicate environmental education programs as well as strengthen early warning systems for natural disasters.

For Panama, similar programs were implemented, working closely with different local indigenous communities in a climate change awareness raising campaign. In this country, working with indigenous communities in diverse geographic areas, and diverse ecosystems, and with populations particularly differentially vulnerable to climate change impacts, most of the activities and knowledge management products were developed and delivered in the indigenous communities' own languages, facilitating dialogue and acknowledging the communities linguistic capacities. Local groups in these countries have learned about environmental issues (such as climate change) and how they affect them. They are also aware of what their entitlements are in this area and have better tools to deal with the problems, such as the assimilation of early warnings when facing risks associated with climate change.

Awareness raising was also aimed at decision-makers. In Egypt, advocacy and outreach efforts have prompted institutional resiliency to deal with energy problems. The program, supported the Energy Efficiency Unit of the Egyptian Cabinet of Ministers, promotes and supports the implementation of Energy Efficiency in Egypt. The approach is based on making energy efficiency the responsibility of all major energy consuming productive sectors and setting up an energy accounting mechanism that links energy use to each sectors' productivity indices. The broader objective is to integrate efficiency into the key sectors of the economy and link its impacts to economic development. The work of this Unit has also led to the creation and approval of a plan to reduce energy consumption in public buildings, to give greater importance and visibility to energy and energy efficiency issues at the national policy level, and to strengthen mainstreaming of energy efficiency as a greenhouse gas mitigation tool into national policy. All of the above are key issues on a fast speed developing country in the Maghreb region.

In China, the awareness of more than 200 companies was raised on climate change and corporate social responsibility. Furthermore, information on green finance mechanisms available to the private sector was disseminated to private companies, generating knowledge on financial tools available in order to conduct business activities more attuned with environmental issues.

For Senegal, awareness raising and capacity building on forestry management and forest ecosystems was completed for national and local officials, in addition to significant progress made in public education and awareness building at a more general level. Institutionally this stimulates 'buy-in' of the environment – development interface and supports policy reforms in access to water, in energy, in forestry management. That is, as awareness raising and capacity building increases for policy makers and decision-makers, concerns on sustainable forestry management and related environmental issues. This strengthens and increases organizational capability to translate capacity into national scale policies.

Education (formal and informal) and training have been one of the sub-areas of work within the window and a space opened for many achievements. The education and training activities were confronted not only as formal instruction exercises but also were intended to generate capacity and raise advocacy levels on environment and development issues. These activities were implemented working with grassroots groups in training and awareness raising or in more formal educational settings. This is relevant for generating capacity not only for decision – makers but also for non-state actors and other stakeholders.

In Afghanistan, individuals from community development councils as well as government personnel, and graduate and postgraduate university students, received training in management of natural resources, community mobilization and community-based interventions. Through this training, local and national capacity has increased in order to deal with environmental management issues at different levels by addressing strategic capacity gaps of policy-makers.

Educational activities have also been implemented in subjects that are groundbreaking in the developing countries involved. For instance, in China, as part of the JP, training on "Green Business Options" took place at more than twenty universities. The Green Business Options program has been developed to provide participants with skill sets to explore green business opportunities. Five hundred participants were trained in eleven provinces, including students, graduates, former servicemen, village officers, unemployed persons, farmers, and migrant rural workers. This sort of training transferred skills for students and business people in order to explore so-called green business opportunities.

In Ethiopia, training was provided for members of cooperative pastoralists associations on business development skills including climate change issues. Furthermore, based on capacity needs assessments, Training of Trainers and training of target beneficiaries took place in early warning systems as well as in various climate adaption thematic areas. This knowledge transfer has generated capacity to deal with climate change issues and business skills attuned to environmental concerns.

In Jordan, training for officials on water management was completed, including a training course on trans boundary water management imparted to decision-makers and government officials. This training has been a significant input in developing a cooperative framework for sustainable management of shared water resources, including trans boundary hydrological resources. This and similar activities have responded to Jordan's strategic challenges in the water sector by increasing awareness on how to adopt policies in integrated water management and on developing management tools for hydrological resources. The JP has provided a basis for sustained access to improved water supply sources despite increased water scarcity induced by climate change.

Within the Peruvian and the Turkish programs, formal training, education, and capacity building platforms in climate change and in other environmental issues were shaped. In Peru, a formal Diploma program in climate change science and management was developed as a combined effort of the JP with other cooperation activities, and through strategic alliances with several universities, using an interdisciplinary approach. In Turkey, a series of formal training programs took place. These have included the generation of certification courses for staff from government and institutions on climate change and other environmental issues, as well as the assembly of university groups of experts in the window's subjects. Furthermore, training of health personnel, and the development of training kits on climate change adaptation for school-age students took place. These platforms and educational activities have raised the level of knowledge, of awareness, and built capacity of target populations in integrated issues of environment, development and in new areas of concern, such as climate change.

Improved knowledge base of environmental issues, including climate change

Activities have been carried out with the aim to strengthen and improve the knowledge base of environmental issues, of how they relate to human development, as well as of how new phenomena such as climate change is having an impact on livelihoods.

Development of diagnostic instruments and indicators

The lack of knowledge, lack of diagnostics and of tools to generate a factual base of environmental issues and their impact on development is a weakness in many (if not most) developing countries. The lack of appropriate tools also hinders the generation and application of policies that can protect the environment on an equal footing as to promote human development. Improving comprehension of environmental variables in relation to development, and of the instruments needed to tackle these issues can build upstream for the formulation of local to national policies in this arena.

For Guatemala, diagnostic tools for the development of integrated use of hydrological resources were developed. They emphasized the concept of water as a human consumption need. Mapping and surveys were conducted on Senegal's different ecosystems and databases were completed dealing with food security and vulnerability with environmental considerations. All of these tools are the first stepping-stones for the development of plans in these areas.

In addition, in Senegal, a pioneering macro-economic review and study of the forestry sector's contribution to Gross Domestic Product was carried out as part of the Joint Programme. This, and other associated studies on micro-economic and macro-economic value of ecosystem services, contributes to determine the total real value of forests and of ecosystems. This valuation has had also the specific goal of exploring potentially increasing government investment in the sector. These revisions have strengthened the capacities of agents of national and local governments to deal with forest taxation and forest ecosystem services. The valuation exercise has generated knowledge on the market and non-market value of ecosystems and the services they provide. In terms of valuation, the results of the project show that the true value of ecosystem services is almost 100 times higher than market value. This creates possibilities to not only know what the real value of natural resources are but also to generate policy and investments that take into account the intrinsic wealth of natural resources and how this can help towards the country's development.

Establishing baseline information

As indicated in the sector on policy development, the generation of information, of environmental indicators, and of research has mutually supported the generation of improved policy frameworks. Indicators are the cornerstones of any policy drafting and implementation. The lack of baseline information hinders policy formulation as well as policy implementation processes. Therefore, the information flow sought and achieved has, in this Window, sustained informed decision-making processes in the sense that improved knowledge is a keystone to policy frameworks. Coincidentally, then, knowledge products developed have aided in the implementation of policy frameworks.

In China, within a critical review of current environmental health monitoring systems, the improvement of indicators and baseline information was sought, testing new approaches to monitoring and surveillance of health/environment variables. For example, looking at new linkages between climate change and health (for instance, rise in temperatures and its impact on health variables) or implementing new approaches to monitoring drinking water quality and its relation to health. These knowledge-generating activities supported and fed local environment and health action plans at the provincial level. Other activities supported were vulnerability assessments on the impacts of climate change on water resources in the Yellow River Basin. Within the country's context, pioneering research was also carried out. Such as investigations on the effects of climate change on glacial melting in the Himalayas Mountains, depletion of groundwater resources in Northern China, as well as the assessment of climate change impacts as they relate to sea level rise in the country's coastal areas. This not only contributes to scientific knowledge regarding the nation's vulnerabilities as it faces climate change, but it also enlightens the decision – making process as to what measures need to be implemented to adapt. These examples as similar others illustrate the dialogue between knowledge generation and knowledge-based policy frameworks.

For Egypt, the program was able to identify national policies needed to adapt to climate change by studying climate change impacts on the Egyptian economy. These studies used estimates of change

in water supplies, in coastal flooding, and in crop yields to estimate the potential impacts of climate change on Egypt's agriculture economy in the years 2030 to 2060. These studies identified the priorities sectors that will be impacted negatively and made recommendations for adaptation solutions to minimize the impacts on the economy. This information has been supplied to the appropriate policy domains and is to be included in the upcoming Adaptation Strategy in the Agriculture and Water sectors of Egypt. Furthermore, the Egyptian National Water Research Center will complete the Strategy of Available Water Resources under varying climate change scenarios. In the agricultural sector, the Agricultural Research Center of Egypt has completed field experiments in order to make recommendations to policy makers as well as to farmers in order to maximize productivity under variable climate change conditions.

Vulnerability assessments for policy development

In Colombia, the program carried out climate vulnerability analysis. As part of this work, climate change adaptation tools, relevant to local productivity and local conditions, were identified. For example, the use of drought resistant and weather resistant crop seedlings. The identification of these crops has been disseminated to the communities in order to facilitate planting and the use of climate-resistant crops. The vulnerability analysis identified the need, also, for setting – up of an agro-climatic alerts system with community participation. The agro-climatic system for weather alerts has begun to be implemented, combining traditional knowledge with more scientific indicators to anticipate climate variations.

In Jordan, several research projects were started under the program's support, dealing with the assessment of treated wastewater quality under different climate change scenarios, the quantitative and qualitative evaluation of water resources in Amman Zarqa Basin due to climate change, and the assessment of surface water harvesting given changes in rainfall. All of these studies have been done with the aim of supporting national policy frameworks dealing with water and climate change adaptation. The activities provide resources for the government of Jordan to develop its capacity to address and mainstream climate change adaptation into the national development agenda.

Training and development of training instruments

In Mozambique, throughout the Chicualacuala District, farmers (associations as well as individual farmers) received training on drought-resistant crop seeds, the introduction of new crops, agricultural production (including conservation agriculture), which increased and diversified the levels of production, and the application of new agricultural techniques. Through the assimilation of this training, farmers have incorporated knowledge that aids in adapting to climate change impacts that negatively affect their livelihoods. Over 250 families in five communities are producing a range of vegetable crops under irrigation. About 65 hectares is under production. The majority of the vegetables produced are sold locally, the rest are consumed by the respective families. Left over or spoiled crops are fed to pigs supplied by the JP, which are then sold or eaten. Records of the last harvest in July 2012 show that over 330 tons of produce was harvested. This compares to 0 tons before the project started when the farmers were not using these areas for farming. Part of the proceeds from vegetable sales is used to purchase diesel for irrigation pumps and to run the tractor that the project provided for the farmers. Participating families have improved their diets and incomes significantly because of this initiative. Indirect benefits accrue to several hundred other families that purchase the vegetables produced in the irrigated schemes, this being an indicator of possible replicability when other farmers perceive the benefits of the knowledge communicated by the pilot project.

A manual was produced in Afghanistan for mainstreaming environmental management into training curriculum for the Afghanistan Institute for Rural Development (AIRD). The manual and ensuing training helped in incorporating environmental management into local community sustainable rural development processes.

The aim of the Ethiopian program was to enable pastoral communities to adapt to climate change and restore degraded rangelands. For this purpose, climate change adaptation manuals and toolkits were developed, based on assessment of the risks and vulnerabilities of pastoral communities to climate change. Many of these tools have been translated to local languages in order to facilitate different communities' assimilation of the adaptation-appropriate technologies. These have not only been distributed to the relevant groups for their use and implementation, but have also fed policy frameworks for mainstreaming climate impact adaptation into district, regional and federal development planning system, illustrating an interesting interactive circle of knowledge generation – capacity building – policy framework strengthening.

Numerous instruments and tools were developed and implemented in planning processes and capacity – building activities in the Philippines. Among them, a Climate Change Vulnerability and Assessment Tools for four key sectors (i.e. health; water resources; coastal resources; and agriculture/forestry/biodiversity sector). Several Mainstreaming Guidelines were also drawn, and Capacity Assessments were carried out at numerous levels. A Climate Projections for 2020/2050 tool was developed, as well as Contingency Plans. An Operations Manual and a Web Manual for the Early Warning System were developed, and a Vulnerability Assessment Report with focus on human settlement areas was done. The latter led to the designing of a draft City Shelter Plan that has climate change parameters. Design Parameters of a Climate-Resilient Coastal Settlement/Community were also completed. It was indicated that successor outputs to Vulnerability and Adaptability studies and tools developed were the generation of Mainstreaming Guidelines on Climate Change, which in turn were subsequently adopted by the concerned government agencies to update their plans and operating procedures.

Also in the Philippines, a Study on the Use of Climate Change Variables to Predict Dengue Cases was completed. This study determined the relationships of weather and environmental variables (such as humidity, temperature and water levels) to the spread of dengue fever. These research outputs not only strengthened the knowledge base but also derived in policy outcomes. Due to the achievements reached through some of the above activities, new and additional support was also provided by the UN in the Philippines for the improvement of urban planning systems through the production of maps and for the interface with an Automated Weather Station. The impact of the tools designed and implemented in the country are having further positive consequences, given that they are cornerstones for other environmental tools and programs.

Added to the lack of knowledge on the relation between environment and development in developing countries, there is further greater inward unawareness of how these two areas interact for vulnerable and marginal groups. The development of information and tools regarding environment and climate change adaptation within the programs explored this differential knowledge, awareness, and actions. The Yasuní Biosphere Reserve and the Yasuní National Park in Ecuador's Amazonia region are considered some of the greatest biodiversity zones on the planet. Several highly vulnerable indigenous groups live within the protected areas borders. In order to administer the areas, many products were developed by the program, such as databases with information on the reserve, as a support underpinning the national park's management plan. Furthermore, a review on the state of the art regarding norms and policies concerning isolated indigenous peoples groups was also developed. These instruments provide the state with information and management tools to be able to manage the protected areas while at the same time respecting indigenous groups' rights and promoting their development.

Pilot projects

Many achievements have been attained through innovations, pilot projects as well as different types of direct interventions. They dealt with access to finance, improving access to water and sanitation for the poor, promoting the sustainable use of biodiversity and ecosystem services, and increasing clean energy service delivery, among others types of interventions. Here too there has been a synergy between direct interventions and capacity building. Many projects were demonstrative (with a sort of 'learning by doing' approach) while many also included more specific training and capacity building components as part of the interventions.

Pilot Projects in Environmentally Related Finance

Expanding access to environmentally related finance, including seeking partnerships and market-based instruments, is an area that needs much advancement and inventive in the developing world. This approach to environmental finance should also explore innovative areas such as including integrating climate risk reduction into investment and productivity decisions. In the Philippines, an Innovative Financing Scheme was launched and it has shown impressive results. About 850 farmers benefitted from the financing scheme, which was coursed through local co-operatives, a rural bank, and several municipal governments. The beneficiaries of this scheme gained income increments from their initial harvests, while rationalizing their activities in relation to climate change impacts and adaptation. As of December 2011, about US\$ 360,000 had been loaned out for the production of rice and corn varieties that are known to be resilient to climate change effects. Alternative livelihood projects were also financed as a strategy to diversify farming risks brought about by changing climate. A Weather Index-Based Insurance System was also piloted in the area, which already paid out indemnities to 327 farmers-beneficiaries in two production cycles. This is the first known initiative to adapt crop insurance to climate change effects in the country through linking risks and payouts with

climate projections and actual occurrences of extreme climate events (i.e. cycles of low and of excess rainfall exacerbated by climate change). Farmers who benefited from the lending and financial innovative programs reported positive effects in terms of increased incomes from their main crops and additional productivity brought about by the supported schemes, attributing additional incomes to lower financing costs (as offered by the program).

The Joint Programmes have supported nations in obtaining and generating environmental financing. In some cases, this has been by aiding the adequate insertion of nations in international environmentally related finance mechanisms (including evaluating and promoting the business case for participating in carbon finance markets). The Clean Development Mechanism (CDM) is one such arena. It is one of the instruments created through the Kyoto Protocol to facilitate carbon trading. Under the CDM, emission-reduction projects in developing nations can earn certified emission reduction credits (CERs). These saleable credits can be used by industrialized countries to meet a part of their emission reduction targets under the Kyoto Protocol. However, developing countries have articulated that successfully inserting themselves into this financial market is an extremely difficult process.

The Joint Programme has aided Egypt in expanding its access to environmental finance tapping into this innovative system. As part of the JP a Clean Development Mechanism Awareness and Promotion Unit was set up. This Unit was developed to become a central hub to raise awareness of the benefits of carbon trading to industrial and political stakeholders, to provide technical support to promote carbon trading in Egypt, to develop networks and partnerships, to promote innovative thinking in this subject. In addition, a specific area of work has been set-up in order to help overcome the difficulties of the CDM registration process. By means of the creation of this Unit, as of October 2012, the Egyptian CDM Portfolio included 101 projects, where 12 are registered and 16 are under the process of registration before the end of the Kyoto Protocol. It is estimated that the achievable Certified Emissions Reductions (CERs) in the portfolio will reach 10 million tons CER per year for the next 10 to 28 years, depending on the project life cycle.

Pilot Projects in Adaptation to Climate Change

Direct interventions, for example in upgrading or installing weather instruments that can measure weather variables and alterations in weather patterns, are necessary in order to face climate change with knowledge and preparedness, and have been part of many JPs. For example, in the Philippines, Automatic Weather Stations were built in three towns where the above-mentioned financing schemes are being implemented. Eleven Water Level Gauges and sixteen Manual Rain Gauges were also supplied in the project area.

In Panama, weather monitoring equipment was improved and technical capacities to manage and process weather-related and hydrological information was upgraded. Also, instruments to measure and monitor different weather-related variables was supplied to disperse, vulnerable communities. All of these activities improved not only the knowledge related to environmental variables and climate change issues, but also improved preparedness, early warning systems, and assessments associated with climate change risks.

In Mozambique, while many JPs themes and activities have been normal practice in the environment field in the country (e.g. environmental trainings, water drilling, agricultural intensification or extension), others are not (climate change policy making, local environmental management, renewable energy) and are pioneering interventions. The combination of these subjects, that is to cover jointly climate change and populations improved livelihoods, is groundbreaking and an innovative approach in the country. The demonstration projects were designed to help rural communities to adapt to climate change and diversify their livelihoods. For this, farmers associations have been assisted (in coordination with provincial and district governments) in diversification of their productivity (for example, by establishing irrigated vegetable gardens, introducing fish farming and beekeeping, expanding cash crop production). The support of livestock production was also essential for reducing vulnerability of the population to drought. The immediate results have been the provision of small additional incomes and improved diet for over 250 families. This impact is particularly important in dry seasons where food security has not been guaranteed and which has been negatively affected by changing climate factors.

In Mauritania, villagers have worked directly in reverting desertification and severe ecosystem degradation through reforestation practices and increasing vegetation cover that have stabilized dunes, set up plant nurseries, and established grazing areas for livestock. The population has participated in the management of several forests and the restoration and development of some 5500 hectares of degraded areas. For specific ecosystems, also, national authorities together with local ones have contributed to the regeneration of mangroves. Around several villages in the lower Trarza delta, ramparts covering 182 hectares of mangroves were planted and protected. The plant cover has

increased significantly due to conservation and regeneration of hundreds of hectares of land, significant vegetation regeneration has taken place, from a baseline of virtually absent cover to hundreds of hectares restored and protected in a participatory manner. Seven-hundred and fifty hectares of gum tree forests were regenerated and nearly 300 hundred hectares of silvopastoral lands were rehabilitated. Dune fixation through vegetation cover regeneration has decreased the risk of infrastructure burial (such as of schools, wells, roads, houses) due to dunes shifting. In addition, areas threatened by sea encroachment were protected. Furthermore, through support in orchard production for 20 cooperatives, the income of nearly 9000 households has been increased.

Three hundred and fifty hectares in Guatemala were established as agrosilvopastoral systems (of these, about 240 agroforestry and about 110 silvopastoral). In addition, a further 220 hectares have been protected. The combination of growing crops, of trees, and pasture animals in the same units of lands in an integrated manner promotes conservation and, at the same time, sustainable use of natural resources. This group of actions has put in place forest systems that not only protect woodlands and promote conservation but are also adjusted to the multiple sustainable uses of forests, including human productivity.

In China, a project effectively demonstrated waste heat-recovery power generation technology and clean coal technology possibilities. At the same time, this project explored the effects of a transition to a low-carbon economy upon employment. These demonstrations of clean coal technology were conducted in ten enterprises, including three of China's major coal companies. The positive results of this demonstration project were shared with 500 other companies across the industry in the country. The bottom line effect of this demonstration project was the reduction of carbon intensity and of emissions, mitigating damages to natural resources.

Pilot Projects in Access to Water

As can be seen above and in other achievements, water issues (such as access to water) are basic developmental topics within the environment framework. Direct interventions and pilot projects have been implemented in innumerable communities. This thematic issue winds through many of the interventions, plans, and sub-projects.

Furthermore, through pilot projects direct interventions, in Mauritania, more than 28,000 people have now improved access to drinking water through boreholes and improved water supply and sanitation. A network of six laboratories was established to ensure the quality control of drinking water at the regional level. The increased access to water and sanitation has reduced the incidence of gastrointestinal diseases associated with unsafe water in the areas in Mauritania where these interventions took place.

Fifty-six communities have been engaged in Guatemala in the promotion of alternative water and sanitation technologies. These have benefitted over 6,000 people, improving water access for the population. While in Nicaragua, over 5,500 people (of which about half are school-age children) have improved access to drinking water and sanitation, through works and service delivery supported by the program.

In Mozambique, in Chicualacuala District, one of the main problems faced by the local population is access to drinking water for human consumption, for animals, and for crop irrigation. Within this district, a region with high inequalities factors and ensuing vulnerabilities, and where international cooperation agencies generally do not operate, activities took place for improvement of water supply for local communities. Eight water supply systems were built, several of them from new boreholes, and equipment was upgraded. To strengthen water supply, rainwater-harvesting tanks were constructed. Water committees within the community were formed in order to facilitate works maintenance, and to collect user fees. This has aided in improving water access for human consumption in the community and for stimulating sustained supply for the population's productive activities.

Many times direct interventions had training imbedded as a component, seeking synergies between demonstration and capacity building. Within Afghanistan, as part of a direct intervention and pilot project, seeds were harvested and used in reseeded 110 hectares in several provinces. Kitchen gardens were also established. Training in natural resources management and restoration of deteriorated rangeland reached nearly 5000 people. These activities have resulted in restoration of deteriorated rangeland as well as improved natural resource management practices.

Albeit this section's achievements are demonstrative, pilot and many times innovation projects, they reinforce efforts to scale-up or replicate. This is so within the areas of intervention or for replication and scaling – up to other local, regional and national areas. Notwithstanding the demonstration or small-scale aspects of many of them, they can have a multiplying effect in the future, not only for the experimental capacity and for positive effects, but also because many of them worked within other capacity building frameworks. The programs, pilots, and projects that have a high change of being

replicated or scaled – up are those that have responded to local needs (including improvement of livelihoods jointly with natural resource management), that have national and local ownership, as well as those that have effectively been mainstreamed into policy.

Conclusion

In general, based on the analysis carried out, it can be safely stated that a series of achievements and key results have been consolidated, at different intervention levels but also across different countries and different development processes. Following is a brief conclusion along a series of variables within the significant achievements in this Window's Joint Programs.

The Environment and Climate Change Window of the MDG-F is a highly complex work arena. The subject matter is intricate and layered. When working with environmental issues within a development context the conceptual areas (and necessarily so the interventions areas) not only deal with natural resources and environmental factors but also with social and economic factors, vulnerabilities and inequalities. Therefore, the window dealt with an all-inclusive and cohesive approach to meet the challenges and face the issues.

The interventions, in several of the programs, addressed inequalities (expressly or tacitly) when they focused in geographic peripheral areas of a country or areas where national states do not provide on equal footing social services as in other regions of the same country. But the interventions also acknowledged and addressed inequalities by taking into account and working with sectors of society which are exposed to vulnerability factors (population living in areas where environmental problems or climate change impacts are more severe than for others, indigenous groups, subsistence farmers, women groups, children and youth, for example). That is, in situations where the inequalities (social, gender, ethnic) make people more vulnerable to environmental degradation and environmentally related risk factors. As indicated in the sections before, for example, work has concentrated in river basins in Panama where indigenous groups are more vulnerable to climate change impact regarding health, food security, or even regarding vulnerability to disasters. In Turkey, the JP developed interventions to enhance living conditions of some of the most vulnerable and poorest people in the country living in tent villages. In Mozambique, work zeroed in a remote district with very high vulnerability to climate change impacts, an issue added to social inequalities.

Capacity and relevant assessments as a base for developing the activities and products of the JPs have been indicated as a basis for success. Given that projects function better when knowing the gaps, vulnerabilities, inequalities, and needs for a particular country or region where the interventions take place, baseline assessments are crucial for effectiveness, and sustainability.

Within the window numerous tools and instruments to be used in environmentally oriented development practice and in adaptation to climate change were developed. A myriad of tactical instruments were developed, including strategic management instruments, mainstreaming of environment and climate change issues in development plans, information products, publications and manuals, among others. As the illustrations above exemplify, these are useful means for capacity building in many development projects in order to deal with environmental issues and climate change adaptation and do have a direct feed into policy and policy-implementation.

The integration of diversity is also perceived as a success factor, diversity expressed by integrating into the JPs different levels of decision-making processes, different areas of government, and different members/groups of civil society. The MDG-F support areas expressively pursued the provision of integrated approaches to sustainable development working through fundamental capacity building that included policy as well as instruments and tools applicable at the local to national scales. Furthermore, the multiple dimensions of environment and development work has to include public participation and enhancing the roles of civil society actors. This is particularly relevant in the case of environmental topics within a development framework given that these issues manifest themselves in multiple levels and must be dealt with accordingly. Environment and development issues are national and local at the same time, are economic and social, and are risks and opportunities. Therefore it is a success of the Window to have worked (within each country's context undeniably) integrating this diversity, of policy levels, of stakeholders and of issues. Here also is the added value of multi-sectoral approaches. Environment and development issues are, often and by their very nature, conflictive issues. In the Yasuní project, in Ecuador for example, the development needs of indigenous populations had to be combined with the aim to protect an area of the country rich in biodiversity. Global environmental benefits had to be joined with sustainable development aims to local populations. Therefore, the participation of diverse stakeholders has been an entry point to integration. Furthermore, sustainable development problems are manifested at the local level when many of their origins are national or global in nature. For example, in the Bosnia Herzegovina case

accession to the European Union is hindered by local environmental issues. The activities and achievements of the JP in this country dealing with local environmental planning can help the nation integrate and expectantly develop further.

Sustainability of projects, programs, and of outcomes is contingent upon many variables, and the long-term impact and sustainability of JP achievements rely, basically, on the uptake of these achievements by the local and national actors involved in the program's interventions. The information suggests that their sustainability and replicability, albeit depending on many factors, has a greater likelihood of occurring if activities leave installed capacity with local populations, NGOs, and civil society organizations for these small-scale projects. Furthermore, greater sustainability probabilities exist when the interventions respond to local needs fulfilling capacity and knowledge gaps. As in all international projects of this sort sustainability and durable change is more likely when the projects are designed and implemented to insert themselves in as well as strengthen the institutionality of the different nations in order for them to face environment and development issues (including climate change adaptation). When programs fulfill local needs, such as in the case of the financial mechanisms achieved by the JPs in the Philippines and Egypt, for instance, the likelihood of sustainability and continuance is strengthened.

Several key lessons have been learned which are generally common to the achievements gathered. As with the achievements and key results themselves, it should be stated that these are not lessons learnt neither from the totality of the JPs nor from a particular one, but more so tendencies or patterns regarding key findings.

- One the key programming contributions of the achievements in this window has been capacity building in its many aspects (such as developing of planning instruments, capacity building at the policy level, training and research).
- Regarding these sort of programming contributions a key lesson has been that the interventions should be based on strategic knowledge: knowing what the capacity gaps are, which are the policy contexts, what are the vulnerabilities; what are the issues, problems, terrain, ecosystems, etc., before the interventions begin.
- Furthermore, a key lesson is that the interventions' achievements are more observable as well as have a better chance to sustainability when they strengthen the capacities in the field, strengthen the enabling environment and the institutionalities present.
- Another key lesson has been that the achievements are more evident when their products, results, and outcomes are mainstreamed into the development process, as opposed to being left as a tangential environmental factor.
- Furthermore, a crucial lesson is that enabling activities in environment and climate change adaptation, must be firmly based on development issues in developing countries, in order for them to be equitable, able to accomplish, and ownership-oriented.

Recommendations

In addition to the achievements obtained and lessons learnt as part of the Joint Programs in the Environment and Climate Change Window, some considerations can be put forth for the way forward. A series of recommendations can be made for generating enabling environments, programmatic recommendations and future steps, and specifically in knowledge sharing as well as in advocacy efforts in the Post 2015 arena.

An enabling background in this thematic field should fully incorporate the development aspect in environmental policy and vice-versa. The full incorporation of environmental matters in development strategic plans and policies should be a base from which to work.

The seventeen Joint Programs within the Environment and Climate Change window produced and/or fostered the production of an enormous amount of products that dealt with these subjects within a developmental context. Manuals, information products, indicators, research products, management plans, natural resource valuations, videos, dissemination, policies, assessments, and information on pilot and demonstration activities have been produced. Regarding recommendations for knowledge sharing, therefore, it is crucial to continue to nourish knowledge management and knowledge sharing platforms. First of all, of course, to highlight the results, outcomes, outputs and achievements sustained throughout the implementation of the JPs in the Environment and Climate Change Window. Furthermore, to further and foster synergies and exchanges between and among the different JPs in each country where the interventions took place, in particular where similar subjects were dealt with, as well as among different JPs in different countries within the environment and climate change window. In addition, also importantly, there is a need to foster further exchanges and synergies on the ground and at different levels between similar cooperation projects in the countries where these projects take place. The JPs have generated considerable knowledge and, at this point, it is a good juncture to accelerate knowledge management and knowledge sharing activities.

Regarding recommendations for key advocacy efforts for upcoming international forums, it must be stated, first of all, that the Post 2015 agenda is still being debated. In addition, the international community is also cognizant that the Post 2015 agenda is being set and debated within a quite different international situation than the one present when the MDGs were being set. That being said, there should be key advocacy in the upcoming international forums to establish the Post 2015 agenda to integrate environmental issues as strategic matters in human development.

In relation to key advocacy efforts for upcoming international forums, within this area of action it is believed that there could be two general recommendations (summarized here and explained immediately below):

(a) Use conceptual and practical achievements of the MDGs as leverage instruments for the insertion in advocacy efforts; and,

(b) Link to and intertwine with other processes in the international debate.

Albeit whatever criticisms can be made to the MDGs (conceptual or practical) they were innovating in the sense that they set specific and time-bound targets to complex visions of what is development. This is one of the practical achievements of the MDGs and their subsequent enabling activities (such as the MDG Fund). Specific achievements could, more cohesively, then be tracked if visions and targets are set. Besides the conceptual attainment of perceiving development in a multi-faceted manner, these aspects of the MDGs can be used as a leverage instrument for the insertion of Development Goals in other advocacy efforts carried out by the international community. In the environment and climate change field, the international agenda is filled with debates, on application of multilateral environmental agreements, or on how the world moves forward in tackling global environmental issues. Therefore, there are many opportunities to link to advocacy efforts.

A case in point is the follow-up to the recent United Nations Conference on Sustainable Development.⁶ The MDGs conceptual and practical achievements, as well as the perceived need to connect, link and intertwine the international agenda(s), has been specifically acknowledged in the area of environment by the UNCSD Rio + 20 Conference and its specific outcomes. That is, the Rio + 20 conference has as one of its main outcomes the agreement established by UN member States to launch a process in order to develop a set of Sustainable Development Goals (SDGs), that should build upon the Millennium Development Goals and converge with the post 2015 development agenda. Specifically, it was determined that an "inclusive and transparent intergovernmental process open to all stakeholders, with a view to developing global sustainable development goals to be agreed by the General Assembly" should be established. This document also indicates that the SDGs setting

⁶ United Nations. Report of the United Nations Conference on Sustainable Development. Rio de Janeiro, Brazil, 20–22 June 2012, A/CONF.216 / 16.

should be a process that “needs to be coordinated and coherent with the processes to consider the post-2015 development agenda.”

Initial opportunities for UN member nations and other stakeholders are commencing, and discussions are being set-up in order to develop the SDGs aligned with other provisions and outcomes agreed upon in the Rio + 20 process. In this case, the beginning discussions, following scientific research and policymaking guidelines, would fall under three main areas:

- (1) How the SDGs could complement the MDGs and be integrated into the post-2015 agenda;
- (2) How the SDGs could balance the economic, social and environmental pillars of sustainable development;
- (3) How to develop universally applicable goals that, at the same time, take into account different national realities, capacities, and levels of development.

Therefore, this structured discussion within the international environmental community has an entry point, which specifically links to the MDGs related to the environment and builds upon them within the post – 2015 agenda. This is an interesting entry point and instance where the MDGs and their enabling activities (in this specific case, the MDG Achievement Fund’s window on environment and climate change) have a great deal to contribute and can mutually benefit both arenas with synergies.

The insertion of the MDG Achievement Fund’s accomplishment on the Post 2015 agenda can be a way to make visible the achievements attained thus far, as well as other accomplishments, lessons learnt and knowledge generated. They can, as well be used to foster the clustering and integration of the international agenda and to move forward in the global goal of achieving sustainable and equitable development.

List of references and annexes

- a. Annex 1.
 - i. Table 1: Joint Programmes
 - ii. Table 2 MDG 7: Ensure Environmental Sustainability -- Targets
- b. Annex 2. Bibliography, references and consulted documentation

Annex 1 Table 1: Joint Programmes⁷

Joint Programme Title	Country
1) Strengthened Approach for the Integration of Sustainable Environmental Management into the Afghanistan National Development Strategy	Afghanistan
2) Mainstreaming environmental governance: linking local and national action in Bosnia and Herzegovina	Bosnia and Herzegovina
3) The China Climate Change Partnership Framework	China
4) Integration of ecosystems and adaptation to climate change in the Colombian Massif	Colombia
5) Conservation and Sustainable Management of the Natural and Cultural Heritage of the Yasuní Biosphere Reserve	Ecuador
6) Climate Change Risk Management in Egypt	Egypt
7) Enabling pastoral communities to adapt to climate change and restoring rangeland environments	Ethiopia
8) Strengthening Environmental Governance in the face of Climate Risks in Guatemala	Guatemala
9) Adaptation to Climate Change to Sustain Jordan's MDG Achievements	Jordan
10) Mainstreaming Local Environmental Management in the Planning Process	Mauritania
11) Environment Mainstreaming and Adaptation to Climate Change	Mozambique
12) Local and regional environmental management for the management of natural resources and provision of environmental services	Nicaragua
13) Integration of Climate Change Adaptation and Mitigation Measures in the Management of Natural Resources in Four Priority Watersheds of Panama	Panama
14) Integrated and adaptive management of environmental resources and climatic risks in High Andean micro-watersheds	Peru
15) Strengthening the Philippines' Institutional Capacity to Adapt to Climate Change	Philippines
16) Expanding access to environmental finance - Reversing the decline in forest ecosystem services	Senegal
17) Enhancing the Capacity of Turkey to Adapt to Climate Change	Turkey

⁷ Please note that these are the original project titles upon approval by the MDG-F, some aspects of the Joint Programmes were changed in some of the countries, but the titles were not altered to reflect these alterations.

Table 2 MDG 7: Ensure Environmental Sustainability -- Targets

Target 7.A:

Integrate the principles of sustainable development into country policies and programs and reverse the loss of environmental resources

Target 7.B:

Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss

Target 7.C:

Halve, by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation

Target 7.D:

By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers

ANNEX B. Bibliography, references and consulted documentation

JPs Evaluation Reports

- Afghanistan. Mid-Term Evaluation. Thematic window: Environment and Climate Change.
- Bosnia and Herzegovina. Mid-Term Evaluation. Thematic window: Environment and Climate Change.
- China. Mid-Term Evaluation. Thematic window: Environment and Climate Change.
- Colombia. Evaluación Intermedia. Ventana Temática: Ambiente y Cambio Climático.
- Colombia. Evaluación Final. Ventana Temática: Ambiente y Cambio Climático.
- Ecuador. Evaluación Intermedia. Ventana Temática: Ambiente y Cambio Climático.
- Ecuador. Evaluación Final. Ventana Temática: Ambiente y Cambio Climático.
- Egypt. Mid-Term Evaluation. Thematic window: Environment and Climate Change.
- Ethiopia. Mid-Term Evaluation. Thematic window: Environment and Climate Change.
- Guatemala. Evaluación Intermedia. Ventana Temática: Ambiente y Cambio Climático.
- Guatemala. Programa Conjunto Fortalecimiento de la Gobernabilidad Ambiental ante el Riesgo Climático en Guatemala. INFORME FINAL DE MONITOREO Y EVALUACIÓN. PC-FOGARCLI.
- Jordan. Mid-Term Evaluation. Thematic window: Environment and Climate Change.
- Mauritania. Mid-Term Evaluation. Thematic window: Environment and Climate Change.
- Mauritania. Final Evaluation. Thematic window: Environment and Climate Change.
- Mozambique. Mid-Term Evaluation. Thematic window: Environment and Climate Change.
- Mozambique. Final Evaluation. Thematic window: Environment and Climate Change.
- Nicaragua. Evaluación Intermedia. Ventana Temática: Ambiente y Cambio Climático.
- Nicaragua. Evaluación Final. Ventana Temática: Ambiente y Cambio Climático.
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- Senegal. Mid-Term Evaluation. Thematic window: Environment and Climate Change.
- Turkey. Mid-Term Evaluation. Thematic window: Environment and Climate Change.
- Turkey. Final Evaluation. Thematic window: Environment and Climate Change.

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The Millennium Development Goals Report. 2012. United Nations.

Midgley, S., Dejene, A., and Mattick, A. Adaptation to Climate Change in Semi-Arid Environments. Experience and Lessons from Mozambique. Food and Agriculture Organization of the United Nations Rome, 2012.